

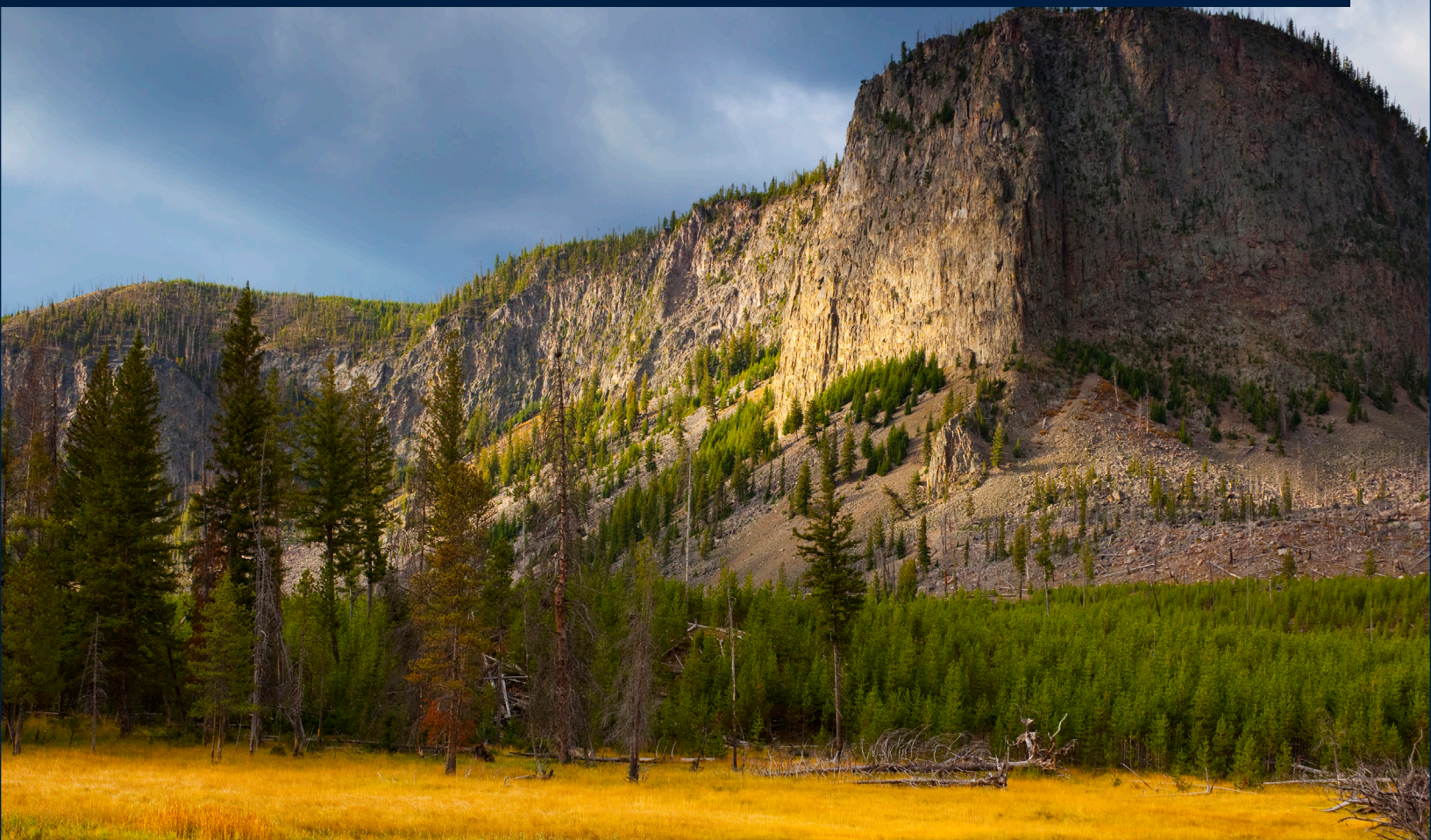


RETIREMENT SYSTEM

A Fiduciary Fund of the State of Wyoming

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Year Ended December 31, 2019



Partnering to Build Financial Security For Members and their Families



VISION STATEMENT

Partnering to build financial security for members and their families

MISSION STATEMENT

Provide expert administration and responsible investment of Wyoming's public retirement and supplemental savings programs

VALUES

- Integrity
- Accountability
- Commitment
- Excellence

PHILOSOPHY

The Wyoming Retirement System Board and the Wyoming Retirement System staff are committed to:

- Carrying out all statutorily mandated and other responsibilities in a timely, courteous, professional and ethical manner.
- Safeguarding the financial integrity of the System through prudent management.
- Providing adequate member benefits for all plans within the parameters of actuarial funding.

Wyoming Retirement System

A Fiduciary Fund of the State of Wyoming

Comprehensive Annual Financial Report For the Fiscal Year Ended December 31, 2019

6101 Yellowstone Road, Suite 500
Cheyenne, Wyoming 82002
(307) 777-7691
retirement.wyo.gov

David Swindell, Executive Director
Mike Bleakley, Deputy Director
Andrea Odell, Finance Manager

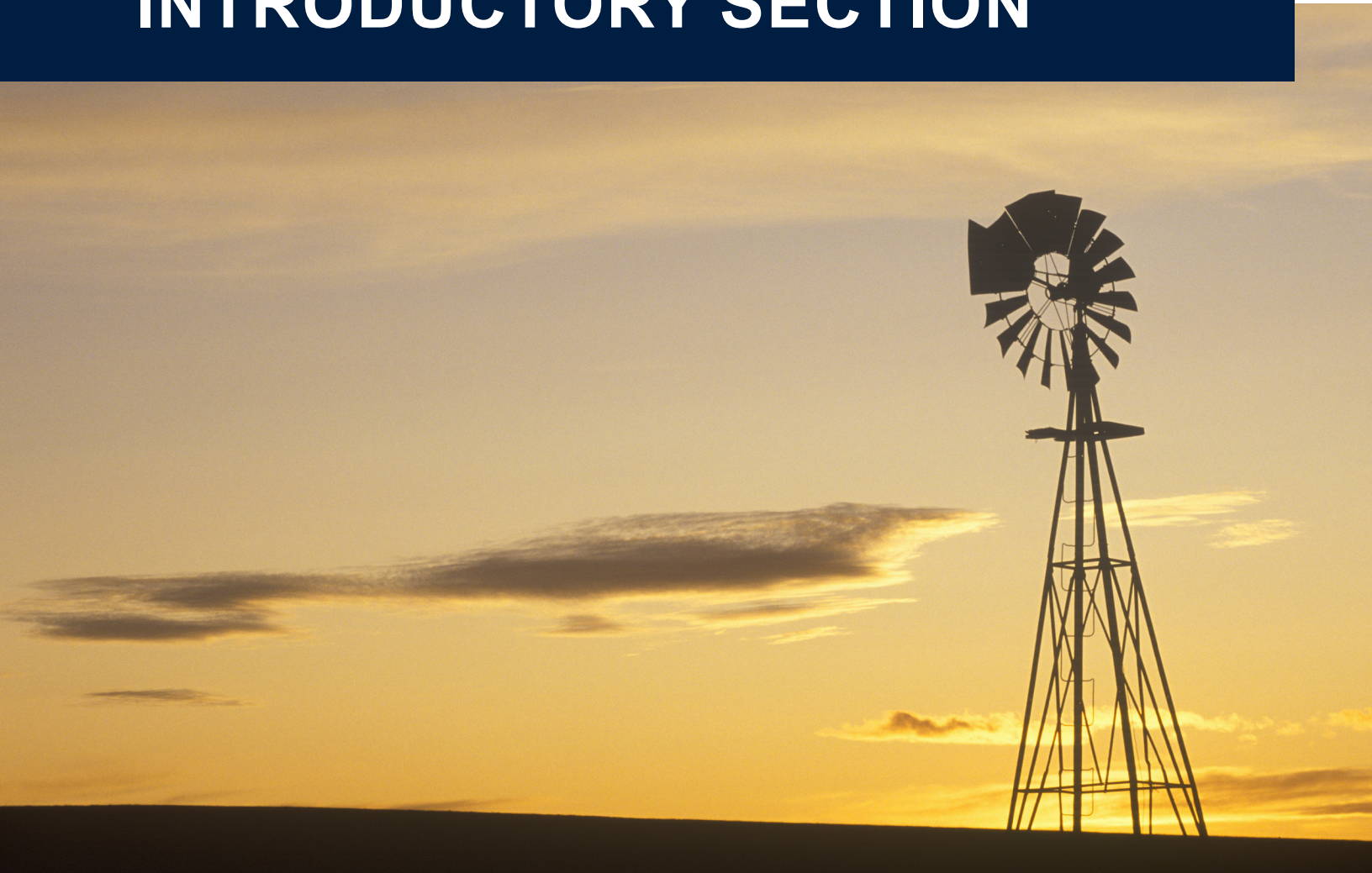
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Comprehensive Annual Financial Report 2019

INTRODUCTORY SECTION



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Wyoming Retirement System

Partnering to Build Financial Security for Members and their Families

Letter of Transmittal

June 26, 2020

Wyoming Retirement Board
101 Yellowstone Road, Suite 500
Cheyenne, Wyoming 82001

Dear Board Members:

We are pleased to present the Comprehensive Annual Financial Report (CAFR) of the Wyoming Retirement System (WRS) including the Wyoming Deferred Compensation Program (457 Plan) for the year ended December 31, 2019. The financial reporting entities of the WRS include the Public Employees Pension Plan; State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan; Paid Firemen's Pension Plans A and B; Judicial Pension Plan; Law Enforcement Pension Plan; Volunteer Firefighter & EMT Pension Plan; Air Guard Firefighter Pension Plan and the 457 Deferred Compensation Plan.

Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with the WRS Management. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the net position of each plan and the combined changes in the net position of the WRS for the year ended December 31, 2019. All disclosures necessary to enable the reader to gain an understanding of the WRS's financial activities have been included.

The Wyoming Retirement System and Wyoming Deferred Compensation Program were established by legislation and authorized as indicated in the notes to the financial statements. The purpose of the Wyoming Retirement System is to provide administration of eight defined benefit retirement plans and act as Plan Sponsor to the Wyoming Deferred Compensation Program.

The financial statements have been prepared in accordance with generally accepted accounting principles applied on a consistent basis as agreed upon by the Governmental Accounting Standards Board (GASB). Financial information presented throughout this Annual Report is consistent with the financial statements.

Financial Information

The Wyoming Retirement System's transactions are reported on the accrual basis of accounting. Contributions are recognized as revenue when due pursuant to formal commitments as well as statutory and contractual requirements. Expenses are recognized when the corresponding liabilities are incurred.

WRS Management is responsible for establishing and maintaining the system of internal controls. This system of internal controls provides management with reasonable, but not absolute, assurance regarding the safeguarding of assets against loss or unauthorized disposition and the reliability of the financial records from which the financial reports are prepared. The concept of reasonable assurance recognizes that: (1) the cost of a control should not exceed the benefits likely to be derived; and (2) the valuation of costs and benefits requires estimates and judgments by management. Discussion and analysis of net position and related additions and deductions is presented in the Management's Discussion and Analysis (MD&A) in the Financial Section of this report.

Plan Financial Condition

The funding objective of the WRS pension funds is to meet long-term benefit requirements through contributions, which remain relatively level as a percent of member payroll over time, and through investment earnings. Historical information concerning funding progress is presented as a schedule in the Actuarial section of the CAFR. Net Pension Liability

The Wyoming Retirement System has an actuarial evaluation annually that calculates the funded status of each of the eight defined benefit plans administered by the system. The 2019 Evaluation was performed by Gabriel Roeder Smith &

Letter of Transmittal

Company (GRS). They performed two evaluations for each plan. The actuarial funding reports provide information useful for making long-term funding and contribution decisions. The GASB 67/68 reports provide information for accounting purposes. As of January 1, 2020, the Actuarial Funded Ratio for eight plans administered by WRS was as follows:

	Actuarial Funding Ratio	GASB 67 Accounting Ratio
Public Employee Pension Plan	73.16%	76.83%
State Patrol, Game & Fish Warden and Criminal Investigator Plan	75.86%	80.01%
Volunteer Firefighter & EMT Pension Plan	72.47%	75.64%
Paid Fireman's Pension Plan A	41.35%	27.32%
Paid Fireman's Pension Plan B	93.81%	95.93%
Judicial Pension Plan	95.08%	102.62%
Law Enforcement Pension Plan	84.50%	89.05%
Air Guard Firefighters Pension Plan	85.11%	90.19%

A Schedule of Funding Progress is included within the Actuarial Section. The net pension liability of each plan is reviewed annually. The statutes governing the Wyoming Retirement System's plan requires that the unfunded liabilities be financed systematically over future years.

Investments

The defined benefit plan assets of the WRS are held at Northern Trust, which acts as custodian of all investment, except for those assets held by the treasurer of the State of Wyoming and the 457 Plan. Northern Trust also administers a securities lending program on behalf of the WRS. Daily, Northern Trust provides WRS with detailed accounting reports, which include all trades, receipt of income and accrual information. On December 31, 2019, the net position for all eight defined benefit plans totaled \$9.0 billion, which represents a 14.24% increase from the \$7.9 billion held on December 31, 2018.

Management retains a professional investment consultant who reports quarterly the investment returns by manager and provides recommendations regarding the managers and portfolio holdings. The investment consultant, Meketa Investment Group, Inc. (Meketa), provides the Board with a measure of how well each of the investment managers perform relative to their benchmarks and peers. WRS's internal investment team includes a Chief Investment Officer, three Senior Investment Officers, three Investment Analysts and two Investment Interns. Investment activities are monitored by both internal and external auditors for compliance with WRS's Investment Policy Statement (IPS).

An integral part of any investment policy is strategic asset allocation. This asset mix is designed to maximize investment returns while minimizing risk through optimum portfolio diversification. The Board's approved target allocation is outlined in Note 3 to the Basic Financial Statements. The annual return of funds for calendar year 2019 was 18.72%, net of fees.

The Financial Section and Investment Section contain more detailed analysis and information.

Professional Services

Professional consultants are retained to perform services essential to the efficient operation of the WRS. State statutes require an annual audit be performed either by the State Audit Department or by an independent auditor. The accounting firm of Eide Bailly, LLP performed the annual audit. The auditor's report on the basic financial statements is included in the Financial Section of this report.

The actuarial valuations provide a means by which to measure at a point in time for each retirement plan assets, as well as liabilities and the impact on those liabilities proposed plan modifications may have. Reports from the WRS's actuary, Gabriel Roeder Smith & Company (GRS) are included in this report.

Operations and Activities

During 2019, WRS continued to refine its pension administration software system (Retirement Administration and Investment Network or RAIN) which went live in May 2014. Calendar year 2019 enhancements included moving payment processing from the State of Wyoming to Northern Trust. RAIN will continue to be enhanced during the next few years.

Pension operations continued to provide a high level of service to members and posted the following statistical indicators:

- Processed 1,784 retirement applications
- Processed 1,884 refund applications
- Answered approximately 22,235 phone calls
- Deposited \$364.3 million dollars in employee, employer and other contributions
- Issued \$655.5 million dollars in retirement benefits to approximately 32,486 pensioners across eight retirement plans

Awards and Acknowledgments

The WRS submitted its 2018 report to the Government Finance Officers Association (GFOA) to be considered for a Certificate of Achievement for Excellence in Financial Reporting. We are pleased to announce that the WRS was notified of its selection for the certificate of achievement award for 2018. This represents the twenty-sixth (26) consecutive year that WRS was recognized in this manner. The Certificate of Achievement for Excellence in Financial Reporting is the highest form of recognition in the area of public employee retirement system accounting and financial reporting.

We express our thanks and appreciation to all stakeholders including our members, affiliated employers and to the various employee organizations and associations for their continued cooperation and support.

We also wish to express our special thanks and appreciation to WRS staff, members of the pension plans, the WRS Board of Trustees, Volunteer Firefighter & EMT Board of Trustees, our consultants and other associates whose diligence and commitment have contributed significantly to another year of accomplishment for the WRS.

Finally, we wish to thank the Governor and the Legislature for their commitment to the financial integrity of Wyoming's public employee retirement systems. The foresight and support exhibited consistently by the Governor and members of the Legislature are both critically important and commendable.

Sincerely,



Andrea Odell
Finance Manager



Mike Bleakley
Deputy Director



David Swindell
Executive Director



Wyoming Retirement System

Partnering to Build Financial Security for Members and their Families

June 30, 2020



Laura Ladd
WRS Board Chair

Dear Members, Benefit Recipients and Employers:

On behalf of the Board of Trustees, I am pleased to present the Wyoming Retirement System (WRS) Comprehensive Annual Financial Report (CAFR) for the fiscal year ended December 31, 2019. This report provides a detailed view of the financial and actuarial status of your retirement system. The Financial Section of the report is prepared in accordance with generally accepted accounting principles and includes financial statements that are attested to by WRS's independent auditors. Additionally, I want to comment on some of the other objectives and accomplishments of WRS which are integral to the successful operation of the system.

Pension Contribution

As I write this, our nation has been battling the COVID-19 pandemic which is reaching deeply into the fabric of everyone's lives. Markets are volatile, unemployment is surging and lives are disrupted. The toll in human suffering is large and growing. But we are long-term investors and the pandemic highlights the value of what we do. As markets plunged in March and our nation sought emergency financial aid in many forms, WRS pension payments arrived as scheduled. They arrived again in April and again in May and will continue to do so. This CAFR shows that WRS issued pension benefits totaling more than \$655.5 million during 2019 –about \$55 million every month. WRS has retirees across the globe, but 79% of these payments go to Wyoming zip codes. Wherever they go, these benefits stabilize member families and communities. Our reliable pension payments have always done this, but now it means more.

All this happens with a remarkable value to the taxpayer. Only 30% of the benefits paid come from contributions, either from the employee or the employer. 70% comes from investment earnings. Moreover, benefits paid revolves in our economy to generate even more personal income and generating tax revenue for state and local governments. A recent study from the National Conference on Public Employee Retirement Systems (NCPERS) found that the \$616 million in WRS pension benefits paid in 2018 generated more than \$1.5 billion in additional personal income and \$382 million in additional state and local government tax revenue.

Investments

Markets have been extraordinarily volatile since year end, but our relatively defensive posture, global diversification and prudent adjustments have moderated our experience. The investment team is finding good assets at good prices. WRS has sufficient liquid assets such as treasury bonds to pay the pension for a number of years before we would be forced to sell other assets. As such, we can be a "liquidity provider" in troubled markets, which is a strong position to be in. Only time will tell what 2020 investment returns will ultimately be. For now, a review of 2019 shows that to be a very good year with a gain of 18.72%.

Our long-term goal is to achieve a 7.00% investment return, although we know there will be variability year to year. The last three years are instructive. 2017 had a 14.2% return, 2018 had a loss of -3.52% and 2019 had a gain of 18.72%. WRS is invested for the long run and our investment return goal reflects that. It's important not to get too excited about great years, nor be too pessimistic when markets reverse course.

It is also instructive to note the importance of professional management in both up and down markets. Our 2019 investment result of 18.72% exceeded our blended strategic benchmark of 15.84%. The WRS portfolio performance ranked in the 17th percentile for 2019 as measured against its peer group, as noted in the Investment Section of this report. Professional management is particularly essential in volatile markets like we have seen in the first half of the year.

Legislation

The 2020 legislative session was a busy one, but ultimately resulted in only one new law affecting WRS. Senate File 0092 passed and increased fire insurance tax support to the Volunteer Firefighter / EMT / Search & Rescue Pension Plan. Volunteer first responders are essential in Wyoming's predominately rural setting. The modest pension plan has provided an important incentive to recruit and retain volunteers since 1967. We are glad to see this bill passed.

A number of bills were introduced which did not become law. A proposal was made to increase contribution rates in the Law Enforcement Plan and Warden/Patrol plan. Both plans are on sound footing, but it is prudent to enact contribution increases earlier rather than later in order to ensure that the soundness remains. The Board will continue to monitor and make prudent recommendations to ensure the stable funded status for all plans. No other contribution changes were recommended. On a related note, the Public Employee Plan is still phasing in contribution rate increases from 17.62% currently to 18.12% on July 1, 2020 and 18.62% on July 1, 2021.

Board Chair's Letter

The Board continues to advocate for a Cost of Living Allowance (COLA). While COLA suspension was necessary in the wake of the financial crisis, the ongoing lack of a COLA imposes increasing hardship on many retirees. Unfortunately, COLA legislation failed to become law in the last two sessions. The legislature now faces an increasingly challenging economic environment in which to grant funding for a COLA.

Actuarial

In 2019 all eight plans realized lower than assumed investment returns. Although 2019 produced an excellent 18.72% return compared to our 7.00% assumption, we only recognize 1/5 of that in our actuarial rate of return, blending with the results of the four previous years. This is in accordance with our 5 year smoothing policy. The large Public Employee Plan (or the "Big Plan") actuarial funding ratio decreased to 73.16% from 74.15% last year. The accounting standards used in this report utilize market value for the investment returns. On a market value basis, the funded ratio for the Big Plan increased to 76.83%, from 69.17% last year. The funding ratios for most of the other open plans (Warden, Patrol & DCI Plan, Law Enforcement Plan, Judicial Plan, Guard Fire Plan, and Volunteer Firefighter, EMT and S&R) also declined slightly on an actuarial basis and increased on market value basis. Only Firefighter B Plan showed an actuarial and market value increase due to its relative strength of contribution rates compared to the plan's normal cost.

While the current actuarial position is important, actuarial direction is even more important. Our overall direction remains positive over the long run, helped by 2019's good investment returns.

The closed Paid Firefighter A Plan continues to present a significant challenge. This plan has not received a contribution since 1997 and continues to pay out benefits with an automatic COLA adjustment each year. Strong investment returns in 2019 allowed the plan not to see continued erosion of assets, but the fund is on track to run out of money within 7 years. The actuarial funding ratio declined to 41.35% from 46.09% year over year. A significant market decline would accelerate the decline. WRS continues to inform decision-making parties about this situation, to provide information and recommendations and is committed to being a resource in reaching a solution.

Oversight

Exceptional customer service remains a high priority at the Wyoming Retirement System. We continue to refine and improve, RAIN, our pension administration system. WRS continues to make investments in the RAIN system to enhance our ability to deliver top-tier customer service for years to come.

Our eleven-person Board operates exceptionally well. The Board prides itself on its professionalism, the non-partisan nature of its deliberations and informed decision making. The Board hosted its first online meeting in May, enabling more members across the state to see their pension system at work. Nearly every Board member has served in a leadership role and we strive to ensure that we have a broad representation of skills on the Board. The Board will be seeking to add more Board members with investment expertise in 2021. Succession planning continues to be a focus as rotations occur periodically and will occur in the coming year. Tom Chapman was elected Vice Chair last year, in addition to his role as Investment Committee Chair. Tom and I have been working closely this past year to ensure a smooth transition in board leadership. My tenure on the Board will conclude in 2021 after 12 years. Needless to say, a lot has changed since I joined the Board following the financial crisis. We have accomplished a lot. It has been a tremendous honor to serve the members, to work among such thoughtful and dedicated professionals. The Board is a dedicated, knowledgeable group of trustees, each of whom takes their fiduciary duty seriously. I have no doubt the future of WRS is bright.

Since 1953, we have endeavored to provide excellence in administration of the public retirement plans entrusted to us. We've provided retirement security to generations of public servants. Our members' dedication and commitment as public servants to the people of Wyoming is an important part of what makes Wyoming an extraordinary place to call home. We remain committed to ensuring that we can deliver on the retirement promises made to you as a part of your public service. This takes on more meaning as we confront the challenge of a global pandemic. We are mindful that as we strive to maintain service and keep our promises as the people of Wyoming rely deeply on public employees to keep theirs. This partnership is a vital part of the fabric of our local communities, our education systems and our state as a whole.

If you have any questions or suggestions regarding this report or any other aspect of WRS, please contact us at the Wyoming Retirement System, 6101 Yellowstone Road, Suite 500, Cheyenne Wyoming 82002 or call us at (307) 777-7691. Our website is retirement.wyo.gov.

Sincerely,



Laura Ladd, Chair
Board of Trustees

Wyoming Retirement System Board

The responsibility for the administration and operation of the Wyoming Retirement System, including all pension plans (except the Volunteer Firefighter & EMT Plan) and the Deferred Compensation (457) Plan is vested in the Wyoming Retirement Board. The Board is composed of eleven members, ten appointed by the Governor and the eleventh being the State Treasurer. The representation consists of the following:

- The State Treasurer
- A retired recipient of the Retirement System
- Two public employees
- Two public employees of the public school system, the University of Wyoming or Community College System
- Five qualified electors from Wyoming known for their public spirit and business or professional ability and at least two of whom have professional expertise in investments and finance



Laura Ladd (Board Chair)
Wilson, WY
At Large
First Appointed: 2009
Current Term Expires: 2021



Tom Chapman (Vice Chair)
Jackson, WY
At Large
First Appointed: 2010
Current Term Expires: 2021



Eric Nelson
Casper, WY
At Large
First Appointed: 2015
Current Term Expires: 2023



Mike Ceballos
Cheyenne, WY
At Large
First Appointed: 2017
Current Term Expires: 2023



Garth Shanklin
Cheyenne, WY
Higher Education
First Appointed: 2009
Current Term Expires: 2023



Vicci Colgan
Cheyenne, WY
Retiree
First Appointed: 2015
Current Term Expires: 2021



Tim Sullivan
Laramie, WY
Counties/Municipalities
First Appointed: 2013
Current Term Expires: 2025



Brian Foster
Cheyenne, WY
State Employees
First Appointed: 2017
Current Term Expires: 2023



Kay Watson
Shoshoni, WY
School Employees
First Appointed: 2017
Current Term Expires: 2025



Keith Hay
Rock Springs, WY
At Large
First Appointed: 2013
Current Term Expires: 2021



Curt Meier
(Board Member - State Treasurer)
Cheyenne/La Grange, WY
Elected Official

Volunteer Firefighter, EMT and Search & Rescue Pension Board

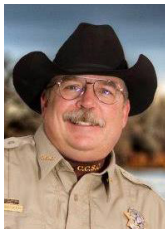
The Volunteer Firefighter, Emergency Medical Technicians (EMT) and Search & Rescue Pension Plan is controlled by a separate board and administered by the Executive Director of the Wyoming Retirement System. The Board consists of six volunteer firefighters, one volunteer EMT and one volunteer Search & Rescue volunteer, who shall be appointed by the Governor for staggered terms of three years. Each member is a volunteer firefighter, EMT or Search and Rescue volunteer with a minimum of five years as a member of a volunteer fire, EMT department or volunteer Search and Rescue service in the State of Wyoming.



Gene Diedtrich (Chairman)
Newcastle, WY
Represents
First Appointed: 1990
Current Term Expires: 2020



Lanny Applegate (Vice Chair)
Cheyenne, WY
First Appointed: 2000
Current Term Expires: 2021



Clint Becker
Douglas, WY
First Appointed: 2019
Current Term Expires: 2023



Tracy Brown
Lingle, WY
First Appointed: 2010
Current Term Expires: 2021



Kim Lee
Riverton, WY
First Appointed: 2000
Current Term Expires: 2024



Jerry Munger
Wheatland, WY
First Appointed: 2000
Current Term Expires: 2024

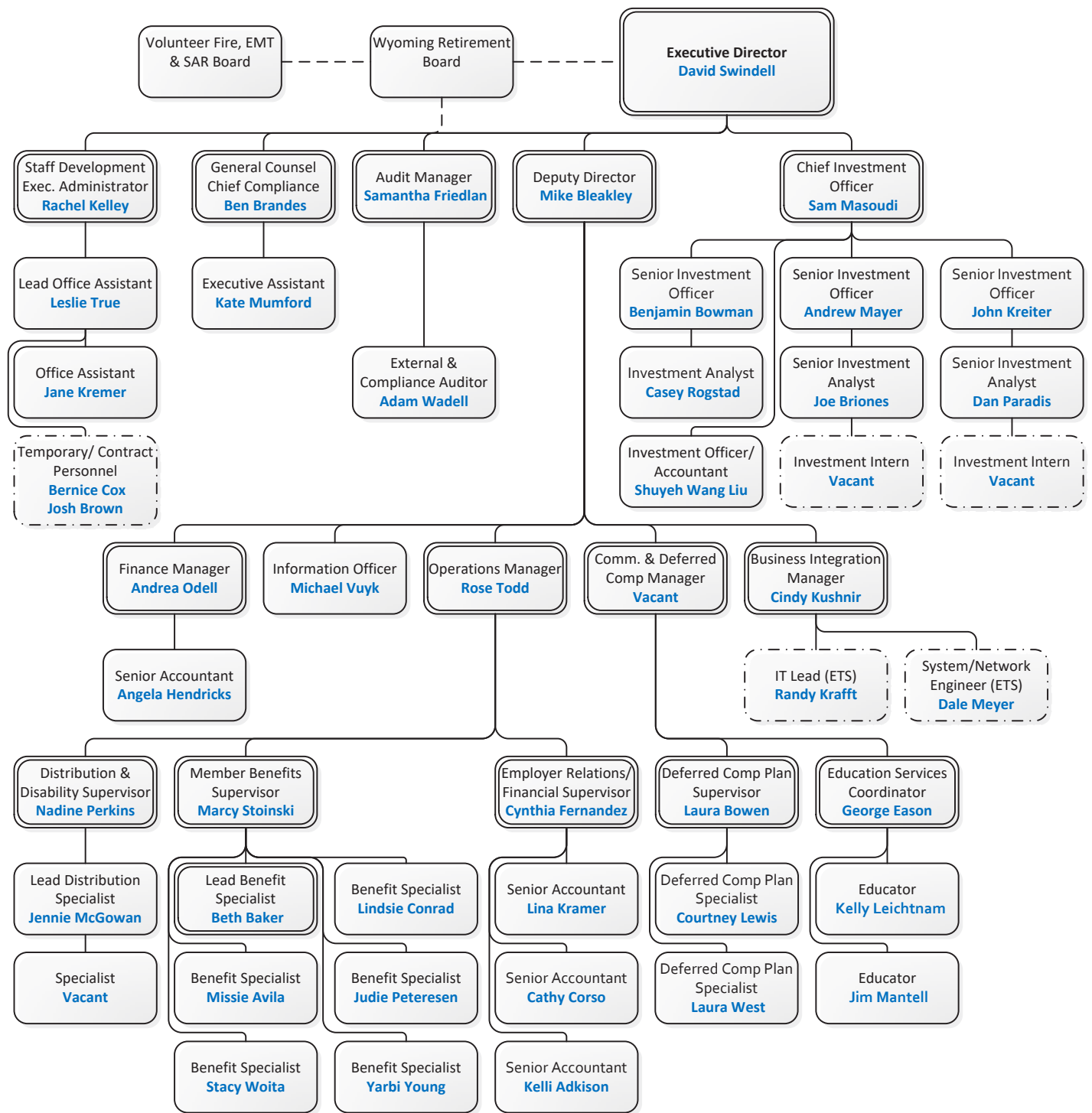


Eric Quinney
Evanston, WY
First Appointed: 2014
Current Term Expires: 2021



Alan Sessions
Afton, WY
First Appointed: 2005
Current Term Expires: 2020

Organizational Chart



Actuary:

Gabriel Roeder Smith & Company
Irving, TX

Auditor:

Eide Bailly, LLP
Boise, ID

Master Custodian:

The Northern Trust Company
Chicago, IL

Investment Consultant:

Meketa Investment Group
Boston, MA

Alternative Investment Consultant:

Albourne America
San Francisco, CA

Deferred Compensation Plan Investment and Performance Consultant:

RVK, Inc.
Portland, OR


Deferred Compensation Plan Record Keeper:

Empower Retirement
Greenwood Village, CO

Investment Managers

A complete listing of the investment professionals providing services for the Wyoming Retirement System is available in the Investment Section starting on page 85 and detailed by asset class. A schedule of Fees is located on page 102.

Professional Awards



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting


Presented to

Wyoming Retirement System

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

December 31, 2018

Christopher P. Morrell
Executive Director/CEO



Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2019

Presented to

Wyoming Retirement System

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)

Alan H. Winkle
Alan H. Winkle
Program Administrator

Plan Overview

The Wyoming Retirement System administers eight defined benefit pension plans and one 457 deferred compensation plan:

Pension Plan	Contributions	Vesting Service	Eligibility for Full Retirement	Multiplier	Highest Avg Salary
Public Employees Tier 1 (First contribution before 9/1/2012)	17.62% of salary Employee = 8.75% Employer = 8.87%	48 months	• Age 60 with 4 yrs service, or • Upon meeting requirements of the "Rule of 85" (age + years of service equal or exceed 85)	2.125% for first 15 yrs of service, plus 2.25% for remaining yrs	36 continuous months
Public Employees Tier 2 (First contribution on or after 9/1/2012)			• Age 65 with 4 yrs service, or • Upon meeting requirements of the "Rule of 85" (age + years of service equal or exceed 85)	2% for all yrs of service	60 continuous months
2020 Employee = 9.00% Employer = 9.12% Total Contribution 18.12% of salary 2021 Employee = 9.25% Employer = 9.37% Total Contribution 18.62% of salary The employer contribution for Park Rangers in Public Employee Plan Tier 1 or 2 is 1% greater than the amount shown.					
Warden, Patrol, and DCI	29.44% of salary Employee = 14.56% Employer = 14.88%	72 months	• Age 50 with 6 yrs service	2.5% for all yrs of service 75% ceiling	36 continuous months
Law Enforcement	17.20% of salary: Employee = 8.60% Employer = 8.60%	48 months	• Age 60 with 4 yrs service, or • Any age with 20 yrs service	2.5% for all yrs of service 75% ceiling	60 continuous months
Judicial	23.72% of salary: Employee = 9.22% Employer = 14.5%	48 months	• Age 60 with at least 20 yrs service, or • Age 65 with 4 yrs service, or • Age 70 with continuous service	4% for first 5 yrs of service + 3% for yrs 6-15 + 2% for yrs 16-20 + 1% for yrs 21 or more	36 continuous months
Paid Fire A	None	120 months	• 20th anniversary of date of employment	75% of Firemen 1st Class's salary for first 20 yrs + 1.5% of salary for 21+ yrs	n/a
Paid Fire B	22.745% of salary: Employee = 9.745% Employer = 13.00%	48 months	• Age 50 with 4 yrs service	2.8% for first 25 yrs of service. 70% ceiling	36 continuous months
2020 Employee = 10.245% Employer = 14.000% Total contribution 24.245% of salary 2021 Employee = 10.745% Employer = 15.000% Total Contribution 25.745% of salary 2022 Employee = 11.245% Employer = 16.000% Total Contribution 27.245% of salary					
Volunteer Firefighter, EMT & Search and Rescue	Vol. Firefighter and EMT \$15 per month Search and Rescue \$30 Per month	60 months	• Age 60 with 5 yrs service	\$16/mo per year of service for the first 10 years of service, plus \$19/mo per year of service over 10 yrs	n/a
July 1, 2020 Volunteer Fire and EMT \$18.75 = Search and Rescue \$37.50					
Guard Firefighter	23.77% of salary: Employee = 16.65% Employer = 7.12%	48 months	• Age 60 with 4 yrs service, or • Age 50 with 25 yrs service, or • At least age 55 & meeting requirements of "Rule of 75" (age + years of service equal or exceed 75)	2.5% for all yrs of service	36 continuous months

Note: The employer contribution for Park Rangers in Public Employee Plan Tier 1 or 2 is 1% greater than the amount shown. Further plan details are available in the Notes to the Financial Statements in this report. Plan details, a history of contribution rates and major changes to plans, and governing statutes, rules and policies that apply to WRS retirement plans are also available at retirement.wyo.gov.

- Wyoming Retirement Act: Wyo. Stat. § 9-3-401 - Wyo. Stat. § 9-3-432
 - Uniform Management of Public Employees Retirement Act: Wyo. Stat. § 9-3-433 - Wyo. Stat. § 9-3-454
 - Deferred Compensation Program: Wyo. Stat. § 9-3-501 Wyo. Stat. § 9-3-509
 - State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement: Wyo. Stat. § 9-3-601 - Wyo. Stat. § 9-3-620
 - Judicial Retirement: Wyo. Stat. § 9-3-701 - Wyo. Stat. § 9-3-713
 - Firemen Pensions and Death Benefits (Plan A): Wyo. Stat. § 15-5-201 - Wyo. Stat. § 15-5-210
 - Firemen's Pension Account Reform Act of 1981 (Plan B): Wyo. Stat. § 15-5-401 - Wyo. Stat. § 15-5-422
 - Volunteer Firefighter, Emergency Medical Technician, and Search & Rescue Pension Plan: Wyo. Stat. § 35-9-616 - 35-9-628
 - Policemen Pensions and Death Benefits: Wyo. Stat. § 15-5-301 - Wyo. Stat. § 15-5-314
 - Higher Education Retirement: Wyo. Stat. § 21-19-101 - Wyo. Stat. § 21-19-106
 - Public Meetings Act Wyo. Stat. § 16-4-401 - Wyo. Stat. § 16-4-408
 - Wyoming Retirement Board Rules
 - Volunteer Firefighter, Emergency Medical Technician and Search & Rescue Pension Account Board Rules
 - Wyoming Retirement System Board Policy Manual
 - Deferred Compensation 457(b) Plan Document
- 1 Effective July 1, 2020 Rates will increase to 18.12% Employee 9.00% - Employer 9.12%.
- 2 Effective July 1, 2020 Rates will increase to \$18.75 for Volunteer Fire and EMT per month .and \$37.50 for Search & Rescue per month.



Comprehensive Annual Financial Report 2019

FINANCIAL SECTION



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Independent Auditor's Report

To the Board of Trustees
Wyoming Retirement System
Cheyenne, Wyoming

Report on the Financial Statements

We have audited the accompanying financial statements of the Wyoming Retirement System (WRS), which comprise the statement of fiduciary net position as of December 31, 2019, and the related statement of changes in fiduciary net position, for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

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

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 and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of 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.

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Independent Auditor's Report

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective statement of the fiduciary net position of the Wyoming Retirement System, as of December 31, 2019, and the respective statement of changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matters

As discussed in Note 3, the financial statements include investments valued at \$2,977,485,291 (32.93% of net position) as of December 31, 2019, whose carrying values have been estimated by management in the absence of readily determinable fair values. Management's estimates are based on information provided by the fund managers or the general partners. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, schedule of changes in net pension liability and related ratios – multiyear, schedule of investment returns, and schedule of contributions multiyear (collectively the required supplementary information) on pages 19-32 and 66-77 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 WRS's basic financial statements as a whole. The introductory, other supplementary information, investment, actuarial and statistical sections are presented for purposes of additional analysis and are not a required part of the financial statements.

The other supplementary information accompanying the financial statements listed in the table of contents 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.

Independent Auditor's Report

The introductory, investment, actuarial and statistical 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 19, 2020, on our consideration of the WRS's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the WRS's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering WRS's internal control over financial reporting and compliance.

A handwritten signature in cursive script that reads "Eide Bailly LLP".

June 19, 2020
Boise, Idaho

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Management's Discussion and Analysis

Management's Discussion and Analysis

This section presents management's discussion and analysis of the Wyoming Retirement System's (WRS) financial status and performance for the year ended December 31, 2019.

WRS is responsible for administering retirement benefits for eight defined benefit pension plans and one defined contribution plan. The eight defined benefit plans are the Public Employee Pension Plan, State Patrol, Game and Fish Warden and Criminal Investigator Pension Plan, Volunteer Firefighter, EMT, and Search & Rescue Pension Plan, Paid Firemen's Pension Plan A, Paid Firemen's Pension Plan B, Judicial Pension Plan, Law Enforcement Pension Plan and the Air Guard Firefighters Pension Plan. The defined contribution plan is also known as the Wyoming Deferred Compensation Program (457 Plan).

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the WRS financial reporting, which is comprised of the following components:

1. Basic Financial Statements, including Notes to the Basic Financial Statements
2. Required Supplementary Information
3. Other Supplementary Information

Collectively, this information presents the combined net position held in trust for pension benefits for each of the funds administered by WRS and the 457 Plan sponsored by WRS as of December 31, 2019. This financial information also summarizes the combined changes in net position held in trust for pension and defined contribution benefits for the year then ended. The information in each of these components is briefly summarized as follows:

1. **Basic Financial Statements.** For the calendar year ended December 31, 2019, basic financial statements are presented for the retirement funds administered and sponsored by WRS. Fiduciary funds are used to account for resources held for the benefit of parties outside WRS. These fiduciary funds are comprised of eight defined benefit systems and one 457 Plan.
 - The Statement of Fiduciary Net Position – Pension (and Other Employee Benefit) Trust Funds is presented for the pension and defined contribution funds at December 31, 2019. This financial statement reflects the resources available to pay benefits to members, including retirees and beneficiaries.
 - The Statement of Changes in Fiduciary Net Position – Pension (and Other Employee Benefit) Trust Funds is presented for the pension and the Defined Contribution Trust Funds for the year ended December 31, 2019. This financial statement reflects the changes in the resources available to pay benefits to members, including retirees and beneficiaries for the calendar year 2019.
 - Notes to the Basic Financial Statements. The Notes to the Basic Financial Statements provide additional information that is essential to a full understanding of the data provided in the basic financial statements.
2. **Required Supplementary Information.** The required supplementary information consists of schedules concerning the net pension liability and changes therein, schedule of investment returns and actuarially determined contribution requirements.
3. **Other Supplementary Information.** This section includes the Schedule of Administrative Expenses and Investment Advisory Fees for all of the retirement plans, and for the 457 Plan, the Combining Schedule of Participant and Administrative Net Position, and the Combining Schedule of Changes in Participant and Administrative Net Position.

Management's Discussion and Analysis

Financial Analysis of Defined Benefit Plans

Investments of the WRS Defined Benefit Plans are combined in a commingled investment pool. Each plan owns an equity position in the pool and receives proportionate investment income from the pool in accordance with respective ownership percentages. Each plan's allocated share of each type of investment in the pool is shown in the Statement of Fiduciary Net Position of each respective plan. Investment gains or losses are reported in the Statement of Changes in Fiduciary Net Position of each retirement plan. The rate of return on investment is therefore approximately the same for each of the plans.

System's Total Investments

At December 31, 2019, WRS held total investments of \$9.0 billion. The combined investment portfolio experienced a return of 18.72% (net of fees) compared with the WRS Benchmark of 15.82%. The benchmark represents what would have occurred if WRS had invested in the following asset classes with the corresponding weights derived from the Board's approved strategic asset allocation:

Investment results over time compared with WRS benchmarks are presented in the Investment Section of the CAFR. The figures listed below are the net exposures in each asset class after accounting for the notional exposure differences through the Russell Overlay account. Physical exposures could be quite different depending on the notional exposure held through the overlay account.

Tactical Cash

On December 31, 2019, WRS held \$199 million in Cash, which was an increase from the \$140 million in Tactical Cash at the end of December 31, 2018. The change in cash is a function of timing decisions made by WRS staff at year-end and is utilized within the Overlay Program to manage portfolio level asset class exposures.

Equities

On December 31, 2019, WRS held \$4.2 billion in total Marketable Equity, consisting of Domestic, International Developed, and Emerging Market equity securities, which was an increase from the \$3.9 billion held at year-end 2018. Total Marketable Equity had a return of 26.49% for the year 2019 compared to 25.80% for the benchmark.

As of December 31, 2019, the Marketable Equity blended benchmarks consists of 48.2% Russell 3000 Total Return Index, 32.3 % MSCI EAFE IMI, Net Dividend and 19.5% MSCI EM IMI.

Private Equity was moved from Private Market to the Equity category based on the new guideline adopted by the Board effective May 16, 2019. On December 31, 2019, WRS held \$0.45 billion in Private Equity. Private Equity return for 2019 was 14.82% compared to the benchmark return of 7.65%. As of December 31, 2019, the Private Equity benchmark is Cambridge Associates Global All Private Equity (quarter lag).

Fixed Income Securities

On December 31, 2019, WRS held \$1.7 billion in Marketable Fixed Income securities, which was higher than the \$1.3 billion in Fixed Income securities held at year-end 2018. Total Marketable Fixed Income includes securities such as U.S. Treasury Bonds and Notes, Mortgage-Backed Securities, and Corporate Bonds. In total, Marketable Fixed Income had a return of 8.64% for the year 2019 compared to the customized benchmark's return of 7.93%. As of December 31, 2019, the blended benchmark for Marketable Fixed Income consists of 27.8% Barclays Aggregate, 50% Barclays Government, and 22.2% is a 50/50 blend of CS Leveraged Loan index and Bloomberg Barclays High Yield index.

The Private Debt was moved from the asset class category of Private Markets to the Fixed Income category based on the new guideline adopted by the Board effective May 16, 2019. On December 31, 2019, WRS held \$188 million in Private Debt. The 2019 return for Private Debt was 3.8% compared to the benchmark return of 5.5%. The Private Debt benchmark is Cambridge Associates Vintage Year Blend (quarter lag).

Management's Discussion and Analysis

Marketable Alternatives

On December 31, 2019, WRS held \$1.5 billion in managers within the Marketable Alternatives asset class, which was higher than the \$1.4 billion in Marketable Alternatives held at year-end 2018. This asset class returned 18.81% for the year, compared to a return of 8.33% for the benchmark, which consists of the HFRI Fund of Funds Composite Index.

Private Real Assets

On December 31, 2019, WRS held \$834 million in managers considered to employ Private Real Asset strategies, an increase from \$675 million on December 31, 2018. The Private Debt and Private Equity were moved from Private Market to the Fixed Income and Equity class, respectively, based on the new guideline adopted by the Board effective May 16, 2019. Hence, Private Real Assets include such categories as real estate, infrastructure, and natural resources.

In total, Private Real Asset class returned 4.98% for the year, compared to a vintage year blended benchmark return of 4.18%.

Investment allocation at Fair Value, as of December 31, 2018 and December 31, 2019:

Asset Allocation By Sector	2018		2019	
	Physical Securities	With Overlay	Physical Securities	With Overlay
Tactical Cash	7.40%	1.80%	3.13%	2.20%
Equities	42.10%	48.40%	46.84%	46.37%
Fixed Income	17.40%	16.80%	17.00%	18.40%
Marketable Alternatives (formerly "GTAA")	17.80%	17.80%	16.81%	16.81%
Private Markets (formerly "Alternatives")	15.20%	15.20%	16.22%	16.22%

Note: Positions with overlay are included to provide a more realistic disclosure of exposures

Security Lending

WRS earns additional investment income by lending investment securities to brokers. Northern Trust, WRS's custodial bank, does this on a pooled basis. The brokers provide collateral to the custodial bank and generally use the borrowed securities to cover short sales and failed trades. The custodial bank invests the cash collateral received from the brokers in order to earn interest. On December 31, 2019, the plans had \$407.5 million on loan secured by \$418.6 million in collateral. In addition, the securities collateralized by cash, securities valued at \$109.1 million were on loan collateralized by non-cash collateral in the amount of \$112.0 million. For the year 2019, net securities lending income for all plans totaled \$1.3 million as compared to net securities lending income for all plans totaled \$1.9 million for the year ending 2018.

Actuarial Valuation and Funding Progress

An actuarial valuation of each WRS defined benefit plan is performed annually. The funded status of each of the Plans is shown in the Schedules of Funding Progress, which is located in the Actuarial section of this report. It is important to note that in 2013, and also in 2017, the Board changed the assumptions used by the actuary to value the plans. The new assumptions are reflected in these valuation results. In general, the new assumptions reflect increasing life expectancy and lower long-term investment returns. Funding ratios according to GASB 67 standards range from a high of 102.62% to a low of 27.32%. The Schedules of Funding Progress show the January 1, 2020 funding ratios compared with the ratios at January 1 of the prior 9 years. The section also shows the amount by which actuarial assets fell short of actuarial liabilities. At January 1, 2020, the actuarial value of liabilities exceeded the fair value of assets by \$3.1 billion.

For all but Paid Firemen's Pension Plan A, beginning July 1, 2012 all future COLA's must be granted by the State Legislators. In addition, the board cannot recommend the COLA unless the plan is considered actuarially sound and the unfunded liability must not drop below 100% after the award of the COLA.

Management's Discussion and Analysis - Analysis of Individual Plans

Public Employee Pension Plan

The Public Employee Pension Plan provides retirement benefits to covered State of Wyoming, local government and public education employees. Employee and employer contributions and earnings on investments fund benefits of the Plan.

The Plan's net position held in trust for benefits on December 31, 2019 totaled \$7.8 billion, an increase of \$959.2 million from 2018. Additions to the Plan net position held in trust for benefits include employer and employee contributions and investment gains/losses. For the calendar year 2019, employee and employer contributions totaled \$309.0 million, an increase from 2018 of approximately \$16.9 million. Contributions to the Plan increased on July 1, 2019 as the Plan statutorily required 17.62% of the participant's salary to be contributed to the Plan. Through June 30, 2019, the Plan statutorily required 17.12% of the participant's salary to be contributed to the Plan. The Plan recognized a net investment gain of \$1,251.5 million for the year 2019 compared with a net investment loss of \$252.6 million a year earlier. This is due to the equity market.

Deductions from the Plan net position held in trust for benefits resulted from retirement and beneficiary benefits, administrative expenses and refunds to members terminating service. For 2019, benefits totaled \$579.2 million, an increase of \$31.3 million from a year earlier. The increase in benefits is due to the number of members retiring was greater than the number of those who became deceased. For 2019, the costs of administering the Plan's benefits totaled \$6.5 million, a decrease from \$7.0 million a year earlier.

Refunds are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned. Refunds to members terminating service totaled \$21.3 million in 2019, an increase from \$18.1 million a year ago.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability increased from 69.17% on January 1, 2019 to 76.83% on January 1, 2020. The net pension liability as a percentage of covered employee payroll decreased from 174.88% to 135.19% as of January 1, 2019 and 2020, respectively. The net pension liability was \$2.35 billion as of January 1, 2020 compared to \$3.05 billion as of January 1, 2019. This is a decrease from the prior year.

Public Employee Pension Plan		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$498,741	\$2,096,212
Investments: Fair Value	7,528,677	6,360,466
Securities Lending Collateral	351,383	431,367
Capital Assets/Net Depr.	2,905	3,214
Total Assets	8,381,706	8,891,259
Liabilities:		
Securities Lending Payable	351,383	431,367
Benefits & Refunds Payable	619	382
Securities Purchased	37,925	107,338
Other Payables	201,220	1,520,803
Total Liabilities	591,147	2,059,890
Total Net Position	\$7,790,559	\$6,831,369

Public Employee Pension Plan		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Employee Contributions	\$153,582	\$146,255
Employer Contributions	155,457	145,912
Investment Income	1,251,519	(252,571)
Other Income	5,956	6,596
Total Additions	1,566,514	46,192
Deductions:		
Benefits	579,179	547,913
Refunds	21,308	18,114
Admin. Expenses	6,527	7,034
Depreciation Expense	310	288
Total Deductions	607,324	573,349
Change in Net Position	959,190	(527,157)
Total Beginning Net Position	6,831,369	7,358,526
Total Ending Net Position	\$7,790,559	\$6,831,369

Management's Discussion and Analysis - Analysis of Individual Plans

State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan

The Wyoming State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan provides retirement benefits to covered sworn officers of the Wyoming State Highway Patrol, law enforcement officers employed by the Wyoming State Game and Fish Department and sworn peace officers of the Division of Criminal Investigation. Employee and employer contributions and earnings on investments fund benefits of the Plan.

The Plan's net position held in trust for benefits at December 31, 2019 totaled \$154.3 million, an increase of \$21 million from 2018. Additions to the Plan net position held in trust for benefits include employer and employee contributions and investment gains/losses. For the calendar year 2019, employee and employer contributions totaled \$7.2 million, an increase from 2018 of \$258,359. The Plan recognized a net investment gain of \$24.5 million for the year 2019 compared with net investment loss of \$4.9 million a year earlier. This is due to the equity market.

Deductions from the Plan net position held in trust for benefits resulted primarily from retirement and beneficiary benefits, administrative expenses and refunds to members terminating service. For 2019, benefits totaled \$10.8 million, an increase from \$10.2 million. For 2019, the costs of administering the Plan's benefits totaled \$138,770 compared to \$139,377 a year ago.

Refunds are the results of employees leaving public service and requesting the money they contributed plus interest into the system to be returned. Refunds to members terminating service totaled \$288,795 in 2019, a decrease from \$351,230 a year ago.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability increased from 66.53% on January 1, 2019 to 80.01% on January 1, 2020. The net pension liability as a percentage of covered employee payroll decreased from 290.66% to 166.76% as of January 1, 2019 and 2020, respectively. The net pension liability was \$38.6 million of January 1, 2020 compared to \$67.0 million as of January 1, 2019. This is a decrease from the prior year.

State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$10,423	\$41,099
Investments: Fair Value	148,580	123,817
Securities Lending Collateral	6,935	8,397
Capital Assets/Net Depr.	53	59
Total Assets	165,991	173,372
Liabilities:		
Securities Lending Payable	6,935	8,397
Securities Purchased	749	2,090
Other Payables	4,013	29,616
Total Liabilities	11,697	40,103
Total Net Position	\$154,294	\$133,269

State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Employee Contributions	\$3,527	\$3,416
Employer Contributions	3,639	3,492
Investment Income	24,467	(4,908)
Other Income	669	418
Total Additions	32,302	2,418
Deductions:		
Benefits	10,844	10,261
Refunds	289	351
Admin. Expenses	138	139
Depreciation Expense	6	6
Total Deductions	11,277	10,757
Change in Net Position	21,025	(8,339)
Total Beginning Net Position	133,269	141,608
Total Ending Net Position	\$154,294	\$133,269

Management's Discussion and Analysis - Analysis of Individual Plans

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan

On July 1, 2015, the Volunteer Firefighter's and Emergency Medical Technicians (EMTs) Pension Plans were consolidated into the Volunteer Firefighter & EMT Pension Plan which provides retirement benefits to volunteer firefighters and emergency medical technicians who elect to participate in the Plan. On July 1, 2019, Search and Rescue Volunteers were added to the plan. Benefits of the Plan are funded by employee contributions (\$15.00 per month for firefighters and EMTs and \$30.00 per month for search and rescuers), the fire insurance tax collected, and earnings on investments.

The Plan net position held in trust for benefits at December 31, 2019 totaled \$86.9 million, an increase of \$10.7 million from 2018. For the calendar year 2019, employee contributions totaled \$431,659, an increase from 2018 of \$9,888. The Plan recognized a net investment gain of \$13.7 million for the year 2019 compared with net investment loss of \$2.8 million a year earlier.

The tax collected on fire insurance premiums totaled \$3.1 million in 2019 compared to \$3.0 million received in 2018. Deductions from the Plan net position held in trust for benefits resulted primarily from retirement and beneficiary benefits, administrative expenses and refunds to employees terminating service. For 2019, benefits totaled \$6.5 million, an increase from \$6.1 million a year earlier. The increase in benefits results from more retirees receiving benefits than in 2018. For 2019, the cost of administering the Plan's benefits totaled \$89,451 compared to \$91,195 a year earlier.

Refunds are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned. Refunds to members terminating service totaled \$40,182 in 2019, a decrease from \$44,163 a year ago.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability increased from 68.18% on January 1, 2019 to 75.64% on January 1, 2020. The net pension liability was \$27.9 million as of January 1, 2020 compared to \$35.6 million as of January 1, 2019. This is a decrease from the prior year.

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$6,940	\$24,440
Investments: Fair Value	82,622	69,640
Securities Lending Collateral	3,856	4,723
Capital Assets/Net Depr.	32	36
Total Assets	93,450	98,839
Liabilities:		
Securities Lending Payable	3,856	4,723
Benefits & Refunds Payable	-	-
Securities Purchased	416	1,175
Other Payables	2,264	16,685
Total Liabilities	6,536	22,583
Total Net Position	\$86,914	\$76,256

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Employee Contributions	\$432	\$422
Investment Income	13,701	(2,783)
Other Income	3,124	2,973
Total Additions	17,257	612
Deductions:		
Benefits	6,467	6,102
Refunds	40	44
Admin. Expenses	89	91
Depreciation Expense	3	3
Total Deductions	6,599	6,240
Change in Net Position	10,658	(5,628)
Total Beginning Net Position	76,256	81,884
Total Ending Net Position	\$86,914	\$76,256

Management's Discussion and Analysis - Analysis of Individual Plans

Paid Firemen's Pension Plan A

The Paid Firemen's Pension Plan A provides retirement benefits to paid firefighters who were employed prior to July 1, 1981. The plan is funded solely by earnings on investments.

The Plan net position held in trust for benefits on December 31, 2019 totaled \$98.0 million, an increase of \$738,453 from 2018. Additions to the Plan net position held in trust for benefits include investment income. This Plan is a closed plan and the Board suspended contributions in April 1997. The Plan recognized a net investment gain of \$16.9 million for the year 2019 compared with a net investment loss of \$3.6 million a year earlier. This is due to the equity market.

Deductions from the Plan net position held in trust for benefits resulted primarily from retirement and beneficiary benefits and administrative expenses. For 2019, benefits totaled \$16.1 million, an increase from \$305,358 a year earlier. The benefits continue to increase due to a 3% COLA in the current year. For 2019, the costs of administering the Plan's benefits totaled \$87,238 compared to \$98,669 a year ago.

Refunds are the result of employees leaving public service and requesting the money they contributed into the system to be returned. There were no refunds paid to employees terminating service for 2019 or 2018.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability decreased from 29.99% on January 1, 2019 to 27.32% on January 1, 2020. The net pension liability as a percentage of covered employee payroll increased from 169,207.64% to 397,091.47% as of January 1, 2019 and 2020, respectively. The net pension liability was \$260.6 million as of January 1, 2020 compared to \$227.0 million as of January 1, 2019. This is an increase from the prior year.

Paid Firemen's Pension Plan A		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$6,384	\$30,017
Investments: Fair Value	94,529	90,228
Securities Lending Collateral	4,412	6,119
Capital Assets/Net Depr.	76	81
Total Assets	105,401	126,445
Liabilities:		
Securities Lending Payable	4,412	6,119
Securities Purchased	476	1,523
Other Payables	2,554	21,582
Total Liabilities	7,442	29,224
Total Net Position	\$97,959	\$97,221

Paid Firemen's Pension Plan A		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Investment Income	\$16,923	\$(3,580)
Total Additions	16,923	(3,580)
Deductions:		
Benefits	16,093	15,788
Admin. Expenses	87	99
Depreciation Expense	5	4
Total Deductions	16,185	15,891
Change in Net Position	738	(19,471)
Total Beginning Net Position	97,221	116,692
Total Ending Net Position	\$97,959	\$97,221

Management's Discussion and Analysis - Analysis of Individual Plans

Paid Firemen's Pension Plan B

The Paid Firemen's Pension Plan B provides retirement benefits to paid firefighters who were employed on or after July 1, 1981. Benefits of the Plan are funded by employee and employer contributions and investments income.

The Plan net position held in trust for benefits on December 31, 2019 totaled \$167.6 million, an increase of \$26.3 million from 2018. Additions to the Plan net position held in trust for benefits include employer and employee contributions and investment income. For the calendar year 2019, member and employer contributions totaled \$6.2 million, an increase from 2018 of \$281,431. The Plan recognized a net investment gain of \$26.1 million for the year 2019 compared with a net investment loss of \$5.2 million a year earlier. This is due to the equity market.

Deductions from the Plan net position held in trust for benefits resulted primarily from retirement and beneficiary benefits, administrative expenses and refunds to employees terminating service. For 2019, benefits totaled \$5.9 million, an increase from \$5.5 million a year earlier. For 2019, the costs of administering the Plan's benefits totaled \$138,634 compared to \$140,922 a year ago.

Refunds are the result of employees leaving public service and requesting the money they contributed into the system to be returned. Refunds to members terminating service totaled \$35,091 in 2019, a decrease from \$64,091 a year ago.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability increased from 87.07% on January 1, 2019 to 95.93% on January 1, 2020. The net pension liability as a percentage of covered employee payroll decreased from 78.26% to 25.36% as of January 1, 2019 and 2020, respectively. The net pension liability was \$7.1 million as of January 1, 2020 compared to \$21.0 million as of January 1, 2019. This is a decrease from the prior year.

Paid Firemen's Pension Plan B		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$12,166	\$44,177
Investments: Fair Value	160,564	130,550
Securities Lending Collateral	7,494	8,854
Capital Assets/Net Depr.	43	49
Total Assets	180,267	183,630
Liabilities:		
Securities Lending Payable	7,494	8,854
Benefits & Refunds Payable	-	33
Securities Purchased	809	2,203
Other Payables	4,337	31,226
Total Liabilities	12,640	42,316
Total Net Position	\$167,627	\$141,314

Paid Firemen's Pension Plan B		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Employee Contributions	\$2,707	\$2,585
Employer Contributions	3,516	3,356
Investment Income	26,111	(5,198)
Other Income	80	237
Total Additions	32,414	980
Deductions:		
Benefits	5,921	5,474
Refunds	35	64
Admin. Expenses	139	141
Depreciation Expense	6	5
Total Deductions	6,101	5,684
Change in Net Position	26,313	(4,704)
Total Beginning Net Position	141,314	146,018
Total Ending Net Position	\$167,627	\$141,314

Management's Discussion and Analysis - Analysis of Individual Plans

Judicial Pension Plan

The Wyoming Judicial Pension Plan provides retirement benefits to any Justice of the Supreme Court, District Judge or County Court Judge appointed to any of these offices on or after July 1, 1999, with no prior service as a Justice of the Supreme Court or District Judge at the time of the appointment. Benefits of the plan are funded by employee and employer contributions and earnings on investments.

The Plan net position held in trust for benefits on December 31, 2019 totaled \$33.9 million, an increase of almost \$5.6 million from 2018. Additions to the Plan net position held in trust for benefits include employer and employee contributions and investment income. For the calendar year 2019, employee and employer contributions totaled \$1.7 million, an increase from 2018 of \$163,663. The Plan recognized a net investment gain of \$5.2 million for the year ending 2019 compared to an investment loss of \$1.0 million a year earlier. This is due to the equity market.

Deductions from the Plan net position held in trust for benefits resulted primarily from retirement and beneficiary benefits, administrative expenses and refunds to employees terminating service. For 2019, benefits totaled \$1,7 million compared to \$1,5 million in 2018. For 2019, the costs of administering the Plan's benefits totaled \$27,764 compared to \$28,405 a year ago.

Refunds are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned. There were no refunds to members terminating service in 2019 or 2018.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability increased from 90.92% on January 1, 2019 to 102.62% on January 1, 2020. The net pension liability as a percentage of covered employee payroll decreased from 43.18% to (13.12%) as of January 1, 2019 and 2020, respectively. The net pension liability was (\$865,959) as of January 1, 2020 compared to \$2.8 million as of January 1, 2019. This is a decrease from the prior year.

Judicial Pension Plan		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$2,885	\$8,875
Investments: Fair Value	32,047	26,165
Securities Lending Collateral	1,496	1,775
Capital Assets/Net Depr.	7	8
Total Assets	36,435	36,823
Liabilities:		
Securities Lending Payable	1,496	1,775
Securities Purchased	161	442
Other Payables	866	6,258
Total Liabilities	2,523	8,475
Total Net Position	\$33,912	\$28,348

Judicial Pension Plan		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Employee Contributions	\$675	\$611
Employer Contributions	1,060	960
Investment Income	5,224	(1,039)
Other	354	-
Total Additions	7,313	532
Deductions:		
Benefits	1,720	1,455
Admin. Expenses	28	28
Depreciation Expense	1	1
Total Deductions	1,749	1,484
Change in Net Position	5,564	(952)
Total Beginning Net Position	28,348	29,300
Total Ending Net Position	\$33,912	\$28,348

Management's Discussion and Analysis - Analysis of Individual Plans

Law Enforcement Pension Plan

The Wyoming Law Enforcement Pension Plan became effective July 1, 2002 and provides retirement benefits to any member who is a county sheriff, deputy county sheriff, and municipal police officer, duly authorized investigators of the Wyoming livestock board, Wyoming correctional officer, Wyoming law enforcement academy instructor, UW campus police officer, detention officer or dispatcher of law enforcement agencies. Benefits of the Plan are funded by employee and employer contributions and investment income.

The Plan net position held in trust for benefits on December 31, 2019 totaled \$700.9 million, an increase of \$101.8 million from 2018. Additions to the Plan net position held in trust for benefits include employer and employee contributions and investment income. For the calendar year 2019, employee and employer contributions totaled \$27.7 million, an increase from 2018 of \$783,231. The Plan recognized a net investment gain of \$110.8 million for the year 2019 compared to a net investment loss of \$22.2 million in 2018. This is due to the equity market.

Deductions from the Plan net position held in trust for benefits resulted primarily from retirement and beneficiary benefits, administrative expenses and refunds to employees terminating service. For 2019, benefits totaled \$34.9 million, an increase from \$32.0 million a year earlier. For 2019, the costs of administering the Plan's benefits totaled \$596,769 compared to \$639,428 during 2018.

Refunds are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned. Refunds to members terminating service totaled \$2.4 million in 2019, a decrease from \$4.0 million during 2018.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability increased from 71.22% on January 1, 2019 to 89.05% on January 1, 2020. The net pension liability as a percentage of covered employee payroll decreased from 159.36% to 55.31% as of January 1, 2019 and 2020, respectively. The net pension liability was \$86.2 million as of January 1, 2020 compared to \$242.1 million as of January 1, 2019. This is a decrease from the prior year.

Law Enforcement Pension Plan		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$45,648	\$184,716
Investments: Fair Value	676,907	556,748
Securities Lending Collateral	31,593	37,759
Capital Assets/Net Depr.	188	215
Total Assets	754,336	779,438
Liabilities:		
Securities Lending Payable	31,593	37,759
Benefits & Refunds Payable	158	59
Securities Purchased	3,410	9,396
Other Payables	18,288	133,172
Total Liabilities	53,449	180,386
Total Net Position	\$700,887	\$599,052

Law Enforcement Pension Plan		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Employee Contributions	\$13,881	\$13,482
Employer Contributions	13,856	13,471
Investment Income	110,793	(22,169)
Other Income	1,206	674
Total Additions	139,736	5,458
Deductions:		
Benefits	34,851	32,014
Refunds	2,426	3,971
Admin. Expenses	597	639
Depreciation Expense	27	24
Total Deductions	37,901	36,648
Change in Net Position	101,835	(31,190)
Total Beginning Net Position	599,052	630,242
Total Ending Net Position	\$700,887	\$599,052

Management's Discussion and Analysis - Analysis of Individual Plans

Air Guard Firefighters Pension Plan

The Air Guard Firefighters Pension Plan provides retirement benefits to covered Air Guard Firefighters. Benefits are funded by employee and employer contributions and earnings on investments. The Air Guard Firefighters Pension Plan was separated from the Public Employee Pension Plan on January 1, 2011.

The Plans net position held in trust for benefit on December 31, 2019 was \$8.5 million, an increase of \$1.3 million from 2018. Additions to the Plan net position held in trust for benefits include employer and employee contributions and investment income/losses. For the calendar year 2019, employee and employer contributions totaled \$528,083, a decrease from 2018 of \$532,745. The Plan recognized a net investment gain of \$1.3 million for the year 2019 compared to a net investment loss of \$253,859 in 2018.

Deductions from the Plan's net position held in trust for benefits included retirement, beneficiary benefits and administrative expenses. For 2019, benefits totaled \$442,888, an increase from \$385,232 for the prior year. For 2019, the costs of administering the Plan's benefits totaled \$6,972 compared to \$7,141 during 2018.

Refunds are the result of employees leaving public service and requesting the money they contributed plus interest into the system to be returned. The refunds paid to members terminating service for 2019 was \$69,971 compared to \$213,647 a year earlier.

An actuarial valuation of the Plan's assets and net pension liability is performed annually. At the date of the most recent actuarial valuation, January 1, 2020, the fiduciary net position as a percentage of total pension liability increased from 79.98% on January 1, 2019 to 90.19% on January 1, 2020. The net pension liability as a percentage of covered employee payroll decreased from 83.73% to 39.54% as of January 1, 2019 and 2020, respectively. The net pension liability was \$925,842 as of January 1, 2020 compared to \$1.8 million as of January 1, 2019. This is a decrease from the prior year.

Air Guard Firefighter Pension Plan		
Net Position		
December 31, (Dollars in Thousands)		
Assets:	2019	2018
Cash & Receivables	\$840	\$2,289
Investments: Fair Value	7,927	6,609
Securities Lending Collateral	370	448
Capital Assets/Net Depr.	2	2
Total Assets	9,139	9,348
Liabilities:		
Securities Lending Payable	370	448
Benefits & Refunds Payable	-	-
Securities Purchased	40	112
Other Payables	214	1,581
Total Liabilities	624	2,141
Total Net Position	\$8,515	\$7,207

Air Guard Firefighter Pension Plan		
Change in Net Position		
December 31, (Dollars in Thousands)		
Additions:	2019	2018
Employee Contributions	\$370	\$373
Employer Contributions	158	160
Investment Income	1,300	(254)
Other Income	-	72
Total Additions	1,828	351
Deductions:		
Benefits	443	385
Refunds	70	214
Admin. Expenses	7	7
Depreciation Expense	-	-
Total Deductions	520	606
Change in Net Position	1,308	(255)
Total Beginning Net Position	7,207	7,462
Total Ending Net Position	\$8,515	\$7,207

Management's Discussion and Analysis - Analysis of Total Defined Benefit Pension Plans

Total Defined Benefit Pension Plans

Below is the listing of the Total Defined Benefit Pension Plans reflecting the 2019 and 2018 Net Position and Changes in Net Position with the percentage of change.

Total Defined Benefit Pension Plans				
Net Position				
December 31, (Dollars in Thousands)				
Assets:	2019	2018	Change	% Change
Cash & Receivables	\$584,027	\$2,431,823	\$(1,847,796)	-76.0%
Investments: Fair Value	8,731,854	7,364,223	1,367,631	18.6%
Securities Lending Collateral	407,538	499,442	(91,904)	-18.4%
Capital Assets/Net Depr.	3,306	3,665	(359)	-9.8%
Total Assets	9,726,725	10,299,153	(572,428)	-5.6%
Liabilities:				
Securities Lending Payable	407,538	499,442	\$(91,904)	-18.4%
Benefits & Refunds Payable	777	475	302	63.6%
Securities Purchased	43,986	124,277	(80,291)	-64.6%
Other Payables	233,757	1,760,924	(1,527,167)	-86.7%
Total Liabilities	686,058	2,385,118	(1,699,060)	-71.2%
Total Net Position	\$9,040,667	\$7,914,035	\$1,126,632	14.2%

Total Defined Benefit Pension Plans				
Change in Net Position				
December 31, (Dollars in Thousands)				
Additions:	2019	2018	Change	% Change
Employee Contributions	\$175,174	\$167,145	\$8,029	4.8%
Employer Contributions	177,687	167,351	10,336	6.2%
Investment Income	1,450,039	(292,502)	1,742,541	595.7%
Other Income	11,390	10,969	421	3.8%
Total Additions	1,814,290	52,963	1,761,327	3325.6%
Deductions:				
Benefits	655,519	619,392	36,127	5.8%
Refunds	24,168	22,758	1,410	6.2%
Admin. Expenses	7,613	8,179	(566)	-6.9%
Depreciation Expense	358	333	25	7.5%
Total Deductions	687,658	650,662	36,996	5.7%
Change in Net Position	1,126,632	(597,699)	1,724,331	288.5%
Total Beginning Net Position	7,914,035	8,511,734	(597,699)	-7.0%
Total Ending Net Position	\$9,040,667	\$7,914,035	\$1,126,632	14.2%

Management's Discussion and Analysis - Subsequent Event

Disclosure of Subsequent Events:

Legislative Changes

Subsequent to the December 31, 2019 measurement date for this financial report, the Wyoming Legislature convened for their scheduled 2020 session. During this session the Legislature passed one bill which will modestly impact the Wyoming Retirement System (WRS).

Senate File 0092 (Senate Enrolled Act 43) provides for increases to contributions to the Volunteer Firefighter, EMT and Search and Rescue Pension Account by transferring an additional 20% of the fire insurance premium tax revenue from the General Fund. The bill increases the percentage of tax from 80% to 100%. In addition, the bill increases member contribution rates from the current \$15.00 per month for firefighters and EMT to \$18.75 per month and from \$30.00 per month to \$37.50 per month for Search and Rescue Members. According to Wyoming Retirement System's actuary, this bill will result in achieving 100% funding status for the pension fund by 2034 instead of the current estimate of 2042.

Coronavirus (COVID-19) Outbreak

Subsequent to year-end, the United States and global markets experienced significant declines in value resulting from uncertainty caused by the worldwide coronavirus pandemic. The World Health Organization declared the COVID-19 outbreak a public health emergency on January 30, 2020. The estimate of its financial effect is unknown at this time as the duration and full effects of the COVID-19 outbreak are also unknown. The Wyoming Retirement System (WRS) has continued operations and its retirement benefits are built on long-term strategies. The Wyoming Retirement System is closely monitoring its investment portfolio as well as its liquidity and is actively working to minimize the impact of these declines. WRS financial statements do not include adjustments to fair value resulting from the declines.

Management's Discussion and Analysis - Analysis of Deferred Compensation Plan

Deferred Compensation Plan

The Deferred Compensation (457) Plan is established under Section 457 of the Internal Revenue Code. This Plan provides supplemental retirement benefits for Plan participants. The Plan is funded by participant contributions, investment earnings and, in some cases, employer contributions. Participants direct their own investments among a menu of investment options determined by the Board.

The Plan's net position held in trust for Plan participants at December 31, 2019 amounted to \$806.2 million compared to \$660.9 million a year earlier. Changes to the Plan net position held in trust for Plan participants include contributions and investment income or loss. The Plan experienced a total increase in net position of \$145.2 million for the year 2019 compared to a net decrease of \$22.5 million for 2018. For the year 2019, employee contributions and rollovers received totaled \$54.0 million compared to \$45.9 million for 2018. Deductions from the Plan's net position are distributions to participants, and administrative expenses. A participant may request a distribution upon severance of employment, retirement, or an unforeseeable emergency as defined by the IRS Code. For 2019, distributions totaled \$35.6 million compared to \$39.8 million in distributions paid out in 2018.

The cost of the Plan is paid for primarily with administrative fees. In years when there is a surplus of participant fees, it is held in trust by WRS for future Plan expenses in periods of down markets. WRS receives a minimal amount of rebates from investment companies, which are returned to participants invested in the fund associated with the rebate.

In addition to administrative fees, participants also pay fund operating expenses to the fund managers depending on the funds selected. These expenses are deducted daily before share prices are valued. The Plan's record keeper maintains an individual account for each participant to which deferrals and other changes in value are credited.

Direct administrative expense amounted to \$848,687 compared to \$814,473 in the prior year. In addition to direct administrative expense, WRS incurs indirect administrative expenses for record keeping and portfolio management which have the effect of reducing what would otherwise be administrative revenue. Revenue reductions for indirect administrative activity totaled \$646,204 in 2019, compared to \$595,035 in 2018.

Management's Discussion and Analysis - Analysis of Deferred Compensation Plan

Deferred Compensation Plan				
Net Position				
December 31, (Dollars in Thousands)				
Assets:	2019	2018	Change	% Change
Cash & Receivables	\$12,803	\$7,933	\$4,870	61.4%
Investments: Fair Value	793,305	652,861	140,444	21.5%
Other Assets	47	94	(47)	-50.0%
Total Assets	806,155	660,888	145,267	22.0%
Liabilities:				
Other Payables	-	-	-	0.0%
Total Liabilities	-	-	-	0.0%
Total Net Position	\$806,155	\$660,888	\$145,267	22.0%

Deferred Compensation Plan				
Change in Net Position				
December 31, (Dollars in Thousands)				
Additions:	2019	2018	Change	% Change
Contributions & Rollovers	\$53,991	\$45,945	\$8,046	17.5%
Investment Income (Loss)	127,756	(27,870)	155,626	558.4%
Total Additions	181,747	18,075	163,672	905.5%
Deductions:				
Benefits	35,631	39,783	(4,152)	-10.4%
Admin. Expenses	849	815	34	4.2%
Total Deductions	36,480	40,598	(4,118)	-10.1%
Change in Net Position	145,267	(22,523)	167,790	745.0%
Total Beginning Net Position	660,888	683,411	(22,523)	-3.3%
Total Ending Net Position	\$806,155	\$660,888	\$145,267	22.0%

Basic Financial Statements

WYOMING RETIREMENT SYSTEM

STATEMENT OF FIDUCIARY NET POSITION - PENSION (AND OTHER EMPLOYEE BENEFIT) FUNDS

December 31, 2019

	Public Employees Pension Plan	State Patrol, Game & Fish Warden, and Criminal Investigator Plan	Volunteer Firefighter, Emergency Medical Technician, and Search & Rescue Pension Plan	Paid Firemen's Pension Plan A
Assets				
Cash and cash equivalents:				
Cash with State Treasurer	\$16,526,868	\$1,234,132	\$702,507	\$542,201
Domestic liquidity - outside banks	243,597,501	4,807,454	2,673,320	3,058,570
	260,124,369	6,041,586	3,375,827	3,600,771
Receivables:				
Insurance premium tax	-	-	1,100,000	-
Employee contributions	8,243,908	1,266	38,310	-
Employer contributions	8,363,510	1,294	-	-
Securities sold	28,339,394	562,123	311,006	355,825
Accrued interest and dividends	17,021,310	341,038	182,556	216,755
Currency contract receivable	176,103,231	3,475,438	1,932,616	2,211,123
Other	544,855	-	-	-
Rebate and fee income receivable	-	-	-	-
	238,616,208	4,381,159	3,564,488	2,783,703
Investments, at fair value:				
Fixed Income	1,321,249,829	26,075,174	14,499,837	16,589,393
Equities	3,640,214,800	71,840,491	39,948,932	45,705,932
Private Markets	1,260,474,123	24,875,752	13,832,864	15,826,304
Marketable Alternatives	1,306,738,410	25,788,788	14,340,583	16,407,190
Security lending collateral	351,382,651	6,934,619	3,856,190	4,411,901
Investment contracts	-	-	-	-
Self Directed Brokerage Investments	-	-	-	-
	7,880,059,813	155,514,824	86,478,406	98,940,720
Capital assets, at cost, net of accumulated depreciation	2,905,079	53,088	32,062	76,412
Total Assets:	8,381,705,469	165,990,657	93,450,783	105,401,606
Liabilities				
Payables:				
Benefits and refunds payable	619,005	-	-	-
Securities purchased	37,925,431	748,467	416,206	476,185
Administrative and consulting fees payable	24,260,614	520,979	322,863	332,221
Currency contract payable	176,958,926	3,492,326	1,942,006	2,221,868
Securities lending collateral	351,382,651	6,934,619	3,856,190	4,411,901
Total Liabilities:	591,146,627	11,696,391	6,537,265	7,442,175
Net Position held in trust for pension benefits	\$7,790,558,842	\$154,294,266	\$86,913,518	\$97,959,431

See Notes to Financial Statements for additional information.

Basic Financial Statements

WYOMING RETIREMENT SYSTEM(Continued)

STATEMENT OF FIDUCIARY NET POSITION - PENSION (AND OTHER EMPLOYEE BENEFIT) FUNDS(Continued)

December 31, 2019

Paid Firemen's Pension Plan B	Judicial Pension Plan	Law Enforcement Pension Plan	Air Guard Firefighters Pension Plan	Total	Defined Contribution 457(b) Plan	Total Pension Trust Plans
Assets(Continued)						
Cash and cash equivalents:(Continued)						
\$1,685,533	\$902,631	\$2,068,756	\$344,617	\$24,007,245	\$19,243	\$24,026,488
5,195,197	1,036,911	21,901,969	256,515	282,527,437	10,645,363	293,172,800
6,880,730	1,939,542	23,970,725	601,132	306,534,682	10,664,606	317,199,288
Receivables:(Continued)						
-	-	-	-	1,100,000	-	1,100,000
239,937	-	856,434	3,433	9,383,288	414,275	9,797,563
320,081	-	877,611	1,468	9,563,964	-	9,563,964
604,394	120,631	2,548,009	29,842	32,871,224	-	32,871,224
364,797	74,878	1,534,470	18,616	19,754,420	766	19,755,186
3,755,749	749,611	15,833,527	185,441	204,246,736	-	204,246,736
-	-	27,155	-	572,010	47,419	619,429
-	-	-	-	-	1,723,317	1,723,317
5,284,958	945,120	21,677,206	238,800	277,491,642	2,185,777	279,677,419
Investments, at fair value:(Continued)						
28,178,259	5,624,106	118,794,213	1,391,310	1,532,402,121	286,137,702	1,818,539,823
77,634,763	15,495,143	327,293,477	3,833,239	4,221,966,777	490,462,835	4,712,429,612
26,882,097	5,365,405	113,329,839	1,327,312	1,461,913,696	13,344,731	1,475,258,427
27,868,775	5,562,336	117,489,484	1,376,029	1,515,571,595	-	1,515,571,595
7,493,928	1,495,715	31,592,984	370,015	407,538,003	-	407,538,003
-	-	-	-	-	13,561	13,561
-	-	-	-	-	3,346,317	3,346,317
168,057,822	33,542,705	708,499,997	8,297,905	9,139,392,192	793,305,146	9,932,697,338
43,178	7,095	187,849	1,616	3,306,379	-	3,306,379
180,266,688	36,434,462	754,335,777	9,139,453	9,726,724,895	806,155,529	10,532,880,424
Liabilities(Continued)						
Payables:(Continued)						
-	-	157,655	-	776,660	-	776,660
808,835	161,436	3,409,894	39,936	43,986,390	-	43,986,390
562,575	112,487	2,378,106	27,864	28,517,709	-	28,517,709
3,773,998	753,253	15,910,463	186,342	205,239,182	-	205,239,182
7,493,928	1,495,715	31,592,984	370,015	407,538,003	-	407,538,003
12,639,336	2,522,891	53,449,102	624,157	686,057,944	-	686,057,944
\$167,627,352	\$33,911,571	\$700,886,675	\$8,515,296	\$9,040,666,951	\$806,155,529	\$9,846,822,480

Basic Financial Statements

WYOMING RETIREMENT SYSTEM

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION - PENSION (AND OTHER EMPLOYEE BENEFIT) FUNDS

Year Ended December 31, 2019

	Public Employees Pension Plan	State Patrol, Game & Fish Warden, and Criminal Investigator Plan	Volunteer Firefighter, Emergency Medical Technician, and Search & Rescue Pension Plan	Paid Firemen's Pension Plan A
Additions				
Contributions:				
Employee	\$153,582,203	\$3,527,287	\$431,659	\$-
Employer	155,456,957	3,639,033	-	-
Other	5,956,723	669,368	3,124,420	-
	<u>314,995,883</u>	<u>7,835,688</u>	<u>3,556,079</u>	<u>-</u>
Investment Income:				
From Investing Activities:				
Net appreciation (depreciation) in fair value of investments	1,177,617,048	23,007,774	12,876,571	15,902,985
Interest and dividends	121,126,636	2,386,207	1,341,113	1,627,995
Total investing activity:	<u>1,298,743,684</u>	<u>25,393,981</u>	<u>14,217,684</u>	<u>17,530,980</u>
Investing activity expenses:				
Investment advisor or contractor fees	(48,374,048)	(949,887)	(528,821)	(622,733)
Net income/(loss) from investing activities:	<u>1,250,369,636</u>	<u>24,444,094</u>	<u>13,688,863</u>	<u>16,908,247</u>
Securities lending activities:				
Securities lending gross income	11,952,293	233,584	130,447	159,415
Securities lending expenses:				
Broker rebates	(10,600,873)	(207,157)	(115,695)	(141,455)
Agent fees	(202,387)	(3,958)	(2,209)	(2,689)
Total securities lending expenses:	<u>(10,803,260)</u>	<u>(211,115)</u>	<u>(117,904)</u>	<u>(144,144)</u>
Net income from securities lending activities: (Note 3)	<u>1,149,033</u>	<u>22,469</u>	<u>12,543</u>	<u>15,271</u>
Total investment income/(loss)	<u>1,251,518,669</u>	<u>24,466,563</u>	<u>13,701,406</u>	<u>16,923,518</u>
Total additions(deletions)	<u>1,566,514,552</u>	<u>32,302,251</u>	<u>17,257,485</u>	<u>16,923,518</u>
Deductions				
Benefits paid / Distributions	579,179,480	10,843,841	6,466,593	16,093,422
Refunds	21,308,205	288,795	40,182	-
Administrative expenses	6,517,921	128,135	71,976	87,238
Administrative expenses: Fund Specific	9,170	10,635	17,475	-
Depreciation Expense	309,531	6,038	3,455	4,405
Total deductions:	<u>607,324,307</u>	<u>11,277,444</u>	<u>6,599,681</u>	<u>16,185,065</u>
Net increase/(decrease) in Net Position	<u>959,190,245</u>	<u>21,024,807</u>	<u>10,657,804</u>	<u>738,453</u>
Net position held in trust for pension benefits:				
Beginning of year	6,831,368,597	133,269,459	76,255,714	97,220,978
End of year	\$7,790,558,842	\$154,294,266	\$86,913,518	\$97,959,431

See Notes to Financial Statements for additional information.

Basic Financial Statements

WYOMING RETIREMENT SYSTEM(Continued)

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION - PENSION (AND OTHER EMPLOYEE BENEFIT) FUNDS(Continued)

Year Ended December 31, 2019(Continued)

Paid Firemen's Pension Plan B	Judicial Pension Plan	Law Enforcement Pension Plan	Air Guard Firefighters Pension Plan	Total	Defined Contribution 457(b) Plan	Total Pension Trust Plans
Additions(Continued)						
Contributions:(Continued)						
\$2,707,081	\$674,477	\$13,880,776	\$369,907	\$175,173,390	\$53,991,334	\$229,164,724
3,515,953	1,060,445	13,856,199	158,176	177,686,763	-	177,686,763
80,631	353,894	1,205,555	-	11,390,591	-	11,390,591
6,303,665	2,088,816	28,942,530	528,083	364,250,744	53,991,334	418,242,078
Investment Income:(Continued)						
From Investing Activities:(Continued)						
24,554,117	4,904,270	104,249,885	1,218,088	1,364,330,738	125,138,119	1,489,468,857
2,556,135	519,128	10,766,989	131,451	140,455,654	3,264,276	143,719,930
27,110,252	5,423,398	115,016,874	1,349,539	1,504,786,392	128,402,395	1,633,188,787
Investing activity expenses:(Continued)						
(1,023,217)	(204,053)	(4,325,737)	(50,267)	(56,078,763)	(646,204)	(56,724,967)
26,087,035	5,219,345	110,691,137	1,299,272	1,448,707,629	127,756,191	1,576,463,820
Securities lending activities:(Continued)						
250,015	49,900	1,060,501	12,345	13,848,500	-	13,848,500
(221,712)	(44,251)	(940,493)	(10,947)	(12,282,583)	-	(12,282,583)
(4,239)	(846)	(17,972)	(209)	(234,509)	-	(234,509)
(225,951)	(45,097)	(958,465)	(11,156)	(12,517,092)	-	(12,517,092)
24,064	4,803	102,036	1,189	1,331,408	-	1,331,408
26,111,099	5,224,148	110,793,173	1,300,461	1,450,039,037	127,756,191	1,577,795,228
32,414,764	7,312,964	139,735,703	1,828,544	1,814,289,781	181,747,525	1,996,037,306
Deductions(Continued)						
5,921,008	1,720,417	34,850,971	442,888	655,518,620	35,631,675	691,150,295
35,091	-	2,425,983	69,971	24,168,227	-	24,168,227
137,304	27,764	578,714	6,972	7,556,024	848,687	8,404,711
1,330	-	18,055	-	56,665	-	56,665
6,402	1,284	27,143	327	358,585	-	358,585
6,101,135	1,749,465	37,900,866	520,158	687,658,121	36,480,362	724,138,483
26,313,629	5,563,499	101,834,837	1,308,386	1,126,631,660	145,267,162	1,271,898,822
Net position held in trust for pension benefits:(Continued)						
141,313,723	28,348,072	599,051,838	7,206,910	7,914,035,291	660,888,367	8,574,923,658
\$167,627,352	\$33,911,571	\$700,886,675	\$8,515,296	\$9,040,666,951	\$806,155,529	\$9,846,822,480

Notes to the Basic Financial Statements

Note 1. Reporting Entity and Summary of Significant Accounting Policies

Reporting Entity

The Wyoming Retirement System (WRS) is a Fiduciary Fund of the State of Wyoming charged by State Statutes to provide retirement benefits for retired and disabled public employees. The decision that WRS is a Fiduciary Fund of the State of Wyoming was made by applying the criteria set forth in accounting principles generally accepted in the United States of America (GAAP). The basic criterion for this decision is that the State of Wyoming and its elected officials are accountable for WRS. The State's financial accountability was primarily determined by the fact that the Governor appoints the voting majority of the board members of WRS can thus impose the will of the State on WRS.

Although WRS is a Fiduciary Fund of the State of Wyoming, it serves as the nucleus for the reporting entity under the provisions of Government Accounting Standards Board (GASB) Statement No. 14 for its separately issued financial statements. Using this premise, WRS is not financially accountable for any other organizations and thus, includes only the financial activity of the various plans of WRS.

Basis of Accounting

The accompanying financial statements are prepared using the accrual basis of accounting and include the accounts of eight defined benefit pension plans and one defined contribution plan, all of which are administered by the System:

- Public Employee Pension Plan
- State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan
- Volunteer Firefighter, EMT, and Search & Rescue Pension Plan
- Paid Firemen's Pension Plan A
- Paid Firemen's Pension Plan B
- Judicial Pension Plan
- Law Enforcement Pension Plan
- Air Guard Firefighters Pension Plan
- Deferred Compensation Plan (457 Plan)

The financial activities of these pension plans are included in the fiduciary funds of the Wyoming On-Line Financial System as established by the Wyoming Funds Consolidation Act and are defined as pension (and other employee benefit) trust funds by accounting principles generally accepted in the United States of America.

Each pension plan maintains separate accounts and all actuarial determinations are made using separate fund-based information. All plans own a percentage of the combined investment fund. Although the assets of the pension plans are co-mingled for investment purposes, each pension plan's assets may be used only for the payment of benefits to the members of that plan, in accordance with the terms of the plan.

Employee and employer contributions are recognized as revenue in the period in which employee services are performed. Benefits, refunds, and contribution returns are recognized when due and payable in accordance with the terms of the plan.

Refunds represent withdrawals of participant contributions by participants in the form of a total or partial rollover or direct distribution from the plan. Return of contributions consists of the withdrawal of both participant and employer contributions returned to the employer as allowed in limited circumstances by state statute.

Notes to the Basic Financial Statements

Method used to value investments

Investments are reported at fair value. The fair value of the investments, other than those described below, was determined by the latest bid price or by the closing exchange price at the balance sheet date. The fair value of investments that are organized as limited partnerships and have no readily ascertainable fair values (such as private equity, real estate, and real assets) has been determined by management based on the individual investment's capital account balance, reported at fair value by each respective general partner, at the closest available reporting period. The fair value is then adjusted for subsequent contributions, distributions, management fees, and changes in values of foreign currency.

Capital Assets

Capital assets, which include property, plant and equipment, and infrastructure assets are reported in the financial statements (Statement of Net Position). Capital assets are stated at cost.

The Wyoming Retirement System capitalized all building, land, and other capital assets that have a value or cost equal to or greater than the capitalization threshold for its asset type at the date of acquisition and has a useful life that extends beyond a single reporting period. The Wyoming Retirement System's capital assets are depreciated over their useful lives using the straight-line method. Capital asset thresholds and estimated useful lives are as follows:

Capital Assets		
Asset Type	Estimated Life	Capitalization Threshold
Buildings	5-40 years	\$50,000
Improvements	5-25 years	50,000
Land	n/a	Capitalize all
Equipment	3-17 years	15,000
Intangible-Purchased Software	3-15 years	50,000
Intangible-Internally Generated Software	3-15 years	2,000,000

Administrative Expenses

Administrative expenses of WRS are paid proportionately based on total proportionate share of the total fiduciary net position per prior month.

Notes to the Basic Financial Statements

Note 2. Description of the Retirement Plans

WRS is the administrator of a multiple employer, cost sharing public employee retirement system (PERS) and its designated purpose is to provide retirement allowances and other benefits to members. The authority for establishing and amending the benefits and contribution rates rests with the Legislature of the State of Wyoming. The obligation to collect and remit the contribution rests with the employers of each plan. Administrative costs are deducted from the plan assets of each plan. The costs of administering the plan are financed by both the investment income and contributions. WRS is also the administrator of a deferred compensation (457(b)) plan.

At December 31, 2019, WRS's Employer membership consisted of the following:

Number of Employers by Type	
State Agencies	81
Public Schools	51
Universities & Community Colleges	8
Counties	23
Municipalities	89
Other	260
Volunteer Firefighter & EMT	121
Paid Firemen	16
Totals:	649

Employers may participate in more than one plan as indicated in the table below. The Paid Firemen's Pension Plan A is a closed plan and as such does not have any participating employers.

Employer Participation by Plan	Public Employees Pension Plan	State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan	Volunteer Firefighter, EMT, Search & Rescue Pension Plan	Paid Firemen's Pension Plan A	Paid Firemen's Pension Plan B	Judicial Pension Plan	Law Enforcement Pension Plan	Air Guard Firefighter Pension Plan	Defined Contribution Plan 457 Plan
State Agencies	X	X				X	X	X	X
Public Schools	X								X
Universities & Community Colleges	X						X		X
Counties	X						X		X
Municipalities	X						X		X
Other	X								X
Volunteer Firefighter & EMT			X						
Paid Firemen					X				X

Notes to the Basic Financial Statements

Following are descriptions of the members of each of the cost sharing multiple employer public employee retirement system pension plans administered by WRS:

	Public Employee Pension Plan	State Patrol, Game & Fish Warden and Criminal Investigator Pension Plan	Volunteer Firefighter, EMT, and Search & Rescue Pension Plan	Paid Firemen's Pension Plan A	Paid Firemen's Pension Plan B	Judicial Pension Plan	Law Enforcement Pension Plan	Air Guard Firefighter Pension Plan
Current Employees:								
Vested	23,762	184	1,496	1	296	34	1,809	22
Non-vested	11,444	128	921	-	78	16	851	19
Total Current Employees:	35,206	312	2,417	1	374	50	2,660	41
Inactive employees entitled to benefits but not yet receiving them								
	7,103	24	399	-	50	-	399	2
Total active or vested	42,309	336	2,816	1	424	50	3,059	43
Inactive nonvested non retired/non vested members								
	25,008	54	1,597	1	31	-	1,068	4
Total Active/Inactive Members	67,317	390	4,413	2	455	50	4,127	47
Retirees and beneficiaries of deceased retirees currently receiving benefits								
	28,750	351	1,555	273	151	30	1,363	13
Total all members	96,067	741	5,968	275	606	80	5,490	60

Public Employee Pension Plan

The Public Employee Pension Plan is a cost sharing multiple employer defined benefit, contributory retirement plan covering substantially all employees of the State and of the Public School Systems of Wyoming. The Plan also covers employees of those political subdivisions and other statutorily allowed entities, which have elected to participate in the Plan.

Starting on July 1, 2019, the Plan statutorily required 17.62% of the participant's salary to be contributed to the Plan. Contributions consist of 8.75% of the participant's salary as employee contributions and 8.87% as employer contributions. From September 1, 2018 to June 30, 2019, the statutorily required contributions consisted of 8.50% of the participant's salary as employee contributions and 8.62% as employer contributions for a total contribution of 17.12%. The amount of contributions designated as employee contributions represent the portion of total contributions that a participant retains ownership of and can elect to receive as a refund upon termination of employment. Employers can elect to cover all or a portion of the employee's contribution at their discretion. Through legislation passed during the 2014 legislative session, two tiers of benefits were established for participants of this plan.

- Tier 1, the Plan allows for normal retirement after four years of service and attainment of age 60. Early retirement is allowed provided the employee has completed four years of service and attained age 50 or 25 years of service but will result in a reduction of benefits based on the length of time remaining to age 60.
- Tier 2, the Plan allows for normal retirement after four years of service and attainment of age 65. Early retirement is allowed provided the employee has completed four years of service and attained age 55, or 25 or more years of service but will result in a reduction of benefits based on the length of time remaining to age 65.

All employees may also retire upon normal retirement on the basis that the sum of the member's age and service is at least 85.

Notes to the Basic Financial Statements

The Public Employees Plan provides retirement, disability and death benefits according to predetermined formulas and allows retirees to select one of seven optional methods for receiving benefits, including two joint and survivor forms of benefits: a 100% joint and survivor annuity, and a 50% joint and survivor annuity. The benefit amounts under these options are determined on an actuarially equivalent basis. The State Legislature must grant any cost of living adjustment provided to retirees. In addition, a cost of living adjustment will not be approved by the legislature unless the plan is 100% funded after the COLA is awarded.

Employees terminating prior to normal retirement can elect to withdraw all employee contributions and accumulated interest through date of termination or, if they are vested, they may elect to remain in the Plan and be eligible for unreduced retirement benefits at age 60 (Tier 1 employee) or 65 (Tier 2 employee).

State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan

The Wyoming State Patrol, Game and Fish Warden and Criminal Investigator Pension Plan is a cost sharing multiple employer defined benefit, contributory retirement plan covering sworn officers of the Wyoming State Highway Patrol and law enforcement officers employed by the Wyoming State Game and Fish Department and sworn peace officers of the Division of Criminal Investigation.

The Plan statutorily requires participants to contribute 14.56% of their salary to the Plan and the State is required to contribute 14.88% of each participant's salary for a total contribution of 29.44%.

The Plan allows for normal retirement at age 50. The Plan provides retirement, disability and death benefits according to predetermined formulas. Terminating employees are entitled to a refund of employee contributions and accumulated interest. If they are vested, they may elect to remain in the Plan and be eligible for retirement benefits at age 50. The cost of living adjustment provided to retirees is determined by the Board and must be approved by the State Legislature. In addition, a cost of living adjustment will not be approved by the legislature unless the plan is 100% funded after the COLA is awarded.

The maximum service pension is 75% of the three-year highest average salary. The minimum years of service requirement for a monthly benefit are six years.

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan

The Volunteer Firefighter, EMT, and Search & Rescue Pension Plan is a cost sharing multiple employer defined benefit, contributory retirement plan covering volunteer firefighters, emergency medical technicians (EMTs), and search and rescuers who elect to participate in the Plan. Volunteer firefighters and EMTs are statutorily required to contribute \$15.00 monthly to the Plan. Upon the inclusion of search and rescue volunteers to the plan as of July 1, 2019, their statutorily required contribution is \$30.00 monthly to the Plan. Any contributions to the Plan may be fully or partially paid by political subdivisions on behalf of participants, if approved by the governing board. In addition, through June 30, 2019 the State paid into the Plan 70% of the gross annual tax collected on fire insurance premiums and 80% beginning on July 1, 2019.

The Plan provides retirement and death benefits according to predetermined amounts primarily determined by entry age and years of service of the participant. Participants may withdraw from the Plan at any time and receive refunds of participant contributions and accumulated interest. The Volunteer Firefighter and EMT plan was created on July 1, 2015, combining the assets and liabilities of two predecessor plans (Volunteer Fireman's Plan and Volunteer EMT Plan). The new plan features revised contribution and benefit provisions and governance by one board instead of two. It provides a modest benefit increase to retired volunteers whose benefit structure had remained static for some time. It also provided a long-term funding source to stabilize the finances of Volunteer EMT plan, while establishing consistent provisions for both firefighter and EMT volunteers. On July 1, 2019, Search and Rescue Volunteers were added to the plan and contributions were increased by transferring an additional 10% of the fire insurance premium tax revenue. The percentage of tax increased from 70% to 80%.

Notes to the Basic Financial Statements

Paid Firemen's Pension Plan A

The Paid Firemen's Pension Plan A is a cost sharing multiple employer defined benefit, contributory retirement plan covering paid firefighters who were employed prior to July 1, 1981 and who elected to participate.

The Plan statutorily required participants to contribute 8% of their salary to a maximum not to exceed the salary of a Firemen First Class. Employers were required to contribute 21% of the salary. Effective April 1, 1997, required contributions have been suspended as the Plan had been determined to be actuarially over-funded. This plan is being reviewed to determine the appropriate measures to take to ensure this plan is adequately funded, as it is a closed plan.

The Plan statutorily provides retirement, disability and death benefits according to a percentage of a firefighter first class salary. The Plan also statutorily provides for an annual percentage increase in the benefit amounts beginning in the year following twelve (12) months of payments, by at least 3%. In the event the current actuarial valuation indicates the fair value of assets is greater than one hundred fifteen percent (115%) of the actuarial value of liabilities, the Board may increase the benefit by an amount determined affordable by the actuary but not greater than five percent (5%) of the benefit. Participants may withdraw from the Plan at any time and receive refunds of participant contributions without interest.

Paid Firemen's Pension Plan B

The Paid Firemen's Pension Plan B is a cost sharing multiple employer defined benefit, contributory retirement plan covering paid firefighters who were employed after July 1, 1981.

Starting on July 1, 2019, the Plan statutorily requires participants to contribute 9.745% of their salary to the Plan and the employer is required to contribute 13% of each participant's salary. From July 1, 2014 to June 30, 2019, the Plan statutorily required participants to contribute 9.245% of their salary to the Plan and the employer was required to contribute 12% of each participant's salary. .

The Plan provides retirement, disability and death benefits according to predetermined formulas. The State Legislature grants any cost of living adjustment provided to retirees. In addition, a cost of living adjustment will not be approved by the legislature unless the plan is 100% funded after the COLA is awarded. Participants may withdraw from the Plan at any time and receive refunds of participant contributions without interest.

Wyoming Judicial Pension Plan

The Wyoming Judicial Pension Plan is a single employer defined benefit, contributory plan covering any Justice of the Supreme Court, District Judge or County Court Judge appointed to any of these offices on or after July 1, 1998, and with no prior service as a justice of the Supreme Court or district judge at the time of the appointment. The Plan also covers any justice or judge who elects to participate.

The Plan statutorily requires participants to contribute 9.22% of their salary to the Plan and the employer is required to contribute 14.5% of each participant's salary.

The Plan statutorily provides retirement and death benefits according to predetermined amounts primarily determined by age and years of service of the participant. Any cost of living adjustment provided to retirees is determined by the Board and must be approved by the State Legislature. In addition, a cost of living adjustment will not be approved by the legislature unless the plan is 100% funded after the COLA is awarded. Participants may withdraw from the Plan at any time and receive refunds of participant contributions and accumulated interest.

Notes to the Basic Financial Statements

Law Enforcement Pension Plan

The Wyoming Law Enforcement Pension Plan is a cost sharing multiple employer defined benefit, contributory plan covering any county sheriff, deputy county sheriff, municipal police officer, Wyoming correctional officer, Wyoming law enforcement academy instructor, University of Wyoming campus police officer, detention officer or dispatcher for law enforcement agencies and certain investigators of the Wyoming Livestock Board.

The Plan statutorily requires participants to contribute 8.6% of their salary to the Plan and the employer is required to contribute 8.6% of each participant's salary.

The Plan statutorily provides retirement, disability and death benefits according to predetermined amounts determined by salary, age and years of service of the participant. The State Legislature must grant any cost of living adjustment provided to retirees. In addition, a cost of living adjustment will not be approved by the legislature unless the plan is 100% funded after the COLA is awarded. Participants may withdraw from the Plan at any time and receive refunds of participant contributions and accumulated interest.

Air Guard Firefighters Pension Plan

The Air Guard Pension Plan is a single employer defined benefit, contributory retirement plan covering the Air Guard Firefighters.

The Air Guard Firefighters Pension Plan statutorily required 23.77% of the participant's salary to be contributed to the Plan. Contributions consist of 16.65% of the participant's salary as employer contributions and 7.12% as employee contributions. The amount of contributions designated as employee contributions represent the portion of total contributions that a participant retains ownership of and can elect to receive as a refund upon termination of employment. The State Legislature must grant any cost of living adjustment provided to retirees. In addition, a cost of living adjustment will not be approved by the legislature unless the plan is 100% funded after the COLA is awarded. Employers can elect to cover all or a portion of the employee's contribution at their discretion.

Wyoming Deferred Compensation Plan

The Plan administered by WRS is an IRS Section 457 Deferred Compensation Plan. This Plan is intended as a supplemental plan to the defined benefit retirement benefits of WRS for employees of public employers, which have adopted the Plan. Non-state employers may offer competing 457 plans offered through vendors, however in some cases, the 457 Deferred Compensation Plan is the only plan offered by the employer. Contributions may be made into the Plan, subject to Plan and Internal Revenue Code limitations, by employees of participating employers sponsoring the Plan. There are 24,347 open and 15,695 active participants in the Plan from 297 different employers.

Upon qualifying for distributions, benefits are paid out in lump sums, or as periodic benefit payments, at the option of the participant based on individual account balances and Plan provisions. The Plan's account balances are fully vested to the participants at the time of deposit.

Investments in the Plan are individually directed by Plan participants among Board approved investment options of varying degrees of risk and earnings potential. Participants may transfer their funds between these options daily. Investments of the Plan are valued daily.

In addition to employee contributions, the 457 Plan also accepts employer contributions on behalf of their employees, provided such contribution when added to the employees' deferred contribution does not exceed the maximum deferral permitted by the IRS.

Notes to the Basic Financial Statements

Note 3. Cash, Cash Equivalents and Investments

WRS's Board has been authorized by the Wyoming Legislature, pursuant to State Statutes including W.S. 9-3-408 (b), to act on behalf of the plan membership in investing and managing monies in the retirement account. In doing so, per the language in W.S. 9-3-408 (b), it "shall exercise the judgment and care that a prudent investor would, in light of the purposes, terms, distribution requirements and all other circumstances surrounding the monies in the retirement account, including risk and return objectives established by the Board which are reasonably suitable to the purpose of the Wyoming Retirement System." The Board shall evaluate and select target asset classes to enhance returns or reduce risk in the total portfolio and has delegated to staff the responsibility to select strategic asset classes and investment managers. On May 16, 2019 Governance Policy was amended to include Private Debt in the Fixed Income Category and Private Equity in the Equity category. The reclassification will be reflected in the financial statements in subsequent reporting periods.

The following table shows the System's defined benefit plan investments by type as of December 31, 2019:

Target Asset Class	Target	Max	Min	2019	With Overlay	Physical Securities
Tactical Cash	2.00%	5.00%	0.00%	2.20%	\$198,519,436	\$282,527,437
Fixed Income	18.00%	25.50%	13.00%	18.40%	1,658,422,324	1,532,402,121
Corporate Bonds/Credit					356,580,245	356,580,245
Emerging Markets Debt					29,451,054	29,451,054
Mortgages/ABS					78,283,410	78,283,410
TIPS					137,349,795	137,349,795
Treasury/Agencies/Governments					1,056,757,820	930,737,617
Equity	44.00%	49.00%	39.00%	46.37%	4,179,954,574	4,221,966,777
Domestic					2,417,621,338	2,454,302,878
Emerging Markets					784,491,767	666,366,677
International Developed					977,841,469	1,101,297,222
Marketable Alternatives	19.00%	24.00%	14.00%	16.81%	1,515,571,595	1,515,571,595
Absolute Return					496,100,580	496,100,580
Directional Funds					498,991,620	498,991,620
GAA					520,479,395	520,479,395
Private Markets	17.00%	33.00%	12.00%	16.22%	1,461,913,696	1,461,913,696
Other Real Assets					564,318,273	564,318,273
Private Debt					181,444,940	181,444,940
Private Equity					446,118,960	446,118,960
Real Estate					270,031,523	270,031,523
Total Investments					9,014,381,625	9,014,381,625
Net Receivables/Payables					(5,159,140)	(5,159,140)
Total Assets					\$9,009,222,485	\$9,009,222,485

Note 1: Numbers may not total exactly due to rounding.

Note 2: Effective May 16, 2019 Governance Policy was amended to include Private Debt in the Fixed Income category.

Note 3: Effective May 16, 2019 Governance Policy was amended to include Private Equity in the Equity category.

Notes to the Basic Financial Statements

Overlay Program

WRS employs a manager to provide an overlay program to ensure the system's major asset classes remain within a certain percentage of their targeted weights. Market movements can lead to significant implicit tilts within the portfolio. For example, a sharp decline in equities will many times be accompanied by stability within fixed income. Consequently, the equity position will decrease as a percentage of assets while fixed income will increase. This causes an "implicit" tilt towards fixed income.

	<u>Financial Report</u>	<u>Overlay Program</u>	<u>Combined</u>	<u>% Assets Under Management</u>	<u>% Category</u>
Tactical Cash					
Total Tactical Cash	\$282,527,437	\$(84,008,001)	\$198,519,436	2.20%	100.00%
Fixed Income					
Corporate Bonds/Credit	356,580,245	-	356,580,245	3.96%	21.50%
Emerging Markets Debt	29,451,054	-	29,451,054	0.33%	1.78%
Mortgages/ABS	78,283,410	-	78,283,410	0.87%	4.72%
Treasury Inflation Protected Securities (TIPS)	137,349,795	-	137,349,795	1.52%	8.28%
Treasury/Agencies/Governments	930,737,617	126,020,203	1,056,757,820	11.72%	63.72%
Total Fixed Income	1,532,402,121	126,020,203	1,658,422,324	18.40%	100.00%
Equity					
Domestic	2,454,302,878	(36,681,540)	2,417,621,338	26.82%	57.84%
Emerging Markets	666,366,677	118,125,090	784,491,767	8.70%	18.77%
International Developed	1,101,297,222	(123,455,753)	977,841,469	10.85%	23.39%
Total Equity	4,221,966,777	(42,012,203)	4,179,954,574	46.37%	100.00%
Marketable Alternatives					
Absolute Return	496,100,580	-	496,100,580	5.50%	32.73%
Directional Funds	498,991,620	-	498,991,620	5.54%	32.92%
Global Asset Allocation (GAA)	520,479,395	-	520,479,395	5.77%	34.34%
Total Marketable Alternatives	1,515,571,595	-	1,515,571,595	16.81%	100.00%
Private Markets					
Other Real Assets	564,318,273	-	564,318,273	6.26%	38.60%
Private Debt	181,444,940	-	181,444,940	2.01%	12.41%
Private Equity	446,118,960	-	446,118,960	4.95%	30.52%
Real Estate	270,031,523	-	270,031,523	3.00%	18.47%
Total Private Markets	1,461,913,696	-	1,461,913,696	16.22%	100.00%
Total Securities & Cash	9,014,381,625	-	9,014,381,625	100.00%	100.00%
Net Receivables/(Payables)					
Total Net Receivables/Payables	(5,159,140)	-	(5,159,140)		
Total Assets	\$9,009,222,485	\$-	\$9,009,222,485		

Note 1: Numbers may not total exactly due to rounding.

Note 2: Effective May 16, 2019 Governance Policy was amended to include Private Debt in the Fixed Income category.

Note 3: Effective May 16, 2019 Governance Policy was amended to include Private Equity in the Equity category.

Notes to the Basic Financial Statements

Custodial Credit Risk

Custodial credit risk for deposits of the defined benefit plans is the risk that in the event of a bank failure, the Systems' and Plans' deposits may not be returned to them. Deposits subject to this risk are those other than the \$24.0 million of deposits held by the State Treasurer. These deposits totaling \$282.5 million are held by the System's primary custodian and are collateralized by commercial paper, repurchase agreements and money market mutual funds held by the primary custodian or its agents in accounts in the name of the Wyoming Retirement System.

Deposits are presented in the basic financial statements at cost plus accrued interest, which is also the market or fair value. At December 31, 2019, the carrying amount of all deposits and the corresponding bank balance totaled approximately \$306.5 million.

Investment securities within the defined benefit plans are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the System and are held by either the counterparty or the counterparty's trust department or agent, but not in the System's name. Consistent with the System's investment policy, all investments are held by the System's primary custodian and registered in the System's name except for approximately \$4,136.2 million held in commingled vehicles outside of Northern Trust's custody.

The System does not have a formal deposit or investment policy for custodial credit risk.

Concentration of Credit Risk

The System expects the domestic investment managers to maintain diversified portfolios by sector and by issuer using the following guidelines in accordance with the System's investment policies.

The general guideline is to discourage equity investment managers from holding positions in a single issue whose fair value exceeds 5% of the portfolio. However, exceptions can be made if this percentage of the overall portfolio is exceeded as a consequence of long held positions whose value has grown due to their strong returns. At December 31, 2019, the System did not have any securities that breached this threshold. The board does not have any formal policy relating to any specific investment related risk.

For the exposure limitations of the System, the maximum allocation to a single active strategy at a manager/firm/general partner, shall not exceed 10 percent of the total fair value of the Fund. The maximum allocation to a single manager/firm/general partner, including passive strategy exposure, in aggregate, shall not exceed 25 percent of the total fair value of the Fund. Maximum exposure to a manager/firm in active strategies is 15 percent.

The Board authorizes the use of derivative instruments to control portfolio risk, implement asset allocation changes in a cost-effective manner and reduce transaction costs or taxes. When appropriate, investment managers may be given permission to use derivatives for hedging, including cross-hedging of currency exposures, creation of market exposures, and management of country and asset allocation exposure. Investment managers are prohibited from using derivative or synthetic securities that expose WRS to potentially high price volatility or are either speculative or leveraged, or whose marketability may be severely limited.

The purpose of real estate investments is to provide counter cyclical returns, current income and inflation protection. Funds considered will be comprised primarily of highly leased properties with reasonable income components. The real estate portfolio, in aggregate, shall be diversified by property type, property size, geographic region, and economic sector exposure. Leverage shall be used sparingly.

Notes to the Basic Financial Statements

Rating	\$ Amount
AAA	\$932,850,593
AA	126,804,866
A	30,816,952
BBB	94,327,002
BB	59,729,719
B	62,661,966
Below B	15,268,678
N/A	334,600,766
STIF	80,858,010
Total	\$1,737,918,552

Credit risk – Debt Securities

Fixed income investment grade credits carry an equivalent of a Standard & Poor's rating of BBB or better. Managers of accounts holding publicly traded non-Government debt should select and manage them to assure an appropriate balance in maturity, quality, marketability and adequate diversification with respect to industry and issues.

High yield investments are defined by the System as those debt securities, which carry a Standard & Poor's quality rating of BB or lower. Fund managers who manage these investments should structure a well-diversified portfolio with respect to rating, maturity, duration, yield, industry and issuer with the intent of minimizing the risk of losses in any single security.

The distribution of quality rating of debt securities in the System's investment portfolio at fair value as of December 31, 2019 is shown to the left:

Interest Rate Risk

The System is also exposed to investment fair value loss arising from increased interest rates. Duration is a measure of the sensitivity of a debt security's value to rate changes. It is calculated using the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price. More specifically, it is the approximate percentage change in value for a 1% change in rates. The System's investment policy guidelines require that the investment grade debt securities portfolio be maintained with weighted-average portfolio duration within two years of the benchmark duration. No specific investment guidelines exist for other debt securities subject to interest rate risk not included in the investment grade portfolio.

At December 31, 2019 the following table shows investments by investment type, amount and the effective weighted duration:

Category	\$ Amount	% Amount	Contribution to Duration
Asset Backed Securities	\$21,113,070	1.44%	0.0225
Bank Loans	31,000,394	2.12%	0.0038
Collateralized Bonds	441,030	0.03%	-0.0002
Commercial Mortgage-Backed	38,165,928	2.61%	0.0840
Commercial Paper	699,766	0.05%	0.0000
Corporate Bonds	217,344,232	14.86%	0.7528
Corporate Convertible Bonds	2,282,569	0.16%	0.0029
Government Agencies	124,389,754	8.50%	0.6003
Government Bonds	579,898,525	39.64%	4.2024
Government Mortgage Backed Securities	243,594,190	16.65%	0.9613
Gov't-issued Commercial Mortgage-Backed	1,032,627	0.07%	0.0057
Index Linked Government Bonds	136,989,123	9.36%	0.3427
Municipal/Provincial Bonds	746,629	0.05%	0.0056
Non-Government Backed C.M.O.s	16,464,029	1.13%	0.0128
Short Term Bills and Notes	48,774,405	3.33%	0.0053
Total	\$1,462,936,268	100.00%	7.0018

Notes to the Basic Financial Statements

Deferred Compensation (457) Plan Cash and Investments

The cash and investments held within the 457 Plan are comprised of the aggregate holdings of the participant's accounts that are invested in different mutual fund type investment options and cash held on deposit with the State collected from participants as fees for the purposes of plan administration. Plan participants determine the holdings of their individual participant accounts; therefore, the exposure of each participant to the investment risks discussed above is determined by that individual's risk tolerance. Additionally, the risks of the investment portfolios associated with each of the investment options are determined by the mutual fund manager and may vary depending on their risk tolerances and performance objectives.

Limited Partnerships

The system has invested in limited partnerships. As of December 31, 2019 the fair value of these investments was \$3,086,300,727. The limited partnerships invest in a variety of investments.

Securities Lending

Under the authority of the governing statutes and in accordance with policies set by the Board of Trustees, the System lends its securities to broker-dealers with a simultaneous agreement to return the collateral for the securities in the future. The System's custodian is authorized to lend available securities to authorized broker-dealers subject to the receipt of acceptable collateral. The System lends securities such as common stock, U.S. Treasury and corporate bonds and receives collateral in the form of either cash or other securities similar to the type on loan. Borrowers are required to provide collateral amounts of 102% of the fair value of loaned U.S. securities plus accrued interest and 105% of the fair value of loaned non-U.S. securities plus accrued interest. The System cannot pledge or sell collateral securities received until and unless a borrower defaults. Securities held as collateral at year-end are not subject to the preceding disclosures of custodial credit risk as they are held in a collateral investment pool. At year-end, the System had no credit risk exposure to borrowers because the amounts the System owed the borrowers exceed the amounts the borrowers owed the System. Contracts with the lending agents require them to indemnify the System if the borrowers fail to return the securities (and if the collateral is inadequate to replace the securities lent) or fail to pay the System for income distributions by the securities' issuers while the securities are on loan. Net securities lending income during the year ended December 31, 2019 was \$1,331,406.

Cash and U.S. Government securities were provided as collateral for the securities lent. At December 31, 2019, the carrying amount and fair value of the securities on loan was approximately \$407,538,005. The underlying collateral for these securities had a fair value of approximately \$418,581,525. The Fair Value of Loaned Securities Collateralized by Non-Cash Collateral of approximately \$109,109,053 and Fair Value of Non Cash Collateral of approximately \$112,022,855 of the total collateral. Because these securities cannot be sold or pledged unless the borrower defaults, this collateral and related liability is not presented on the statement of net position. The remaining collateral represents cash collateral that is invested and is classified according custodial credit risk. It is included as an asset on the statement of net position with an offsetting liability for the return of collateral.

Notes to the Basic Financial Statements

Foreign Currency Risk

The System also expects its International Security Investment Managers to maintain diversified portfolios by currency denomination; however, no formal policy limits have been established. At December 31, 2019, the System's exposure to foreign currency risk for its short-term and equity securities is as follows:

Exposures by Currency as of December 31, 2019				
Currency	Cash	Investments	Derivatives & Payables/Receivables	Total
Argentine peso	\$36,555	\$117,149	\$-	\$153,705
Australian dollar	29,074	30,883,051	(8,349,266)	22,562,858
Brazilian real	93,715	4,514,421	1,279,862	5,887,998
British pound sterling	309,569	112,385,666	(37,626,073)	75,069,162
Canadian dollar	91,181	513,023	3,293,057	3,897,261
Chilean peso	-	1,653,266	-	1,653,266
Chinese yuan renminbi	-	-	(1,899,523)	(1,899,523)
Colombian peso	-	-	(30,787)	(30,787)
Czech koruna	967	80,313	2,445	83,725
Danish krone	19,777	10,121,169	749,438	10,890,384
Euro	(3,469,853)	223,716,780	(62,574,663)	157,672,263
HK offshore Chinese Yuan Renminbi	42,711	662,112	(619,369)	85,455
Hong Kong dollar	(316,818)	33,960,477	(4,529,075)	29,114,585
Indian rupee	-	-	1,282,982	1,282,982
Indonesian rupiah	343,981	8,511,007	2,030,060	10,885,049
Japanese yen	10,251,521	263,131,695	(43,207,515)	230,175,701
Malaysian ringgit	15,360	1,054,040	(812,315)	257,085
Mexican peso	267,662	7,261,280	1,106,338	8,635,280
New Israeli shekel	12,123	2,616,988	37,534	2,666,645
New Taiwan dollar	-	-	17,286	17,286
New Zealand dollar	7,982	2,959,142	702	2,967,826
Norwegian krone	2,426	2,100,992	-	2,103,418
Philippine peso	-	360,394	-	360,394
Polish zloty	2,788	-	1,656	4,445
Russian ruble	232,279	3,301,018	(740,097)	2,793,200
Singapore dollar	49,751	8,927,544	21,328	8,998,622
South African rand	-	2,444,241	(2,299,717)	144,524
South Korean won	2,801	8,888,807	(5,206,058)	3,685,550
Swedish krona	(33,336)	16,601,092	(3,617,412)	12,950,344
Swiss franc	14,732	88,838,699	2,801,640	91,655,071
Thai baht	-	932,148	(458,625)	473,524
TOTAL	\$8,006,948	\$836,536,515	\$(159,346,165)	\$685,197,298

Notes to the Basic Financial Statements

Derivatives

The System permits the use of derivatives by its international equity and external fixed income managers. Examples of derivative instruments permitted, but not limited to, are foreign exchange contracts, financial futures, forwards, options, swaps and swaptions. All derivative instruments utilized are considered "Investment derivative instruments" as defined in GASB 53 "Accounting and Financial Reporting for Derivative Instruments".

The fair value balances and notional amounts of derivative instruments outstanding at December 31, 2019, classified by instrument in fair value are as follows:

The Wyoming Retirement System Derivative Instruments - Summary Disclosure					
As of 31 December 2019					
Category	Sub-Category	Currency	Bought/Sold	Fair Value	Notional Value
Futures	Equity Contracts			-	(37,317,562)
	Interest Rate Contracts			-	246,825,223
Options	Options			3,085	(17,713)
Rights/Warrants	Equity Contracts			186,292	NA
Swaps	Exchange Cleared Swaps			284,916	NA
	Swaps			(618,443)	NA
Forwards	Foreign Exchange Contracts	Australian dollar	Bought	9,019	203,894
	Foreign Exchange Contracts	Australian dollar	Sold	(210,453)	(8,617,039)
	Foreign Exchange Contracts	Brazilian real	Bought	74,093	1,705,877
	Foreign Exchange Contracts	Brazilian real	Sold	(7,988)	(444,134)
	Foreign Exchange Contracts	British pound sterling	Bought	97,645	2,228,343
	Foreign Exchange Contracts	British pound sterling	Sold	(213,289)	(40,109,872)
	Foreign Exchange Contracts	Canadian dollar	Bought	64,389	3,715,266
	Foreign Exchange Contracts	Canadian dollar	Sold	(2,020)	(304,401)
	Foreign Exchange Contracts	Chinese yuan Offshore	Sold	(14,473)	(621,244)
	Foreign Exchange Contracts	Chinese yuan renminbi	Sold	(45,416)	(1,899,523)
	Foreign Exchange Contracts	Columbian Peso	Sold	(1,982)	(30,787)
	Foreign Exchange Contracts	Euro	Bought	40,921	4,232,092
	Foreign Exchange Contracts	Euro	Sold	(667,762)	(69,099,626)
	Foreign Exchange Contracts	Hong Kong dollar	Sold	(11,508)	(4,648,599)
	Foreign Exchange Contracts	Indian rupee	Bought	4,293	1,282,982
	Foreign Exchange Contracts	Indonesian Rupiah	Bought	73,851	2,022,797
	Foreign Exchange Contracts	Japanese yen	Bought	(290)	130,005
	Foreign Exchange Contracts	Japanese yen	Sold	114,939	(43,678,175)
	Foreign Exchange Contracts	Malaysian Ringgit	Sold	(22,185)	(821,852)
	Foreign Exchange Contracts	Mexican peso	Bought	60,456	1,073,828
Foreign Exchange Contracts	New Taiwan dollar	Bought	474	17,286	
Foreign Exchange Contracts	New Zealand dollar	Bought	23,096	1,170,530	

Notes to the Basic Financial Statements

The Wyoming Retirement System Derivative Instruments - Summary Disclosure (continued)					
As of 31 December 2019 (continued)					
Category	Sub-Category	Currency	Bought/Sold	Fair Value	Notional Value
	Foreign Exchange Contracts	New Zealand dollar	Sold	(62,661)	(1,169,829)
	Foreign Exchange Contracts	Polish zloty	Bought	29,699	814,970
	Foreign Exchange Contracts	Polish zloty	Sold	(9,671)	(815,215)
	Foreign Exchange Contracts	Russian ruble	Bought	16,533	535,822
	Foreign Exchange Contracts	Russian ruble	Sold	(35,244)	(1,338,580)
	Foreign Exchange Contracts	South African Rand	Sold	(135,950)	(2,387,398)
	Foreign Exchange Contracts	South Korean won	Bought	(101)	45,856
	Foreign Exchange Contracts	South Korean won	Sold	(147,187)	(5,362,162)
	Foreign Exchange Contracts	Swedish krona	Sold	(5,670)	(3,346,695)
	Foreign Exchange Contracts	Thai Baht	Bought	535	54,872
	Foreign Exchange Contracts	Thai Baht	Sold	(5,866)	(513,497)
	Foreign Exchange Contracts	United States dollar	Bought	-	183,724,242
	Foreign Exchange Contracts	United States dollar	Sold	-	(18,739,808)
Total				\$(1,133,923)	\$208,500,175

Derivative Risks

Credit, interest rate and foreign currency risks affecting derivatives and other applicable investments are addressed in previous sections of Note 3. These risks, applicable to other fixed income and foreign investments, are not substantially different from the same risks affecting applicable derivative instruments.

In addition to the principal risks noted above, Forward Foreign Currencies, Credit Default Swaps and Interest Rate Swaps are also subject to counterparty risk. In general, counterparty risk is the risk of loss of an amount expected to be delivered under an agreement in the event of the default or bankruptcy of the counterparty. Generally, counterparty risk is controlled through dealing with a number of different counterparties reasonably deemed to be creditworthy by the investment manager.

Derivative – Contingency

Derivative instruments often contain credit-risk-related contingent features that could result in an immediate payment to the counterparty. For example, a material adverse change clause could provide the counterparty with the right to early terminate the derivative agreement. Alternatively, it could provide a basis for renegotiating the agreement if specific events occur, such as a downgrade of the entity's credit rating below investment grade. These provisions may include an obligation to post additional collateral in instances where the credit-risk contingent feature is triggered or the counterparty is provided the right to terminate the agreement early.

Contingent features that could result in an immediate payment from the counterparty include the event of a downgrade of the counterparty below a specified rating, commonly A-/A3. Additionally, the counterparty can request immediate payment in the event assets under management of the portfolio falls by more than 30% in a year or 15% in a month. It is important to note that these contingent features are not compulsory, rather they are voluntary.

Note 4. Fair Value Reporting (GASB 72)

Investment valuation

The Wyoming Retirement System categorizes the fair value measurements of its investments based on the hierarchy established by generally accepted accounting principles. The fair value hierarchy, which has three levels, is based on the valuation inputs used to measure an asset's fair value: Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. In addition, The Wyoming Retirement System has an internal valuation process, which is available upon request.

Investments

Investments, including derivative instruments that are not hedging derivatives, are measured at fair value on a recurring basis. Recurring fair value measurements are those that Governmental Accounting Standards Board (GASB) Statements require or permit in the statement of net position at the end of each reporting period. Fair value measurements are categorized based on the valuation inputs used to measure an asset's fair value: Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. Investments' fair value measurements are as follows at December 31, 2019 (in millions).

Investments	Fair Value Measurements in Millions Using:			
As of 31 December 2019	Total Fair Value	Level 1 Inputs	Level 2 Inputs	Level 3 Inputs
Fixed Income				
Corporate Bonds/Credit	\$243.67	\$-	\$242.49	\$1.18
Emerging Markets Debt	29.45	-	29.45	-
Mortgages/ABS	78.28	-	77.13	1.15
TIPS	137.18	-	132.26	4.92
Treasury/Agencies/Governments	930.71	-	930.71	-
Total Fixed Income	1,419.30	-	1,412.04	7.26
Equity				
Domestic	1,986.78	1,986.78	-	-
Emerging Markets	54.89	54.61	0.28	-
International Developed	740.54	740.45	-	0.09
Total Equity	2,782.21	2,781.83	0.28	0.09
Marketable Alternatives				
Directional Funds	108.65	106.56	2.09	-
Total Marketable Alternatives	108.65	106.56	2.09	-
Private Markets				
Real Estate	125.14	125.14	-	-
Total Private Markets	125.14	125.14	-	-
Derivatives				
FX	(0.99)	-	(0.99)	-
Options	0.01	0.01	-	-
Rights/Warrants	0.19	0.19	-	-
Swaps	1.27	-	1.27	-
Swap Liabilities	(1.61)	-	(1.61)	-
Total Derivatives	(1.13)	0.19	(1.33)	-
Total	\$4,434.16	\$3,013.73	\$1,413.08	\$7.35

Note: Numbers may not total 100.0% due to rounding.

Debt and equity securities, including marketable alternatives, categorized as Level 1 are valued based on prices quoted in active markets for those securities. Debt securities categorized as Level 2 are valued using a matrix pricing technique that values securities based on their relationship to benchmark quoted prices. Mortgage-backed securities categorized as Level 3 are valued using discounted cash flow techniques. Collateralized debt obligations categorized as Level 3 are valued using consensus pricing. Investment derivative instruments categorized as Level 2 are valued using market approaches that consider, as applicable, benchmark interest rates or foreign exchange rates.

Notes to the Basic Financial Statements

Private markets real estate investments categorized as level 1 relate to real estate investment trust funds that are valued based on prices quoted in active markets.

Opportunistic/Directional: This sub-asset class provides exposure to investment opportunities that will not typically be targeted by traditional managers. These funds will typically have a higher risk/return profile than more heavily hedged funds such as market neutral funds. Fund strategies in this subclass may include: Long/Short (net exposure > 50%), Multistrategy, Distressed Equity, Activist Equity and Convertible Arbitrage.

Enhanced Fixed Income: This sub-asset class provides exposure to fixed income investments that will not typically be targeted by traditional managers, such as marketable distressed fixed income securities. Fund strategies in this subclass may include: Distressed Credit and Fixed Income Arbitrage.

Absolute Return: This sub-asset class provides diversification to the total portfolio and strives to reduce total fund volatility. This area will include investments in a group of skill-based managers using a variety of strategies such as: Global Macro, Long/Short Equity (net exposure < 50%), Managed Futures, Event Driven Risk Arbitrage, Market Neutral, and Dedicated Short Bias. Please see Appendix IV in the Investment Policy Statement for detailed descriptions of the strategies. At any given point in time, the number of managers and types of investments and strategies being utilized may include the entire universe of available investment options. In addition, a variety of marketable alternative strategies may be utilized within this sub-asset class including, but not limited to hedged equity, convertible arbitrage, event driven, relative value, global fixed income/currencies, managed futures, and commodities.

Notes to the Basic Financial Statements

Investments in Entities That Calculate Net Asset Value Per Share

The fair values of investments in certain equity, fixed income, and marketable alternatives funds are based on the investments' net asset value (NAV) per share (or its equivalent) provided by the investee. The fair values of investments in certain private equity funds have been determined using recent observable transaction information for similar investments and nonbinding bids received from potential buyers of the investments. Such fair value measurements are as follows at December 31, 2019 (in millions):

Investments	Total NAV-Driven
As of 31 December 2019	Value in Millions
Fixed Income	
Corporate Bonds/Credit	\$113
Emerging Markets Debt	-
Mortgages/ABS	-
TIPS	-
Treasury/Agencies/Governments	-
Total Fixed Income	113
Equity:	
Domestic	469
Emerging Markets	611
International Developed	361
Total Equity	1,441
Marketable Alternatives:	
Absolute Return	496
Directional Funds	390
Directional Funds	520
Total Marketable Alternatives	1,407
Private Markets:	
Other Real Assets	564
Private Debt	181
Private Equity	446
Real Estate	145
Total Private Market	1,337
Total	\$4,298

Note: Numbers may not total 100.0% due to rounding.

Notes to the Basic Financial Statements

NAV - Redemption Frequency & Redemption Schedule		
Equities	Redemption Frequency	Notice Period
Abbott (WRS Opportunities Fund I and II)	15 Years	N/A
Acadian Em Small Cap	Daily	30 Days
Acadian Non-US SC	Daily	30 Days
Adams Street III	10 Years	N/A
AQR	Daily	Day Prior
Burgundy	Daily	Day Prior
Cantillon	Daily	Day Prior
Cevian European	3 Years (On Anniversary)	90 Days
Grove Street (Cloudveil Capital)	12 Years	N/A
Harding Loevner	Daily	7 Days
Highclere	Monthly	10 Business Days
Kiltearn	Monthly	6 Business Days
Nikko	Daily	Day Prior
Polunin	Monthly	7 Days
Sanderson	Monthly	10 Business Days
State Street EM	Daily	2 Days
ValueAct	5 Years (On Anniversary)	90 Days
Victory	Daily	Day Prior
Fixed Income		
Alliance Bernstein	Daily	3 Days
Altum	3 Years (On Anniversary)	90 Days
Beach Point	Daily	10 Days
Carl Marks Strategic Opportunities Fund II	2 Years	90 days
Centerbridge Partners	Quarterly	90 days
Dimensional	Daily	Day Prior
DoubleLine	Daily	Day Prior
Kayne Anderson Mezzanine	10 Years	N/A
KSL	10 Years	N/A
Oaktree Real Estate Debt	6 Years	N/A
Tennenbaum Ops Fund VI	10 years	N/A
Tennenbaum Sr. Loan Fund III	10 Years	N/A
TCI Real Estate Fund III	7 Years	N/A
Marketable Alternatives		
AQR	Monthly	15 Days
Bridgewater Optimal Portfolio	Quarterly	90 Days
Bridgewater Pure Alpha	Monthly	5 Business Days
Dorsal	Quarterly	45 Days
GMO GAAR	Monthly	14 Days
GMO SGM	Monthly	3 Days
IVA Global	Daily	Day Prior
LFL	Daily	30 Days
Naya	3 Years (On Anniversary)	65 Days
Pershing Square	Daily	Daily
TCI Fund	Quarterly	120 Days

Notes to the Basic Financial Statements

NAV - Redemption Frequency & Redemption Schedule (continued)

Private Real Assets		
Alinda Fund II	10 Years	N/A
Blackstone REP VIII	10 years	N/A
CenterSquare US RE	Daily	30 days
Hamilton Lane (Moran funds I and II)	10 Years	N/A
KAREP II	8 Years	N/A
KAREP III	8 Years	N/A
Macquarie Infra Fund II	10 Years	N/A
MS Prime Property Fund	Quarterly	90 days
Orion Fund I	7 Years	N/A
Ridgewood Energy Oil & Gas Fund II	10 Years	N/A
Ridgewood Energy Oil & Gas Fund III	10 Years	N/A

Note 5. Contributions Required and Contributions Made – Defined Benefit (Pension) Plans

Funding policies for most plans provide for monthly employer and employee contributions at statutorily determined rates that, expressed as percentages of annual covered payroll, are sufficient to accumulate assets to pay benefits when due. The Volunteer Firefighter, EMT, and Search & Rescue Pension Plan is based upon a fixed monthly member contribution of \$15.00 or \$30.00 per month plus an appropriation of a portion of state fire insurance premium taxes.

Actuarial valuations are prepared annually for all systems. In the event, based upon the results of the actuarial valuation, present statutory contribution requirements are insufficient to accumulate assets to pay benefits when due, the Wyoming Retirement Board, Volunteer Firefighter, EMT, and Search & Rescue Board, after approval by the Legislature, would revise statutory contribution requirements to maintain the actuarial integrity of the applicable System. For the year ended December 31, 2019, contributions were made in accordance with statutorily determined contribution requirements.

Note 6. Commitments

At December 31, 2019, WRS was committed to the future purchase of investments at an aggregate cost of \$1,394,877,945. As of December 31, 2019, WRS has funded \$2,311,235,132 in commitments, cumulatively.

Sub Asset Class	Unfunded Commitments
Other Real Assets	\$571,766,713
Private Debt	234,337,120
Private Equity	580,154,952
Real Estate	8,619,160
Total	\$1,394,877,945

Note 7. Master Trust

The System has entered into a master trust agreement with Northern Trust. In accordance with the terms of the agreement, in addition to holding System investments in custodial accounts, Northern Trust, as trustee, is authorized at the direction of the System or its investment managers to receive proceeds from investment sales and dividend and interest payments, to disburse funds for purchase of investments, to retire obligations upon maturity or redemption and to execute in the System's name whatever certification is necessary for other investment transactions. In March 2015, a master trust agreement transferred trustee responsibility to Northern Trust.

Notes to the Basic Financial Statements

Note 8. Risk Management and Contingencies

The nature of the System's operations makes it susceptible to lawsuits, legal actions, and other judgments. The System mitigates its risk of material loss from these situations through participation in the State of Wyoming self-insurance program. Wyoming Statute 1-41-103 created the State self-insurance fund to handle liability insurance claims brought against the State. The range of losses financed includes general liability, automobile liability, policy liability, medical malpractice liability and civil rights. The System had no significant changes in coverage from the prior year.

The State generally does not maintain reserves; losses are covered by a combination of appropriations from the State's general fund in the year in which the payment occurs and by assessing State agencies a pro rata share of anticipated claims expenditures for the fiscal year. The Department of Administration and Information estimates a liability for claims against the State as a whole including incurred but not reported claims (IBNR's) but does not make the estimate for each individual department of the State including the System. Consequently, no liability for these claims is reflected in the financial statements of the System. Management believes that any claims that may exist would be immaterial to the System.

At various times, claims and lawsuits are pending against the System. The System is of the opinion that the liability, if any, arising from such claims will not have a materially adverse effect on its financial statements.

Note 9. Capital Assets

The following is a summary of changes in capital assets:

	Balance 31-Dec-18	Additions	Deletions	Transfers	Balance 31-Dec-19
Leasehold Improvements	\$106,205	\$ -	\$ -	\$ -	\$106,205
Software	5,086,740	-	-	-	5,086,740
	5,192,945	-	-	-	5,192,945
Less accumulated depreciation	1,527,981	358,585	-	-	1,886,566
Capital asset, net	\$3,664,964	\$358,585	\$ -	\$ -	\$3,306,379

See Statement of Fiduciary Net Position page 34-35 and Statement of Changes in Fiduciary Net Position page 36-37. All disposals of Government Operations are completed at the state level. WRS is a division of the State.

Note 10. Net Pension Liability

Actuarial valuation of the ongoing Systems involved estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include the single discount rate, schedule of contributions, changes in net pension liability, net pension liability multiyear, contributions multiyear, investment returns multiyear and schedule of agency contributions and percentage. The schedule of Employers Net Pension Liability presents multi-year trend information about whether the plan fiduciary net positions are increasing or decreasing over time relative to the total pension liability. These schedules are presented in the Required Supplementary information section. The Total Pension Liability as of December 31, 2019, is based on the results of an actuarial valuation date of January 1, 2019, and rolled-forward using generally accepted actuarial procedures.

Notes to the Basic Financial Statements

The net pension liability (i.e., the retirement system's total pension liability determined in accordance with GASB 67 less the fiduciary net position) as of December 31, 2019, is as shown below.

Pension Plan	Total Pension Liability (\$)	Plan Fiduciary Net Position (\$)	Net Pension Liability (\$)	Plan Fiduciary Net Position as a % of Total Pension Liability	Covered Payroll (\$)	Net Pension Liability as a % of Covered Payroll
Public Employee:	10,140,485,123	7,790,558,842	2,349,926,281	76.83%	1,738,212,750	135.19%
State Patrol, Game and Fish Warden and Criminal Investigator Pension:	192,847,885	154,294,266	38,553,619	80.01%	23,118,850	166.76%
Volunteer Firefighter, EMT, and Search & Rescue:	114,898,938	86,913,518	27,985,420	75.64%	n/a	n/a
Paid Firemen's A:	358,534,824	97,959,431	260,575,393	27.32%	65,621	397,091.47%
Paid Firemen's B:	174,734,808	167,627,352	7,107,456	95.93%	28,028,382	25.36%
Judicial Pension Plan:	33,045,612	33,911,571	(865,959)	102.62%	6,602,303	-13.12%
Law Enforcement:	787,085,396	700,886,675	86,198,721	89.05%	155,851,473	55.31%
Air Guard Firefighters:	9,441,138	8,515,296	925,842	90.19%	2,341,404	39.54%

n/a - not applicable

Notes to the Basic Financial Statements

The table on this page is presented to show the actuarial methods and assumptions.

GASB 67 - Actuarial Methods and Assumptions

January 1, 2019

Assumptions and Methods	Public Employees Pension Plan	State Patrol Game & Fish Warden and Criminal Investigators Pension Plan	Volunteer Firefighter, EMT, and Search & Rescue Pension Plan	Paid Firemen's Pension Plan A	Paid Firemen's Pension Plan B	Judicial Pension Plan	Law Enforcement Pension Plan	Air Guard Firefighter Pension Plan
Valuation Date	1/1/2019	1/1/2019	1/1/2019	1/1/2019	1/1/2019	1/1/2019	1/1/2019	1/1/2019
Actuarial Cost Method	Entry Age Normal	Entry Age Normal	Entry Age Normal	Entry Age Normal	Entry Age Normal	Entry Age Normal	Entry Age Normal	Entry Age Normal
Amortization Method	Level Percent of Payroll Closed	Level Percent of Payroll Closed	Level Dollar Closed	Level Dollar Open	Level Percent of Payroll Closed	Level Percent of Payroll Closed	Level Percent of Payroll Closed	Level Percent of Payroll Closed
Remaining Amortization Period	29	29	29	10	29	15	29	29
Asset Valuation Method	5-year smoothed market	5-year smoothed market	5-year smoothed market	5-year smoothed market	5-year smoothed market	5-year smoothed market	5-year smoothed market	5-year smoothed market
Actual Assumptions:								
Investment Rate of Return	7%	7%	7%	7%	7%	7%	7%	7%
Projected Salary Increases includes inflation	2.50% to 6.50%	2.50% to 8.50%	n/a	4.5%	4.50% to 7.50%	4.75% to 8.75%	4.75% to 8.75%	4.75% to 8.75%
Assumed Inflation Rate	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%
Mortality	*	*	*	*	*	*	*	*

* Mortality:

Pre-Retirement Mortality:

RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Post-Retirement Mortality:

RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality:

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Note: Significant assumptions are based on an experience study that covered a five-year period ending December 31, 2016.

Notes to the Basic Financial Statements

Discount Rate

The Discount Rate for all plans with the exception of the Paid Firemen's Pension Plan A was 7.00%. The Discount Rate for the Paid Fireman's Pension Plan A was 3.09%. The Long-Term Expected Rate of Return used to measure the total pension liability for all plans was 7.00%. The projection of cash flows used to determine the discount rate assumed contributions from participating employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required rates under Wyoming State Statutes. Based on those assumptions, the Systems' fiduciary net position was projected to be available to make all the projected future benefit payments of current plan members. Therefore, the long term expected rate of return on pension plan investments was applied to all periods of projected benefit payment to determine the total pension liability.

	Single Discount Rate	Long-Term Expected Rate of Return	Long-Term Municipal Bond Rate*	Last year ending December 31 in the 2019 to 2118 projection period for which projected benefit payments are fully funded
Public Employee Pension Plan:	7.00%	7.00%	2.75%	2118
State Patrol, Game and Fish Warden and Criminal Investigator Pension Plan:	7.00%	7.00%	2.75%	2118
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan:	7.00%	7.00%	2.75%	2118
Paid Firemen's Pension Plan A:	3.09%	7.00%	2.75%	2029
Paid Firemen's Pension Plan B:	7.00%	7.00%	2.75%	2118
Judicial Pension Plan:	7.00%	7.00%	2.75%	2118
Law Enforcement Pension Plan:	7.00%	7.00%	2.75%	2118
Air Guard Firefighters Pension Plan:	7.00%	7.00%	2.75%	2118

*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of December 31, 2019. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.

In accordance with GASB 67 regarding the disclosure of the sensitivity of the net pension liability to changes in the discount rate, the table below presents the net pension liability calculated using the discount rate as stated, as well as what the net pension liability would be if it were calculated using a discount rate that is 1.00% lower or 1.00% higher than the current rate.

	Current Single Discount Rate		
	1% Decrease	Assumption	1% Increase
	6.00%	7.00%	8.00%
Public Employee Pension Plan:	\$3,550,342,189	\$2,349,926,281	\$1,348,068,781
State Patrol, Game & Gish Warden and Criminal Investigator Pension Plan:	62,695,798	38,553,619	18,673,307
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan:	42,032,167	27,985,420	16,374,901
Paid Firemen's Pension Plan B:	31,459,950	7,107,456	(13,089,140)
Judicial Pension Plan:	2,574,413	(865,959)	(3,829,426)
Law Enforcement Pension Plan:	192,166,204	86,198,721	(427,735)
Air Guard Firefighter Pension Plan:	2,262,809	925,842	(170,922)
	1% Decrease	Assumption	1% Increase
	2.09%	3.09%	4.09%
Paid Firemen's Pension Plan A:	315,783,695	260,575,393	216,318,321

Notes to the Basic Financial Statements

The following table represents the investment return for the year ended December 31, 2019. The plans assume a long-term investment rate of return of 7.00%. The long-term rate of return is determined through a 4.75% net real rate of return and an inflation rate of 2.25%. The following table represents a comparison of the annual money-weighted rate of return, net of investment expenses compared to the expected net real rate of return.

	Annual Money-Weighted Rate of Return, (net of investment expenses) for the Fiscal Year Ended December 31, 2019	Expected Rate of Return (net of investment expenses)
Public Employee Pension Plan:	18.72%	7.00%
State Patrol, Game and Fish Warden and Criminal Investigator Pension Plan:	18.72%	7.00%
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan:	18.72%	7.00%
Paid Firemen's Pension Plan A:	18.72%	7.00%
Paid Firemen's Pension Plan B:	18.72%	7.00%
Judicial Pension Plan:	18.72%	7.00%
Law Enforcement Pension Plan:	18.72%	7.00%
Air Guard Firefighters Pension Plan:	18.72%	7.00%

The assumed asset allocation of the plan's portfolio, the long term expected rate of return for each asset class and the expected rate of return is presented arithmetically and geometrically below over a 20-year period.

Notes to the Basic Financial Statements

Schedule of Investment Returns

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate arithmetic expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These real rates of return are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each major asset class that is included in the pension plans target asset allocation as of January 1, 2019, these best estimates are summarized in the following table:

Schedule of Investment Returns	Target Allocation	Arithmetic Real Return	Arithmetic Nominal Return	Geometric Real Return	Geometric Nominal Return
Tactical Cash	2.00%	-0.19%	2.41%	-0.20%	2.40%
Fixed Income	21.00%	1.67%	4.27%	1.32%	3.92%
Core Plus	5.00%	0.48%	3.08%	0.40%	3.00%
US Government	9.00%	0.34%	2.94%	0.33%	2.93%
Opportunistic Credit	4.00%	2.96%	5.56%	2.39%	4.99%
Private Debt	3.00%	5.96%	8.56%	4.40%	7.00%
Equity	48.50%	7.42%	10.02%	5.43%	8.03%
US Equity	21.20%	6.25%	8.85%	4.80%	7.40%
Developed International	14.20%	7.11%	9.71%	5.30%	7.90%
Emerging Markets	8.60%	9.38%	11.98%	6.50%	9.10%
Private Equity	4.50%	10.16%	12.76%	6.78%	9.38%
Marketable Alternatives	19.00%	4.33%	6.93%	3.46%	6.06%
Private Real Assets	9.50%	5.58%	8.18%	4.46%	7.06%
Private Natural Resources	2.5-7.5%	8.42%	11.02%	6.21%	8.81%
Private Infrastructure	2.5-7.5%	5.08%	7.68%	4.10%	6.70%
Real Estate	2.5-7.5%	4.31%	6.91%	3.70%	6.30%
Total	100.00%	5.30%	7.90%	3.99%	6.59%

The assumed asset allocation of the plan's portfolio, the long-term expected rate of return for each asset class and the expected rate of return is presented arithmetically and geometrically above over a 20-year period.

The figures in the above table were supplied by Meketa Investment Group, the investment consulting firm for the Wyoming Retirement System.

Notes to the Basic Financial Statements

Disclosure of Subsequent Events:

Legislative Changes

Subsequent to the December 31, 2019 measurement date for this financial report, the Wyoming Legislature convened for their scheduled 2020 session. During this session the Legislature passed one bill which will modestly impact the Wyoming Retirement System (WRS).

Senate File 0092 (Senate Enrolled Act 43) provides for increases to contributions to the Volunteer Firefighter, EMT and Search and Rescue Pension Account by transferring an additional 20% of the fire insurance premium tax revenue from the General Fund. The bill increases the percentage of tax from 80% to 100%. In addition, the bill increases member contribution rates from the current \$15.00 per month for firefighters and EMT to \$18.75 per month and from \$30.00 per month to \$37.50 per month for Search and Rescue Members. According to Wyoming Retirement System's actuary, this bill will result in achieving 100% funding status for the pension fund by 2034 instead of the current estimate of 2042.

Coronavirus (COVID-19) Outbreak

Subsequent to year-end, the United States and global markets experienced significant declines in value resulting from uncertainty caused by the worldwide coronavirus pandemic. The World Health Organization declared the COVID-19 outbreak a public health emergency on January 30, 2020. The estimate of its financial effect is unknown at this time as the duration and full effects of the COVID-19 outbreak are also unknown. The Wyoming Retirement System (WRS) has continued operations and its retirement benefits are built on long-term strategies. The Wyoming Retirement System is closely monitoring its investment portfolio as well as its liquidity and is actively working to minimize the impact of these declines. WRS financial statements do not include adjustments to fair value resulting from the declines.

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Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear						
Public Employee Pension Plan						
Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$194,455,298	\$195,575,014	\$201,824,345	\$219,893,113	\$217,488,957	\$213,059,299
Interest on the Total Pension Liability	676,902,286	658,459,157	641,429,003	664,368,366	638,943,600	614,848,444
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	(7,044,256)	(49,213,548)	(56,701,091)	(43,790,701)	(66,191,620)	-
Assumption Changes	-	-	290,801,601	-	-	-
Benefit Payments	(579,179,480)	(547,913,244)	(516,837,260)	(483,482,106)	(450,589,769)	(418,274,815)
Refunds	(21,308,205)	(18,114,423)	(18,654,997)	(18,127,974)	(19,365,045)	(17,821,799)
Net Change in Total Pension Liability	263,825,643	238,792,956	541,861,601	338,860,698	320,286,123	391,811,129
Total Pension Liability - Beginning	9,876,659,480	9,637,866,524	9,096,004,923	8,757,144,225	8,436,858,102	8,045,046,973
Total Pension Liability - Ending (a)	10,140,485,123	9,876,659,480	9,637,866,524	9,096,004,923	8,757,144,225	8,436,858,102
Plan Fiduciary Net Position						
Employer Contributions	\$157,385,096	\$147,632,510	\$148,746,669	\$151,488,715	\$144,622,373	\$127,929,930
Employee Contributions	157,610,787	151,130,515	149,752,251	152,422,538	153,529,134	137,144,565
Pension Plan Net Investment Income	1,251,518,669	(252,571,153)	923,878,089	454,712,993	(67,155,642)	318,184,952
Benefit Payments	(579,179,480)	(547,913,244)	(516,837,260)	(483,482,106)	(450,589,769)	(418,274,815)
Refunds	(21,308,205)	(18,114,423)	(18,654,997)	(18,127,974)	(19,365,045)	(17,821,799)
Pension Plan Administrative Expense	(6,527,091)	(7,033,951)	(6,551,109)	(5,993,529)	(5,097,818)	(5,182,863)
Other	(309,531)	(287,669)	(312,336)	(312,336)	(312,704)	5,539,339
Net Change in Plan Fiduciary Net Position	959,190,245	(527,157,415)	680,021,307	250,708,301	(244,369,471)	147,519,309
Plan Fiduciary Net Position - Beginning	6,831,368,597	7,358,526,012	6,678,504,705	6,427,796,404	6,672,165,875	6,524,646,566
Plan Fiduciary Net Position - Ending (b)	7,790,558,842	6,831,368,597	7,358,526,012	6,678,504,705	6,427,796,404	6,672,165,875
Net Pension Liability - Ending (a) - (b)	2,349,926,281	3,045,290,883	2,279,340,512	2,417,500,218	2,329,347,821	1,764,692,227
Plan Fiduciary Net Position as a Percentage of Total Pension Liability						
	76.83%	69.17%	76.35%	73.42%	73.40%	79.08%
Covered Payroll						
	\$1,738,212,750	\$1,741,354,609	\$1,776,377,586	\$1,782,905,215	\$1,744,073,882	\$1,709,412,443
Projected Valuation Payroll						
	\$1,781,668,069	\$1,784,888,475	\$1,820,787,026	\$1,858,678,687	\$1,818,197,022	\$1,782,062,471
Net Pension Liability as a Percentage of Covered Payroll						
	135.19%	174.88%	128.31%	135.59%	133.56%	103.23%

Note: Information not available prior to 2014

Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear

State Patrol, Game & Fish, Warden & Criminal Investigator Pension Plan

Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$4,614,951	\$5,078,748	\$4,764,423	\$7,631,559	\$7,511,738	\$5,276,236
Interest on the Total Pension Liability	12,833,018	12,084,646	12,129,167	12,213,078	11,513,094	11,490,234
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	1,453,141	(2,017,522)	(4,722,830)	62,315	(1,821,706)	-
Assumption Changes	(15,224,856)	13,137,489	(22,946,444)	(5,188,326)	32,535,213	-
Benefit Payments	(10,843,842)	(10,260,821)	(9,795,108)	(9,396,540)	(8,926,088)	(8,364,762)
Refunds	(288,795)	(351,230)	(509,361)	(323,328)	(120,906)	(368,093)
Net Change in Total Pension Liability	(7,456,383)	17,671,310	(21,080,153)	4,998,758	40,691,345	8,033,615
Total Pension Liability - Beginning	200,304,268	182,632,958	203,713,111	198,714,353	158,023,008	149,989,393
Total Pension Liability - Ending (a)	192,847,885	200,304,268	182,632,958	203,713,111	198,714,353	158,023,008
Plan Fiduciary Net Position						
Employer Contributions	\$3,639,164	\$3,529,976	\$3,552,582	\$3,574,065	\$3,355,688	\$3,006,277
Employee Contributions	4,196,524	3,796,060	3,485,756	3,678,081	3,524,286	3,150,559
Pension Plan Net Investment Income	24,466,565	(4,908,329)	17,623,232	8,622,074	(1,199,475)	5,900,708
Benefit Payments	(10,843,842)	(10,260,821)	(9,795,108)	(9,396,540)	(8,926,088)	(8,364,762)
Refunds	(288,795)	(351,230)	(509,361)	(323,328)	(120,906)	(368,093)
Pension Plan Administrative Expense	(138,770)	(139,377)	(128,991)	(114,832)	(95,918)	(96,479)
Other	(6,039)	(5,536)	(5,897)	(5,897)	(5,850)	229,589
Net Change in Plan Fiduciary Net Position	21,024,807	(8,339,257)	14,222,213	6,033,623	(3,468,263)	3,457,799
Plan Fiduciary Net Position - Beginning	133,269,459	141,608,716	127,386,503	121,352,880	124,821,143	121,363,344
Plan Fiduciary Net Position - Ending (b)	154,294,266	133,269,459	141,608,716	127,386,503	121,352,880	124,821,143
Net Pension Liability - Ending (a) - (b)	38,553,619	67,034,809	41,024,242	76,326,608	77,361,473	33,201,865
Plan Fiduciary Net Position as a Percentage of Total Pension Liability						
	80.01%	66.53%	77.54%	62.53%	61.07%	78.99%
Covered Payroll						
	\$23,118,850	\$23,063,176	\$23,641,495	\$23,636,482	\$22,196,930	\$21,817,686
Projected Valuation Payroll						
	\$23,696,821	\$23,639,756	\$24,646,258	\$24,641,033	\$23,140,300	\$22,744,938
Net Pension Liability as a Percentage of Covered Payroll						
	166.76%	290.66%	173.53%	322.92%	348.52%	152.18%

Note: Information not available prior to 2014

Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear					
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan					
Fiscal year ending December 31,	2019	2018	2017	2016	2015
Total Pension Liability					
Service Cost	\$1,432,649	\$1,426,154	\$1,412,440	\$1,285,552	\$1,253,883
Interest on the Total Pension Liability	7,685,536	7,474,042	7,372,254	7,761,646	7,520,888
Benefit Changes	-	-	-	-	21,809,884
Difference between Expected and Actual Experience	441,209	(1,397,503)	(3,538,907)	(479,308)	211,035
Assumption Changes	-	-	5,273,789	-	(472,252)
Benefit Payments	(6,466,593)	(6,101,659)	(5,780,647)	(5,506,699)	(4,832,911)
Refunds	(40,182)	(44,163)	(33,242)	(35,162)	(34,719)
Net Change in Total Pension Liability	3,052,619	1,356,871	4,705,687	3,026,029	25,455,808
Total Pension Liability - Beginning	111,846,318	110,489,447	105,783,760	102,757,731	77,723,993
Total Pension Liability - Ending (a)	114,898,937	111,846,318	110,489,447	105,783,760	102,757,731
Plan Fiduciary Net Position					
Employer Contributions	\$3,118,824	\$2,959,943	\$3,290,994	\$3,198,930	\$2,238,612
Employee Contributions	437,255	434,522	425,592	459,363	417,406
Pension Plan Net Investment Income	13,701,406	(2,782,682)	10,035,753	4,939,925	(675,297)
Benefit Payments	(6,466,593)	(6,101,659)	(5,780,647)	(5,506,699)	(4,832,911)
Refunds	(40,182)	(44,163)	(33,242)	(35,162)	(34,719)
Pension Plan Administrative Expense	(89,451)	(91,195)	(88,835)	(80,904)	(73,412)
Other*	(3,455)	(3,201)	(3,453)	(3,453)	(3,470)
Net Change in Plan Fiduciary Net Position	10,657,804	(5,628,435)	7,846,162	2,972,000	(2,963,791)
Plan Fiduciary Net Position - Beginning	76,255,713	81,884,148	74,037,986	71,065,986	74,029,777
Plan Fiduciary Net Position - Ending (b)	86,913,517	76,255,713	81,884,148	74,037,986	71,065,986
Net Pension Liability - Ending (a) - (b)	27,985,420	35,590,605	28,605,299	31,745,774	31,691,745
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	75.64%	68.18%	74.11%	69.99%	69.16%
Covered Payroll	N/A See Note 2	N/A See Note 2	N/A See Note 2	N/A See Note 2	N/A See Note 2
Net Pension Liability as a Percentage of Covered Payroll	N/A See Note 2	N/A See Note 2	N/A See Note 2	N/A See Note 2	N/A See Note 2

*Other includes other funding sources and depreciation expenses.

Note: Information not available prior to 2015

Note 2: This plan is for volunteers and payroll is not applicable.

Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear

Paid Firemen's Pension Plan A

Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$40,886	\$61,278	\$122,812	\$147,314	\$162,541	\$188,951
Interest on the Total Pension Liability	10,996,219	12,801,237	12,582,433	12,906,407	12,910,372	13,337,846
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	(3,107,578)	(1,673,790)	1,188,594	(1,825,288)	(2,479,196)	-
Assumption Changes	42,477,504	(11,600,861)	41,599,453	(5,166,271)	9,056,601	99,327,064
Benefit Payments	(16,093,422)	(15,788,064)	(15,410,878)	(15,075,912)	(14,824,715)	(14,581,980)
Refunds	-	-	-	-	-	-
Net Change in Total Pension Liability	34,313,609	(16,200,200)	40,082,414	(9,013,750)	4,825,603	98,271,881
Total Pension Liability - Beginning	324,221,215	340,421,415	300,339,001	309,352,751	304,527,148	206,255,267
Total Pension Liability - Ending (a)	358,534,824	324,221,215	340,421,415	300,339,001	309,352,751	304,527,148
Plan Fiduciary Net Position						
Employer Contributions	\$-	\$-	\$-	\$-	\$-	\$-
Employee Contributions	-	-	-	-	-	-
Pension Plan Net Investment Income	16,923,518	(3,580,279)	15,351,989	8,160,117	(1,107,007)	7,064,066
Benefit Payments	(16,093,422)	(15,788,064)	(15,410,878)	(15,075,912)	(14,824,715)	(14,581,980)
Refunds	-	-	-	-	-	-
Pension Plan Administrative Expense	(87,238)	(98,669)	(108,773)	(110,274)	(102,903)	(113,705)
Other	(4,405)	(4,562)	(6,020)	(6,019)	(6,559)	(1,701)
Net Change in Plan Fiduciary Net Position	738,453	(19,471,574)	(173,682)	(7,032,088)	(16,041,184)	(7,633,320)
Plan Fiduciary Net Position - Beginning	97,220,978	116,692,552	116,866,234	123,898,322	139,939,506	147,572,826
Plan Fiduciary Net Position - Ending (b)	97,959,431	97,220,978	116,692,552	116,866,234	123,898,322	139,939,506
Net Pension Liability - Ending (a) - (b)	260,575,393	227,000,237	223,728,863	183,472,767	185,454,429	164,587,642
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	27.32%	29.99%	34.28%	38.91%	40.05%	45.95%
Covered Payroll	\$65,621	\$134,155	\$195,221	\$195,221	\$179,486	\$198,404
Projected Valuation Payroll	\$65,621	\$134,155	\$195,221	\$195,221	\$179,486	\$198,404
Net Pension Liability as a Percentage of Covered Payroll	397,091.47%	169,207.64%	114,602.87%	93,982.30%	103,325.47%	82,955.64%

Note: Information not available prior to 2014

Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear

Paid Firemen's Pension Plan B

Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$6,563,232	\$6,259,734	\$8,912,364	\$7,422,919	\$7,421,040	\$5,367,034
Interest on the Total Pension Liability	11,411,054	10,593,553	9,917,806	9,744,190	8,937,063	8,194,197
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	419,684	(6,466,191)	(2,190,045)	(93,703)	120,064	-
Assumption Changes	-	(29,804,719)	16,738,920	(1,498,059)	20,165,038	-
Benefit Payments	(5,921,008)	(5,474,014)	(5,054,595)	(4,343,944)	(3,712,240)	(3,090,522)
Refunds	(35,091)	(64,091)	(120,137)	(71,599)	(75,062)	(62,762)
Net Change in Total Pension Liability	12,437,871	(24,955,728)	28,204,313	11,159,804	32,855,903	10,407,947
Total Pension Liability - Beginning	162,296,937	187,252,665	159,048,352	147,888,548	115,032,645	104,624,698
Total Pension Liability - Ending (a)	174,734,808	162,296,937	187,252,665	159,048,352	147,888,548	115,032,645
Plan Fiduciary Net Position						
Employer Contributions	\$3,516,198	\$3,356,547	\$3,230,196	\$3,370,961	\$3,273,668	\$3,184,045
Employee Contributions	2,787,467	2,821,872	2,773,651	2,858,418	2,924,752	2,414,435
Pension Plan Net Investment Income	26,111,099	(5,197,809)	17,838,337	8,477,077	(1,158,548)	5,303,618
Benefit Payments	(5,921,008)	(5,474,014)	(5,054,595)	(4,343,944)	(3,712,240)	(3,090,522)
Refunds	(35,091)	(64,091)	(120,137)	(71,599)	(75,062)	(62,762)
Pension Plan Administrative Expense	(138,634)	(140,922)	(130,931)	(112,132)	(90,438)	(87,431)
Other	(6,402)	(5,708)	(5,700)	(5,700)	(5,444)	264,234
Net Change in Plan Fiduciary Net Position	26,313,629	(4,704,125)	18,530,821	10,173,081	1,156,688	7,925,617
Plan Fiduciary Net Position - Beginning	141,313,723	146,017,848	127,487,027	117,313,946	116,157,258	108,231,641
Plan Fiduciary Net Position - Ending (b)	167,627,352	141,313,723	146,017,848	127,487,027	117,313,946	116,157,258
Net Pension Liability - Ending (a) - (b)	7,107,456	20,983,214	41,234,817	31,561,325	30,574,602	(1,124,613)
Plan Fiduciary Net Position as a Percentage of Total Pension Liability						
	95.93%	87.07%	77.98%	80.16%	79.33%	100.98%
Covered Payroll						
	\$28,028,382	\$26,811,084	\$28,209,686	\$26,390,481	\$25,986,443	\$24,552,559
Projected Valuation Payroll						
	\$28,729,092	\$28,168,395	\$29,408,598	\$27,512,076	\$27,090,867	\$25,596,043
Net Pension Liability as a Percentage of Covered Payroll						
	25.36%	78.26%	146.17%	119.59%	117.66%	-4.58%

Note: Information not available prior to 2014

Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear

Judicial Pension Plan

Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$1,529,896	\$1,509,964	\$1,470,668	\$1,263,270	\$1,263,278	\$1,186,595
Interest on the Total Pension Liability	2,168,200	2,037,989	1,880,909	1,793,779	1,659,184	1,539,910
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	(112,158)	183,937	(620,955)	(229,282)	(372,108)	-
Assumption Changes	-	-	2,258,668	-	-	-
Benefit Payments	(1,720,417)	(1,454,953)	(1,166,423)	(981,321)	(931,621)	(775,805)
Refunds	-	-	-	-	-	-
Net Change in Total Pension Liability	1,865,521	2,276,937	3,822,867	1,846,446	1,618,733	1,950,700
Total Pension Liability - Beginning	31,180,091	28,903,154	25,080,287	23,233,841	21,615,108	19,664,408
Total Pension Liability - Ending (a)	33,045,612	31,180,091	28,903,154	25,080,287	23,233,841	21,615,108
Plan Fiduciary Net Position						
Employer Contributions	\$1,060,477	\$960,478	\$949,300	\$925,971	\$920,867	\$916,598
Employee Contributions	1,028,339	610,818	603,602	588,791	585,545	582,831
Pension Plan Net Investment Income	5,224,148	(1,038,644)	3,549,526	1,679,033	(228,304)	1,038,134
Benefit Payments	(1,720,417)	(1,454,953)	(1,166,423)	(981,321)	(931,621)	(775,805)
Refunds	-	-	-	-	-	-
Pension Plan Administrative Expense	(27,764)	(28,405)	(25,315)	(22,090)	(17,833)	(17,177)
Other*	(1,284)	(1,146)	(2,313)	(1,128)	(1,072)	(244)
Net Change in Plan Fiduciary Net Position	5,563,499	(951,852)	3,908,377	2,189,256	327,582	1,744,337
Plan Fiduciary Net Position - Beginning	28,348,072	29,299,924	25,391,547	23,202,291	22,874,709	21,130,312
Plan Fiduciary Net Position - Ending (b)	33,911,571	28,348,072	29,299,924	25,391,547	23,202,291	22,874,709
Net Pension Liability - Ending (a) - (b)	(865,959)	2,832,019	(396,770)	(311,260)	31,550	(1,259,601)
Plan Fiduciary Net Position as a Percentage of Total Pension Liability						
	102.62%	90.92%	101.37%	101.24%	99.86%	105.83%
Covered Payroll						
	\$6,602,303	\$6,558,029	\$6,386,001	\$6,384,628	\$6,363,028	\$5,989,181
Projected Valuation Payroll						
	\$6,866,395	\$6,820,351	\$6,641,441	\$6,624,052	\$6,601,641	\$6,213,775
Net Pension Liability as a Percentage of Covered Payroll						
	-13.12%	43.18%	-6.21%	-4.88%	0.50%	-21.03%

Note: Information not available prior to 2014

Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear

Law Enforcement Pension Plan

Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$22,866,557	\$26,657,347	\$23,241,982	\$23,339,214	\$22,790,835	\$22,432,708
Interest on the Total Pension Liability	51,970,908	47,238,165	47,200,725	45,945,359	43,444,727	40,636,242
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	19,861,777	(7,328,715)	(6,691,047)	(3,501,453)	1,710,375	-
Assumption Changes	(111,460,988)	94,255,216	51,421,521	-	-	-
Benefit Payments	(34,850,971)	(32,013,552)	(29,621,411)	(27,873,802)	(25,459,574)	(23,209,837)
Refunds	(2,425,983)	(3,970,912)	(4,041,082)	(3,491,089)	(4,659,711)	(4,110,605)
Net Change in Total Pension Liability	(54,038,700)	124,837,549	81,510,688	34,418,229	37,826,652	35,748,508
Total Pension Liability - Beginning	841,124,096	716,286,547	634,775,859	600,357,630	562,530,978	526,782,470
Total Pension Liability - Ending (a)	787,085,396	841,124,096	716,286,547	634,775,859	600,357,630	562,530,978
Plan Fiduciary Net Position						
Employer Contributions	\$14,270,844	\$13,781,011	\$13,614,406	\$13,730,305	\$12,706,883	\$13,308,281
Employee Contributions	14,671,686	13,846,377	13,691,494	14,442,190	15,397,475	13,314,132
Pension Plan Net Investment Income	110,793,173	(22,169,139)	77,946,645	37,782,650	(5,371,824)	24,853,352
Benefit Payments	(34,850,971)	(32,013,552)	(29,621,411)	(27,873,802)	(25,459,574)	(23,209,837)
Refunds	(2,425,983)	(3,970,912)	(4,041,082)	(3,491,089)	(4,659,711)	(4,110,605)
Pension Plan Administrative Expense	(596,769)	(639,428)	(580,221)	(518,486)	(417,893)	(408,470)
Other	(27,143)	(24,638)	(51,644)	(25,522)	(24,983)	797,291
Net Change in Plan Fiduciary Net Position	101,834,837	(31,190,281)	70,958,187	34,046,246	(7,829,627)	24,544,144
Plan Fiduciary Net Position - Beginning	599,051,838	630,242,119	559,283,932	525,237,686	533,067,313	508,523,169
Plan Fiduciary Net Position - Ending (b)	700,886,675	599,051,838	630,242,119	559,283,932	525,237,686	533,067,313
Net Pension Liability - Ending (a) - (b)	86,198,721	242,072,258	86,044,428	75,491,927	75,119,944	29,463,665
Plan Fiduciary Net Position as a Percentage of Total Pension Liability						
	89.05%	71.22%	87.99%	88.11%	87.49%	94.76%
Covered Payroll						
	\$155,851,473	\$151,898,695	\$153,547,078	\$154,779,198	\$150,399,739	\$147,790,833
Projected Valuation Payroll						
	\$159,747,760	\$155,696,162	\$160,072,828	\$161,357,314	\$156,791,728	\$154,071,943
Net Pension Liability as a Percentage of Covered Payroll						
	55.31%	159.36%	56.04%	48.77%	49.95%	19.94%

Note: Information not available prior to 2014

Required Supplementary Information - Changes In Net Pension Liability

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS - Multiyear

Air Guard Firefighter Pension Plan

Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$317,202	\$294,146	\$272,169	\$337,474	\$331,123	\$276,305
Interest on the Total Pension Liability	624,153	599,634	563,514	554,448	517,889	455,677
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	1,751	161,615	272,060	65,370	201,096	-
Assumption Changes	-	-	311,427	-	-	-
Benefit Payments	(442,888)	(385,232)	(351,120)	(290,609)	(168,220)	(119,541)
Refunds	(69,971)	(213,647)	(39,723)	(411,989)	(20,849)	(6,886)
Net Change in Total Pension Liability	430,247	456,516	1,028,327	254,694	861,039	605,555
Total Pension Liability - Beginning	9,010,891	8,554,376	7,526,049	7,271,355	6,410,316	5,804,761
Total Pension Liability - Ending (a)	9,441,138	9,010,891	8,554,376	7,526,049	7,271,355	6,410,316
Plan Fiduciary Net Position						
Employer Contributions	\$158,176	\$159,583	\$156,263	\$136,768	\$158,319	\$142,437
Employee Contributions	369,907	445,101	367,485	376,685	405,026	335,763
Pension Plan Net Investment Income	1,300,461	(253,859)	902,109	431,043	(55,411)	260,772
Benefit Payments	(442,888)	(385,232)	(351,120)	(290,609)	(168,220)	(119,541)
Refunds	(69,971)	(213,647)	(39,723)	(411,989)	(20,849)	(6,886)
Pension Plan Administrative Expense	(6,972)	(7,141)	(6,431)	(5,731)	(4,637)	(4,312)
Other	(327)	(292)	(602)	(301)	(276)	1,085
Net Change in Plan Fiduciary Net Position	1,308,386	(255,487)	1,027,981	235,866	313,952	609,318
Plan Fiduciary Net Position - Beginning	7,206,910	7,462,397	6,434,416	6,198,550	5,884,598	5,275,280
Plan Fiduciary Net Position - Ending (b)	8,515,296	7,206,910	7,462,397	6,434,416	6,198,550	5,884,598
Net Pension Liability - Ending (a) - (b)	925,842	1,803,981	1,091,979	1,091,633	1,072,805	525,718
Plan Fiduciary Net Position as a Percentage of Total Pension Liability						
	90.19%	79.98%	87.23%	85.50%	85.25%	91.80%
Covered Payroll						
	\$2,341,404	\$2,154,544	\$1,975,631	\$2,151,997	\$2,124,296	\$1,731,731
Projected Valuation Payroll						
	\$2,399,940	\$2,208,407	\$2,059,595	\$2,243,456	\$2,214,578	\$1,805,329
Net Pension Liability as a Percentage of Covered Payroll						
	39.54%	83.73%	55.27%	50.73%	50.50%	30.36%

Note: Information not available prior to 2014

Required Supplementary Information - Investment Returns, Contributions

Required Supplementary Information – Investment Returns, Contributions

WRS’s success in achieving the 7.00% assumed investment return objective is evaluated on an ongoing basis over reasonably long periods of time (5 to 7 years). The reason for the long-term focus on the return objective is to preclude the temptation towards overreaction to short-term market events that have little to no bearing on long-term asset/liability management. The Board must reconcile its need to evaluate investment policy implementation decisions over shorter periods while maintaining longer-term focus on managing and measuring the portfolio’s overall performance relative to the long-term return objective.

Asset Class	Target Allocation	Long-Term Expected Geometric Real Rate of Return	Long-Term Expected Arithmetic Real Rate of Return
Cash	2.00%	-0.20%	-0.19%
Fixed Income	21.00%	1.32%	1.67%
Equity	48.50%	5.43%	7.42%
Marketable Alternatives	19.00%	3.46%	4.33%
Private Real Assets	9.50%	4.46%	5.58%
Total	100.00%	3.99%	5.30%

Schedule of Investment Returns						
Last 10 Fiscal (Calendar) Years						
	2019	2018	2017	2016	2015	2014
Annual Money-Weighted Rate of Return, Net of Investment Expenses	18.72%	-3.50%	14.20%	7.53%	-0.44%	4.74%

*This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, WRS will present information for those years for which information is available.

Changes in Actuarial Assumptions and Methods

The current assumptions used in the actuarial valuation were adopted by the Board effective August 23, 2017 and were first utilized with the January 1, 2019 valuation report. There have been no actuarial assumption changes or methods since the prior valuation for all plans.

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Required Supplementary Information - Schedule of Contributions

SCHEDULE OF CONTRIBUTIONS MULTIYEAR

LAST 10 FISCAL YEARS

FY Ending December 31,

	Actuarially Determined Contribution	Actual Contribution*	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
Public Employee Pension Plan					
2014	\$183,086,430	\$129,627,747	\$53,458,683	\$1,709,412,443	7.58%
2015	168,411,742	144,622,373	53,789,369	1,744,073,882	8.29%
2016	174,211,753	151,488,715	22,723,038	1,782,905,215	8.50%
2017	167,125,230	148,746,669	18,378,561	1,776,377,586	8.37%
2018	191,677,662	147,632,510	44,045,152	1,741,354,609	8.48%
2019	207,518,684	157,385,096	50,133,588	1,738,212,750	9.05%
State Patrol, Game & Fish, Warden & Criminal Investigator Pension Plan					
2014	\$4,037,681	\$3,077,515	\$960,166	\$21,817,686	14.11%
2015	3,784,380	3,355,688	428,692	22,196,930	15.12%
2016	4,097,473	3,574,065	523,408	23,636,482	15.12%
2017	4,041,445	3,552,582	488,863	23,641,495	15.03%
2018	3,607,303	3,529,976	77,327	23,063,176	15.31%
2019	3,997,559	3,639,164	358,395	23,118,850	15.74%
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan					
2015	\$1,139,454	\$2,238,612	\$(1,099,158)	N/A	N/A
2016	3,128,272	3,198,930	(70,658)	N/A	N/A
2017	2,923,585	3,290,994	(367,409)	N/A	N/A
2018	3,275,465	2,959,943	315,522	N/A	N/A
2019	3,543,372	3,118,824	424,548	N/A	N/A
Paid Firemen's Pension Plan A					
2014	\$9,458,093	\$-	\$9,458,093	\$198,404	0.00%
2015	9,714,697	-	9,714,697	179,486	0.00%
2016	10,663,740	-	10,663,740	195,221	0.00%
2017	11,734,389	-	11,734,389	195,221	0.00%
2018	15,597,369	-	15,597,369	134,155	0.00%
2019	16,974,397	-	16,974,397	65,621	0.00%

* Includes other funding sources but excludes member redeposits and member service purchase contributions.

In addition, the actual contribution equals the contractually required contribution.

Note: Information is not available before 2014.

Required Supplementary Information - Schedule of Contributions

SCHEDULE OF CONTRIBUTIONS MULTIYEAR

LAST 10 FISCAL YEARS

FY Ending December 31,

	Actuarially Determined Contribution	Actual Contribution*	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
Paid Firemen's Pension Plan B					
2014	\$3,273,329	\$3,184,045	\$89,284	\$24,552,559	12.97%
2015	3,275,448	3,273,668	1,780	25,986,443	12.60%
2016	3,420,716	3,370,961	19,755	26,390,481	12.77%
2017	3,496,053	3,230,196	265,857	28,209,686	11.45%
2018	4,221,146	3,356,547	864,599	26,811,084	12.52%
2019	4,760,014	3,516,198	1,243,816	28,028,382	12.55%
Judicial Pension Plan					
2014	\$596,723	\$916,598	\$(319,875)	\$5,989,181	15.30%
2015	589,177	920,867	(331,690)	6,363,028	14.47%
2016	579,926	925,971	(346,045)	6,384,628	14.50%
2017	543,468	949,263	(405,795)	6,386,001	14.86%
2018	909,557	960,478	(50,921)	6,558,029	14.65%
2019	986,724	1,060,477	(73,753)	6,602,303	16.06%
Law Enforcement Pension Plan					
2014	\$11,812,078	\$13,308,281	\$(1,496,203)	\$147,790,833	9.00%
2015	11,708,248	12,706,883	(998,635)	150,399,739	8.45%
2016	12,063,684	13,730,305	(1,666,621)	154,779,198	8.87%
2017	11,623,441	13,614,406	(1,990,965)	153,547,078	8.87%
2018	14,493,422	13,781,011	712,411	151,898,695	9.07%
2019	16,754,321	14,270,844	2,483,477	155,851,473	9.16%
Air Guard Firefighter Pension Plan					
2014	\$13,694	\$143,582	\$(129,888)	\$1,731,731	8.29%
2015	3,987	158,319	(154,332)	2,124,296	7.45%
2016	7,634	136,768	(129,134)	2,151,997	6.36%
2017	6,011	156,263	(150,252)	1,975,631	7.91%
2018	11,590	159,583	(147,993)	2,154,544	7.41%
2019	4,344	158,176	(153,832)	2,341,404	6.76%

* Includes other funding sources but excludes member redeposits and member service purchase contributions.

In addition, the actual contribution equals the contractually required contribution.

Note: Information is not available before 2014.

Other Supplementary Information - Administrative & Investment Expense

OTHER SUPPLEMENTARY INFORMATION

SCHEDULE OF ADMINISTRATIVE EXPENSES AND INVESTMENT ADVISORY FEES

Year Ending December 31, 2019

	Defined Benefit Plan	457 Plan	Total
Administrative Expenses			
Personnel Services:			
Staff Salaries	\$2,870,815	\$302,852	\$3,173,667
Board & Other Salaries	24,263	431	24,694
Employer Paid Benefits	1,182,245	158,236	1,340,481
Total Personnel Services	4,077,323	461,519	4,538,842
Miscellaneous:			
Utilities	6,132	462	6,594
Postage	46,155	14,445	60,600
Dues and Licenses	319,538	11,167	330,705
Advertising-Promotional	23,098	8,745	31,843
Travel	146,748	41,509	188,257
Board Travel	39,000	3,560	42,560
State Car	-	7,473	7,473
Office Supplies	48,721	5,673	54,394
Food Service & Supplies	20,767	1,311	22,078
Real Property Rental	4,329	238	4,567
Equipment Rental	2,847	256	3,103
External Maintenance Contracts	49,449	515	49,964
Total Miscellaneous	706,784	95,354	802,138
Communication:			
Data Services	303,922	-	303,922
Telecommunications	35,504	5,970	41,474
Total Communication	339,426	5,970	345,396

Other Supplementary Information - Administrative & Investment Expense

OTHER SUPPLEMENTARY INFORMATION (continued)
SCHEDULE OF ADMINISTRATIVE EXPENSES AND INVESTMENT ADVISORY FEES (continued)
Year Ending December 31, 2019 (continued)

	Defined Benefit Plan Continued	457 Plan Continued	Total Continued
Professional Services:			
Advisory Services	120,900	9,100	130,000
Auditing Services	75,935	5,716	81,651
Actuarial Services	210,222	-	210,222
Information Services	22,794	1,085	23,879
Disability Claims Services	43,815	-	43,815
Investment Consulting Services	285,000	144,115	429,115
IT Project Services	729,087	-	729,087
Legal Services	57,090	16,524	73,614
Marketing Services	13,500	13,500	27,000
Printing Services	37,344	6,251	43,595
Temporary Employment Services	29,412	17,098	46,510
Other Contracted Services	25,548	9,342	34,890
Space Rental	233,768	17,595	251,363
State of Wyoming - Cost Allocation	604,741	45,518	650,259
Total Professional Services	2,489,156	285,844	2,775,000
Total Administration Expenses	7,612,689	848,687	8,461,376
Depreciation Expense	358,585	-	358,585
Investment Fees:*			
Investment Advisor Fees	400,000	-	400,000
Custodial Service Fees	1,075,025	-	1,075,025
Record Keeping Fees	-	646,204	646,204
Security Lending Agent Fees	12,517,093	-	12,517,093
Total Investment Fees	14,350,703	646,204	14,996,907
Total Administrative Expenses & Investment Fees	21,963,392	1,494,891	23,458,283

* Investment Manager Fees not included in this schedule. See Schedule of Fees by Investment Type located within the Investment Section on page 102.

Other Supplementary Information - Deferred Compensation Net Position

OTHER SUPPLEMENTARY INFORMATION

DEFINED CONTRIBUTION PLAN

COMBINING SCHEDULE OF PARTICIPANT AND ADMINISTRATIVE NET POSITION

December 31, 2019

	Administrative Account	Plan Participant Balances	Eliminations	Total
Assets				
Cash and Short-Term Investments:				
Cash with State Treasurer	\$19,243	\$-	\$-	\$19,243
Domestic Liquidity - Outside Banks	2,522,832	8,122,531	-	10,645,363
	2,542,075	8,122,531	-	10,664,606
Receivables				
Employee Contributions	-	414,275	-	414,275
Participant Fee Receivable	418,957	-	418,957	-
Rebate and Fee Income Receivable	1,723,317	-	-	1,723,317
Interest Receivable	766	-	-	766
	2,143,040	414,275	418,957	2,138,358
Investments, at Fair Value				
Fixed Income	-	286,137,702	-	286,137,702
Equities	-	490,462,835	-	490,462,835
Alternatives	-	13,344,731	-	13,344,731
Investment Contracts	-	13,561	-	13,561
Self Directed Brokerage Investments	-	3,346,317	-	3,346,317
	-	793,305,146	-	793,305,146
Total Assets	4,685,115	801,841,952	418,957	806,108,110
Liabilities				
Participant Fee Payable	-	418,957	418,957	-
Administrative & Consulting Fees Payable	(47,419)	-	-	(47,419)
Total Liabilities	(47,419)	418,957	418,957	(47,419)
Net Position Held in Trust for Pension Benefits	\$4,732,534	\$801,422,995	\$-	\$806,155,529

Other Supplementary Information - Deferred Compensation Change in Net Position

OTHER SUPPLEMENTARY INFORMATION (continued)

DEFINED CONTRIBUTION PLAN

COMBINING SCHEDULE OF CHANGES IN PARTICIPANT AND ADMINISTRATIVE NET POSITION

Year Ended December 31, 2019

	Administrative Account	Plan Participant Balances	Eliminations	Total
Additions				
Member Contributions	\$-	\$53,991,334	\$-	\$53,991,334
Administrative Revenue	1,619,268	-	1,619,268	-
Investment Income:				
Net Appreciation (Depreciation) in Fair Value of Investments		125,138,119		125,138,119
Interest and Dividends	211,181	3,053,095	-	3,264,276
Total Investment Income(loss)	1,830,449	182,182,548	1,619,268	182,393,729
Deductions				
Benefits Paid/Distributions	-	35,631,675	-	35,631,675
Administrative Expenses	848,687	-	-	848,687
Record Keeping	646,204	-	-	646,204
Participant Fees Assessed	-	1,619,269	1,619,269	-
Total Expenditures	1,494,891	37,250,944	1,619,269	37,126,567
Net Increase(Decrease)	335,558	144,931,604	-	145,267,162
Net Position Held in Trust for Pension Benefits				
Beginning of Year	4,396,976	656,491,391	-	660,888,367
End of Year	\$4,732,534	\$801,422,995	-	\$806,155,529

Independent Auditor's Report on Internal Control and Compliance



Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of Trustees
Wyoming Retirement System
Cheyenne, Wyoming

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Wyoming Retirement System (WRS), a fiduciary fund of the State of Wyoming as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise WRS's basic financial statements, and have issued our report thereon dated June 19, 2020.

Internal Control over Financial Reporting

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

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

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

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Independent Auditor's Report on Internal Control and Compliance

Compliance and Other Matters

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

Purpose of this Report

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



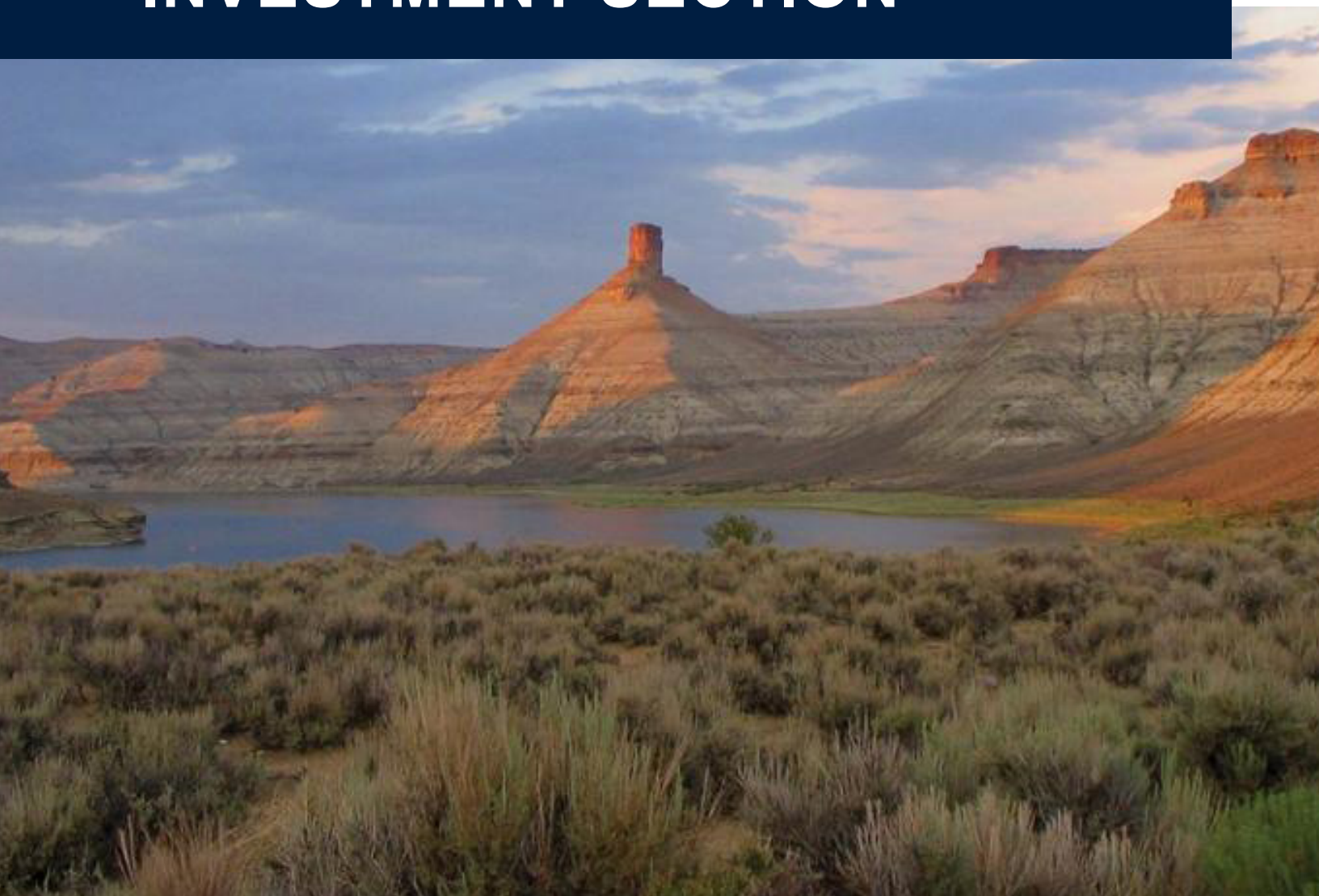
Boise, Idaho
June 19, 2020

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Comprehensive Annual Financial Report 2019

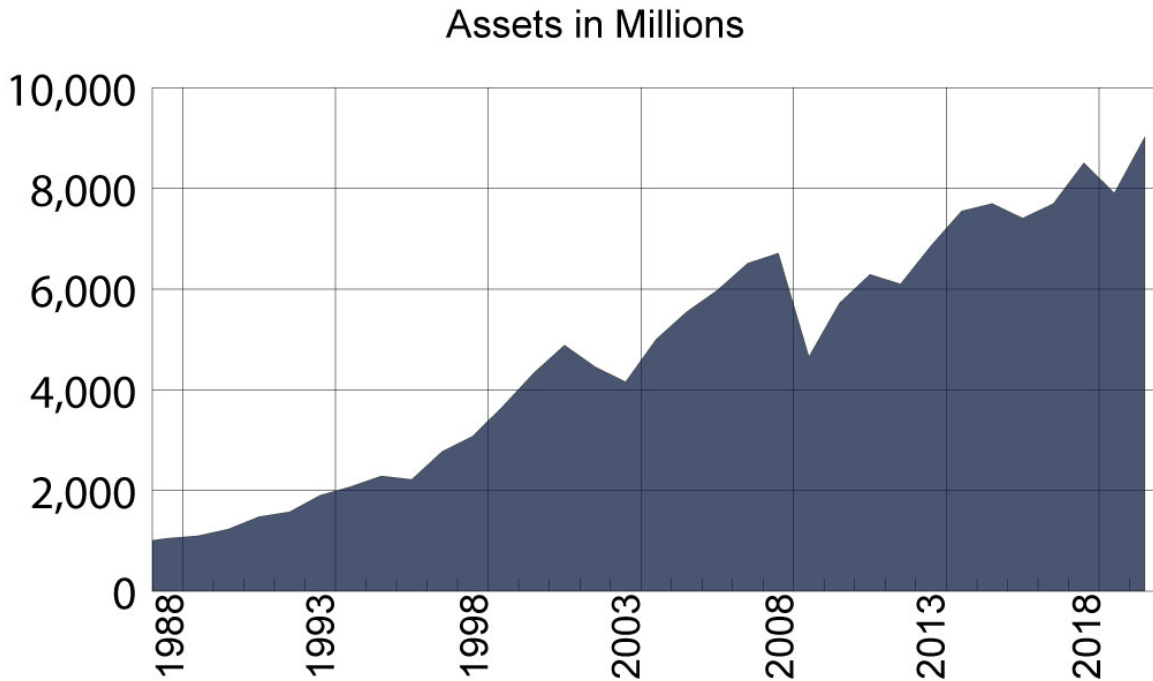
INVESTMENT SECTION



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Total Plan Investments

The following section has been compiled by staff using reports supplied by Northern Trust, Meketa Investment Group, and internally generated documents for investment activities through December 31, 2019. The investment activity is a time-weighted rate of return methodology based upon fair value.



Total Plan investments as of December 31, 2019 were \$9,009,222,485, up \$1,115 million for the calendar year.

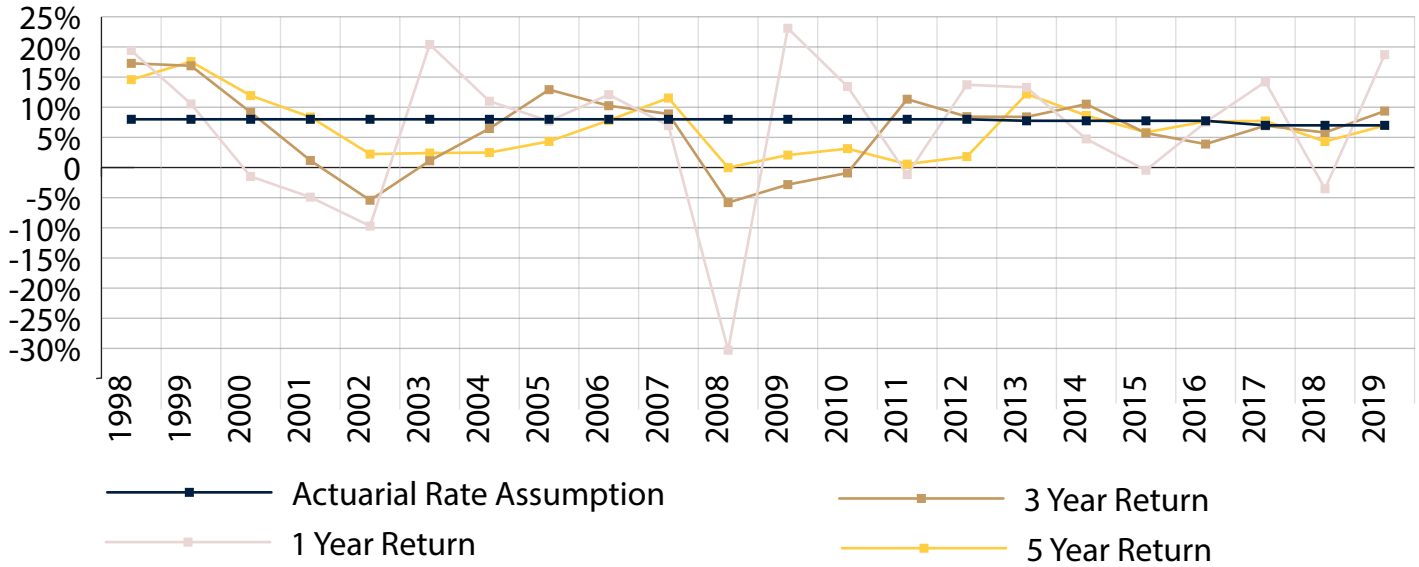
Investment Performance

The WRS investment portfolio generated a one-year return for the year ended December 31, 2019 of 18.72% (net of fees). This compares to a return of 15.84% for the blended benchmark (described in the Management Discussion and Analysis section) and 18.67 % for a 60% MSCI ACWI Net Equity/40% Barclays Multiverse Index. The WRS portfolio ranked in the 17th percentile for 2019 as measured against its peer group. WRS’s assumed investment rate of return has been 7.00% since January 1, 2019.

For the three-year period ending December 31, 2019, the portfolio generated an annualized net return of 9.36%. Over that same period, the investment return of the benchmark was 8.41% and the peer group median return was 8.93%. For the five-year period ending December 31, 2019, WRS generated an annualized return of 6.97%, compared to a benchmark return of 6.32% and a peer group median return of 6.80%.

Total Return - Net of Fees

Total Return - Net of Fees



Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Actuarial Rate Assumption	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
1 Year Return	19.40%	10.55%	-1.48%	-4.91%	-9.70%	20.41%	11.00%	7.71%	12.09%	6.94%	-30.30%
3 Year Return	17.28%	16.87%	9.15%	1.17%	-5.42%	1.12%	6.47%	12.91%	10.25%	8.89%	-5.82%
5 Year Return	14.57%	17.56%	11.93%	8.38%	2.23%	2.40%	2.49%	4.33%	7.82%	11.53%	-0.02%

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Actuarial Rate Assumption	8.00%	8.00%	8.00%	8.00%	7.75%	7.75%	7.75%	7.75%	7.00%	7.00%	7.00%
1 Year Return	23.10%	13.43%	-1.17%	13.73%	13.30%	4.74%	-0.44%	7.53%	14.20%	-3.52%	18.72%
3 Year Return	-2.83%	-0.90%	11.33%	8.43%	8.39%	10.51%	5.72%	3.89%	6.93%	5.81%	9.36%
5 Year Return	2.07%	3.13%	0.57%	1.81%	12.20%	8.63%	5.84%	7.64%	7.73%	4.32%	6.97%

Asset Allocation

Asset allocation represents the selection of a course of action for the investment portfolio based on an estimate of future returns and risks associated with investment objectives.

Strategic Asset Allocation

The asset allocation of the WRS investment portfolio begins with the Strategic Asset Allocation decisions made by the Wyoming Retirement Board of Trustees (Board). The Board analyzes, selects, and reviews the Strategic Allocation annually. Although establishing the Strategic Allocation is a continuous process, at least once per year – normally early in the calendar – the Board reviews asset class return and volatility assumptions with the goal of adjusting expectations for both the upcoming 12-month period and a longer-term 5- to 7-year view. The Strategic Asset Allocation reflects the Board’s view of the asset classes that will position the portfolio to best meet the Board’s long-term return objectives within a reasonable degree of risk.

The Board's Strategic Asset Allocation decisions are considered one of the primary drivers – perhaps the single most important driver – of portfolio investment performance. There is a preponderance of evidence suggesting that a portfolio's investment policy, or long-term asset allocation, is the primary determinant of return variability over time. The Strategic Allocation is designed to provide the portfolio with a broadly diversified mix of assets that together creates return streams and risk patterns consistent with the Board's unique risk tolerance and investment objectives. In determining the optimum mix of assets, the Board considers several variables, including:

- The expected rate of return for each asset class;
- The expected risk (standard deviation) of each asset class;
- The correlation between the various rates of return of the asset classes;
- The underlying factors considered to be the primary drivers of asset class performance; and
- The investment objectives and risk constraints of the portfolio.

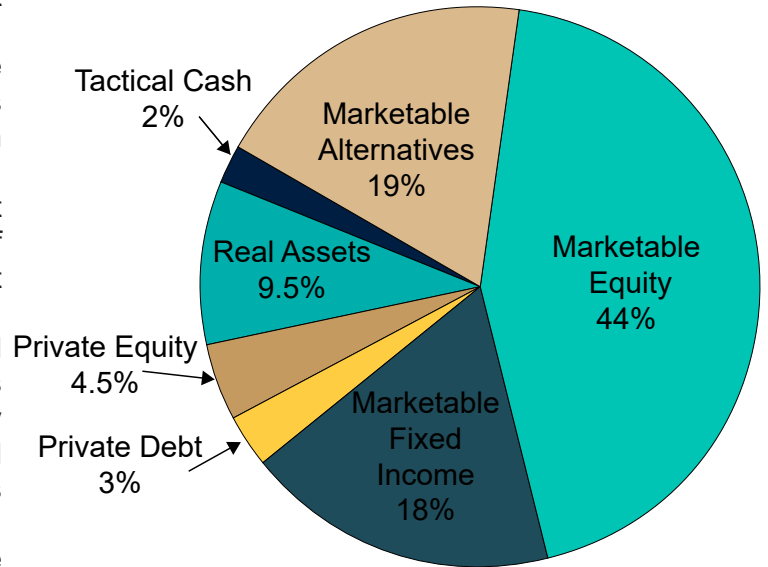
In addition, the Board considers WRS's ability to practically implement meaningful investment dollars in an asset class in a cost-effective manner. The Board assigns relevant benchmarks to each asset class, thereby creating an atmosphere in which staff can implement Tactical Asset Allocation decisions regarding active and passive implementation. The custom benchmarks for the Board's Strategic Asset Allocation decisions, effective May 16, 2019, are as follows:

Investment Asset Class	Strategic Asset Allocation Weight	Custom Benchmarks	Weights	Blended composition
Tactical Cash	2.0%	Custom Total Tactical Cash		Barclays Short Treasury
Marketable Fixed Income	18.0%	Custom Total Marketable Fixed Income Benchmark	27.8%	Barclays US Aggregate
			50.0%	Barclays Government
			22.2%	50% Barclays Capital HY Index and 50% Credit Suisse Leveraged Loan Index
Private Debt	3.0%	Cambridge Associates Vintage Year Blend (QTR Lag)		
Marketable Equity	44.0%	Total Return of Custom Blended Marketable Equity Index	48.2%	Russell 3000
			32.3%	MSCI EAFE IMI, Net Dividend (70% hedged)
			19.6%	MSCI EM IMI, Net Dividend
Private Equity	4.5%	Cambridge Associates Global All Private Equity (QTR Lag)		
Marketable Alternatives	19.0%	HFRI Fund of Funds Composite Index		
Real Assets	9.5%	* Vintage Year Blended Benchmark		
Total Investment Assets	100.0%	Target Asset Allocation Return		

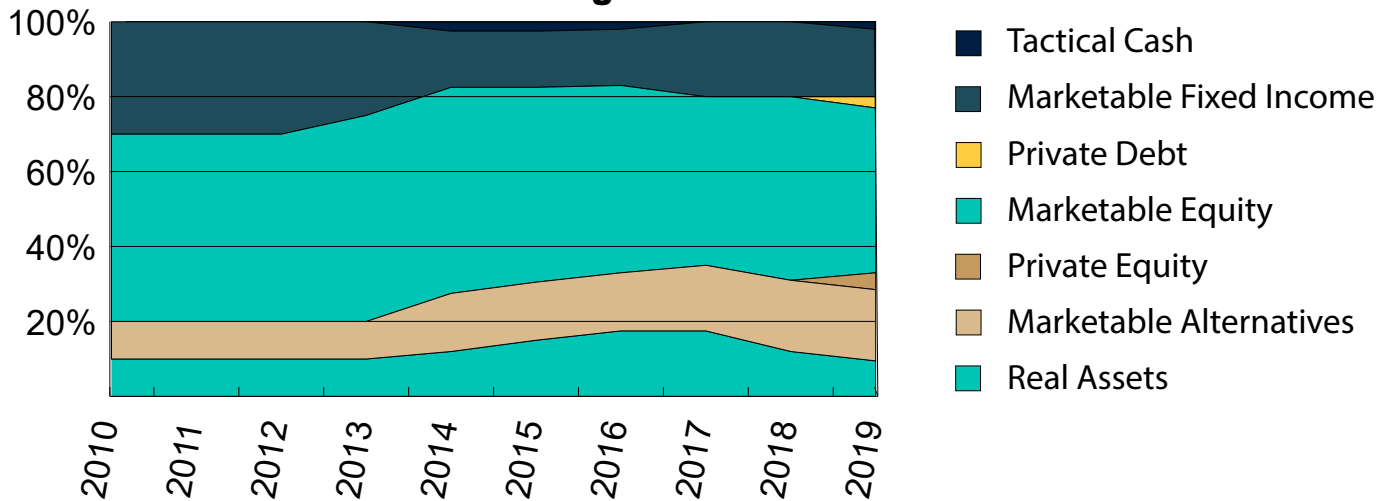
Asset Allocation

Asset allocation is neither simple nor static. It exists in an evolving marketplace. But, to a significant degree, the decisions made by the Board dictate the amount of risk assumed by the portfolio and the associated investment return expected over the long-term. The Board must understand the basis for its decisions to invest in certain asset classes and disinvest from others. Systematic approaches to asset allocation can be useful, but in the final analysis, asset allocation decisions reflect the institutional beliefs of the Board. The Board must understand that asset allocation decisions are long-term in nature and therefore give WRS the ability to hold a higher level of risk bearing assets. By assuming more risk, it is expected that long-term returns will be considerably higher than if the focus is strictly on short-term capital perseverance. Generating higher long-term returns enables WRS to reduce the amount of money needed from participant contributions to properly fund the system. The accompanying pie chart illustrates the Strategic Asset Allocation of the WRS investment portfolio through December 31, 2019.

Strategic Asset Allocation Weight



Strategic Asset Allocation



Strategic Asset Class	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tactical Cash	0.0%	0.0%	0.0%	0.0%	2.5%	2.5%	2.0%	0.0%	0.0%	2.0%
Marketable Fixed Income	30.0%	30.0%	30.0%	25.0%	15.0%	15.0%	15.0%	20.0%	20.0%	18.0%
Private Debt										3.0%
Marketable Equity	50.0%	50.0%	50.0%	55.0%	55.0%	52.0%	50.0%	45.0%	49.0%	44.0%
Private Equity										4.5%
Marketable Alternatives	10.0%	10.0%	10.0%	10.0%	15.5%	15.5%	15.5%	17.5%	19.0%	19.0%
Real Assets	10.0%	10.0%	10.0%	10.0%	12.0%	15.0%	17.5%	17.5%	12.0%	9.5%

*Note: Numbers may not total 100.0% due to rounding.

Tactical Asset Allocation

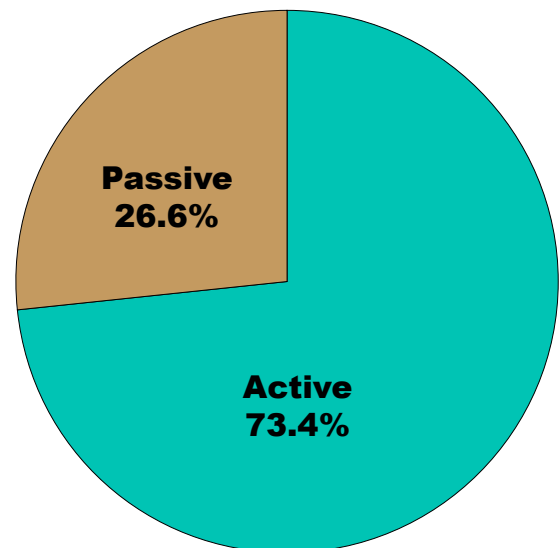
Short-term decisions determine the most efficient way to implement portfolio investments within the construct of the long-term Strategic Asset Allocation determined by the Board. The Tactical Allocation is necessary given that we are unable to immediately allocate to private markets to meet our long-term strategic goals. Private markets rely on capital being drawn over multiple years, which makes it impractical to reach out long-term goals immediately. It forces us to have realistic short-term targets as we build towards our long-term goals.

The Board has delegated to WRS staff the authority for making tactical, short-term asset allocation decisions on behalf of the portfolio within broad ranges approved by the Board. The Board has established these ranges to maintain appropriate risk controls. The delegation includes the authority for staff to hire and fire investment managers and to adjust the portfolio for the purpose of taking advantage of market opportunities as they emerge. In compliance with the Board's Investment Policy Statement (IPS), the Chief Investment Officer makes Tactical Allocation decisions away from the long-term Strategic Allocation in consultation with the external investment consultant (Meketa) and upon approval of the Executive Director. These decisions involve two distinct steps:

Tactical Decisions – decisions made to alter an asset allocation of the portfolio away from the passive benchmark of the long-term Strategic Asset Allocation class adopted by the Board within pre-approved ranges. For example, if staff had a favorable view on Fixed Income, staff may decide to overweight the targeted 20% of assets, which would by default underweight one of the other asset classes.

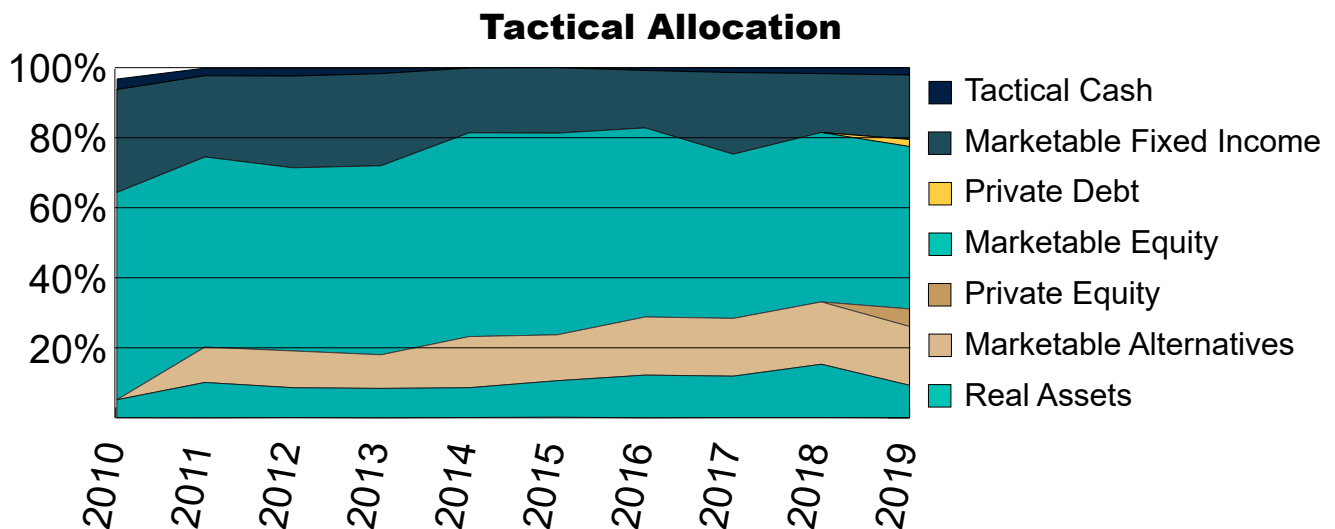
Implementation Decisions – decisions involving active vs. passive management and, in the case of active management, the selection of specific managers whose performance is then measured relative to appropriate benchmarks. For example, staff may elect to implement Fixed Income investments through active management instead of passive management. Staff is authorized to then select the appropriate active manager(s). WRS has traditionally relied heavily on active management. Over the past year, WRS has transitioned to holding more active allocations in both the equity and fixed income asset classes. The pie chart to the right highlights WRS's exposure to active and passive management within the portfolio through December 31, 2019.

Active vs Passive Management



Tactical Allocation decisions are sub-asset class allocation choices made by the Chief Investment Officer with the approval of the Executive Director to deviate from the Strategic Allocation weight. The value added by staff decisions to overweight or underweight these sub-asset classes is measured by the difference between the relative returns of the benchmarks for the Strategic Allocation and the Tactical Allocation. Tactical Allocation returns that exceed the returns associated with the Strategic Allocation reflect value added through tactical decisions. Tactical Allocation returns less than the Strategic Allocation returns reflect losses to the portfolio's performance based upon tactical decisions. Tactical decisions should be measured over all periods of time, with majority weight placed on outcomes that have occurred over a full market cycle (5 to 7 years). Tactical Allocations as of December 31, 2019, are included in the graph on page 92.

Asset Allocation



Tactical Allocation	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tactical Cash	3.0%	2.4%	2.5%	1.8%	0.2%	0.1%	0.9%	1.5%	1.8%	2.2%
Marketable Fixed Income	29.4%	23.2%	26.2%	26.3%	18.5%	18.7%	16.4%	23.3%	16.8%	18.4%
Private Debt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%
Marketable Equity	59.2%	54.3%	52.3%	54.0%	58.2%	57.6%	54.0%	46.9%	48.4%	46.4%
Private Equity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%
Marketable Alternatives	0.0%	10.1%	10.5%	9.6%	14.6%	13.1%	16.6%	16.5%	17.8%	16.8%
Real Assets	5.1%	10.1%	8.5%	8.4%	8.5%	10.4%	12.2%	11.8%	15.2%	9.3%

Note: Prior to 2019, Private Debt and Private Equity were included with Real Assets and named Private Markets.

Implementation Decisions / Manager Selection

Implementation Decisions are investment manager selection choices made by the Chief Investment Officer with the approval of the Executive Director. The value added through these manager selection decisions is measured by the difference between the actual manager portfolio returns and the Strategic Asset Allocation return. This difference captures the value added through manager selection decisions. Portfolio returns that exceed the benchmarks associated with the Strategic Asset Allocation reflect value added through manager selection decisions. Actual portfolio returns that underperform the Strategic Asset Allocation benchmarks reflect losses to the portfolio's performance based upon implementation decisions. Implementation decisions should be measured over all periods of time, with a majority weight placed on outcomes that have occurred over a full market cycle (5 to 7 years).

Investment Policy Summary

The Board receives performance data and other information on a quarterly basis to help ensure adequate monitoring of the portfolio's overall performance objectives.

APPENDIX I – Strategic Asset Allocation

Adopted December 4, 2009, Revised: April 22, 2011; May 25, 2012; February 22, 2013; February 28, 2014; May 22, 2014; February 25, 2015; February 25, 2016; February 16, 2017; February 15, 2018; September 10, 2018; February 7, 2019; May 16, 2019.

Asset Class	Target Asset Allocation Weight (%)	Target Asset Allocation Range ^{1,2} (%)	Asset Class Benchmark Index
Tactical Cash	2.0	0.0 – 5.0	Barclays Short Treasury
Total Fixed Income	21.0		Blended Benchmark
Marketable Fixed Income	18.0	13.0 – 25.5 ³	Blended Benchmark
Core Plus	5.0		Bloomberg Barclays U.S. Aggregate
US Government Debt	9.0		Bloomberg Barclays Government
Opportunistic Credit	4.0		50% Credit Suisse Leveraged Loan/ 50% Bloomberg Barclays High Yield
Private Debt	3.0	2.5 – 7.5	Cambridge Associates Vintage Year Blend (QTR Lag)
Total Equity	48.5		Blended Benchmark
Marketable Equity	44.0	39.0 – 49.0 ³	Blended Benchmark
Domestic Equity	21.2		Russell 3000 Total Return Index
International Developed Equity	14.2		MSCI EAFE IMI, Net Dividend
Emerging Markets Equity	8.6		MSCI EM IMI, Net
Private Equity	4.5	2.5 – 12.5	Cambridge Associates Global All Private (QTR Lag)
Marketable Alternatives	19.0	14.0 – 24.0	HFRI FoF Index
Opportunistic/Directional		0.0 – 10.0	
Absolute Return		5.0 – 15.0	
Enhanced Fixed Income		0.0 – 10.0	
Global Asset Alloc. (GAA)		2.5 – 12.0	
Private Real Assets	9.5	7.0 – 13.0	Cambridge Associates Vintage Year Blend(QTR Lag)
Natural Resources		2.5 – 7.5	Cambridge Associates Vintage Year (QTR Lag)
Infrastructure		2.5 – 7.5	MSCI World Infrastructure (QTR Lag)
Real Estate	3.5	2.5 – 7.5	NCREIF ODCE

1 All ranges for Private Markets are long-term ranges.

2 Range based on a percentage of total assets.

3 Strategic ranges for subcategories within Marketable Equity and Marketable Fixed Income are calculated as +/- 50% of Target Asset Allocation Weight with a maximum adjustment of 5.0% in either direction, unless otherwise noted.

Return Objective: **7.0%** net of expenses

Investment Policy Summary

The Board adopted a revised Investment Policy Statement (IPS) on February 15, 2018 that amended the policy originally approved December 4, 2009. The IPS defines the desired investment outcomes of the portfolio. The Board's responsibilities under the IPS are as follows:

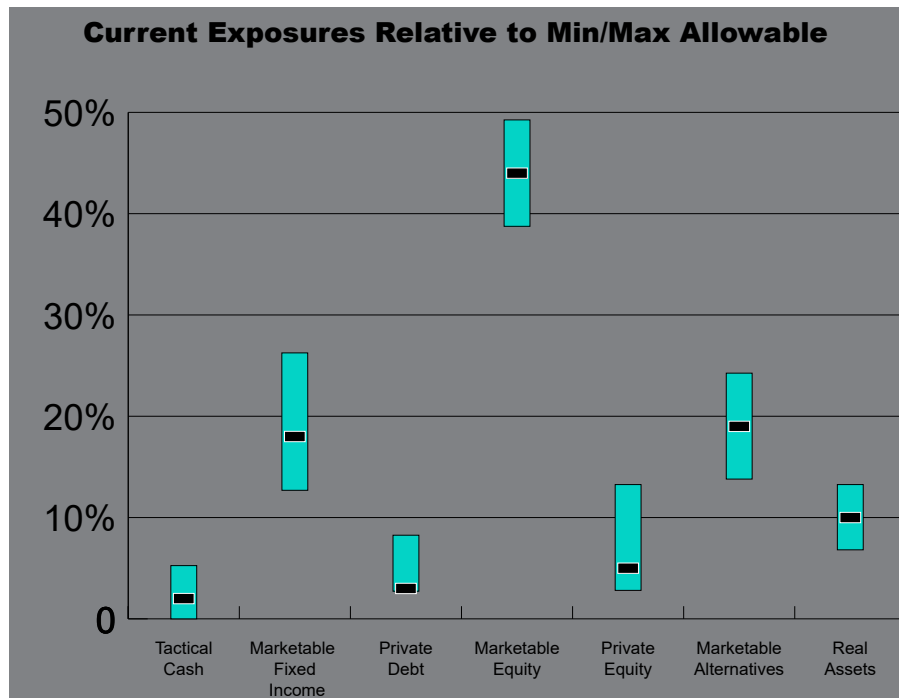
Develop a Return Objective designed to:

1. Keep contribution rates reasonably level over long periods of time, subject to and recognizing that changes made to the law, actuarial assumptions and benefit levels will impact contribution rates; and Adequately fund aggregate liabilities of the system.
2. Adequately fund aggregate liabilities of the system.

Establish a Strategic Asset Allocation that is expected to meet the Return Objective while minimizing the potential impact that volatility in the portfolio will have on the contribution rate.

The statutory requirements for WRS's investments are outlined in W. S. 9-3-408.

W.S. 9-3-408(b) states in part "... In investing and managing the monies in the retirement account, the board, or its designee, shall exercise the judgment and care that a prudent investor would, in light of the purposes, terms, distribution requirements and all other circumstances surrounding the monies in the retirement account, including risk and return objectives established by the board"



The Board's investment policies are outlined in detail in Note 3 to the Basic Financial Statements section of this CAFR.

WRS's success in achieving the 7.0% assumed investment return objective is evaluated on an ongoing basis over reasonably long periods of time (5 to 7 years). The reason for the long-term focus on the return objective is to preclude the temptation towards overreaction to short-term market events that have little to no bearing on long-term asset/liability management. The Board must reconcile its need to evaluate investment policy implementation decisions over shorter time frames while maintaining longer-term focus on managing and measuring the portfolio's overall performance relative to the long-term return objective.

To address this issue, the Board evaluates performance relative to Strategic Asset Allocation and Tactical Asset Allocation benchmarks which help to evaluate the Board's broad Strategic Asset Allocation decisions and the staff's Tactical Asset Allocation and implementation decisions.

Actual Asset Class Exposure	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tactical Cash	3.00%	2.40%	2.50%	1.80%	0.20%	0.10%	0.90%	1.50%	1.80%	2.20%
Marketable Fixed Income	29.40%	23.20%	26.20%	26.30%	18.50%	18.70%	16.40%	23.30%	16.78%	18.40%
Private Debt										2.01%
Marketable Equity	59.20%	54.30%	52.30%	54.00%	58.20%	57.60%	54.00%	46.90%	48.40%	46.40%
Private Equity										4.95%
Marketable Alternatives	0.00%	10.10%	10.50%	9.60%	14.60%	13.10%	16.60%	16.50%	17.80%	16.81%
Real Assets	5.10%	10.10%	8.50%	8.40%	8.50%	10.40%	12.20%	11.80%	15.20%	9.26%

Cash

The Board has provided a target of 2.0% for this asset class with a strategic range of 0.0% to 5.0%, recognizing a cash allocation for liquidity purposes can provide needed flexibility during times of market stress. In addition, WRS typically holds between 3 to 6 months of estimated benefit payments in cash and cash equivalents. Investments in this category will be focused primarily on preservation of capital with a secondary focus on yield.

As of December 31, 2019, the Cash allocation was \$198,519,436, or 2.2% of the total portfolio after accounting for the overlay program. Cash includes Short Term Investment Funds (STIF). WRS had contracts with one external investment manager who manages a portfolio related to cash including the overlay.

Fixed Income with Private Debt

Effective May 16, 2019, the WRS Governance Policy was amended to include Private Debt in the Fixed Income Category

The Board has provided a target of 18.0% for Marketable Fixed Income with a strategic range of 13.0%-25.5%. The Private Debt sub-asset class has a target of 3% and with a strategic range of 2.5% - 7.5%. Private Debt was moved from Private Market to the Fixed Income category based on the new guideline adopted by the Board effective 05/16/2019. The blended benchmark for marketable fixed income consists of 27.8% Barclays U.S. Aggregate, 50% Barclays Government, and 22.2% is a 50/50 blend of Barclays Capital High Yield Index and Credit Suisse Leveraged Loan Index. The Private Debt benchmark is Cambridge Associates Vintage Year Blend (Qtr Lag). Private Debt strategies can include Sr. lending, Mezzanine Finance, Distressed debt, and Real Estate debt among others.

The top 10 holdings within the Fixed Income portfolio as of December 31, 2019, are illustrated in the table below:

The Top 10 holdings				12/31/2019	
Fixed Income					
Holdings		Due		Percent of WRS Marketable Fixed Income Portfolio	Fair Value
United States Treas Bds Tbond Fixed		3.00%	2/15/2049	2.44%	37,422,236.72
United States Treas Bds		2.25%	8/15/2049	2.33%	35,770,315.63
United States Treas Bds Dtd		3.13%	5/15/2048	2.17%	33,176,737.50
Us Treas Nts Infl Idx Dtd		0.13%	4/15/2022	2.08%	31,920,124.27
United States Treas Bds		3.75%	11/15/2043 REG	1.89%	28,933,754.35
United States Of Amer Treas Notes Infl Idx		0.13%	4/15/2021	1.32%	20,240,857.29
United States Treas Bds Dtd 00247		2.50%	2/15/2046 REG	1.20%	18,422,578.08
Usa Treasury Nts Tips Usd1000		1.13%	1/15/2021	1.12%	17,215,769.05
United States Treas Nts		2.88%	5/15/2028	0.94%	14,404,738.33
Us Treas Nts Tips Dtd			7/15/2021	0.86%	13,162,384.35

Note: Please contact the Wyoming Retirement System for a complete list of portfolio holdings.

Asset Class Summaries

As of December 31, 2019, the Marketable Fixed Income allocation was \$1,658,422,324, or 18.4% of the total portfolio, after accounting for the overlay program. WRS had contracts with 8 external investment managers. In addition, WRS employs Russell Investments as an overlay manager. No managers were hired during calendar 2019, for Marketable Fixed Income.

Organization	Style	Percent of WRS Marketable Fixed Income Portfolio
Alliance Bernstein	Core Plus	18.96%
Altum	Credit	6.25%
Beach Point	Opportunistic Credit	6.87%
Dimensional	U.S. Government Debt	9.67%
Doubleline	U.S. Government Debt	15.82%
PIMCO	TIPS	6.62%
RUSSELL FX	FX	0.00%
Russell Overlay	Overlay	7.60%
State Street Global Advisors	U.S. Government Debt	17.29%
Western Asset Management	Core Plus	10.93%

WRS has 9 external managers for its allocations to Private Debt. As of December 31, 2019, Private Debt strategies allocation was \$181,444,940, or 2.0% of the total portfolio.

Private Debt		
Organization	Style	Percent of WRS Private Debt Portfolio
Carl Marks	Private Debt	13.50%
Centerbridge	Private Debt	28.92%
Kayne Anderson Messani	Private Debt	0.12%
KSL COF II	Private Debt	4.06%
Oaktree Real Estate	Private Debt	3.63%
TCI REP III	Private Debt	3.76%
Tennenbaum Debt Opportunity fund	Private Debt	9.69%
Tennenbaum Senior Loan III	Private Debt	36.31%

Equity with Private Equity

Effective May 16, 2019, the WRS Governance Policy was amended to include Private Equity in the Equity Category

The Board has provided a target of 44% for the total Marketable Equity asset class with a strategic range of 39.0% to 49.0%. The WRS Equity asset class is, in aggregate, benchmarked against a blend of indices that reflect strategic regional weightings and the strategic allocation to Private Equity. The Private Equity sub asset class has a target of 4.5% and a strategic range of 2.5% - 12.5 %. It previously was accounted for in the Private Market Asset class but was moved to the Equity asset class based on new guidelines adopted by the Board effective 05/16/2019. The Marketable Equity blended benchmarks consists of 48.2% Russell 3000 Total Return Index, 32.3 % MSCI EAFE IMI, Net Dividend, and 19.5% MSCI EM IMI, Net Dividend. The Private Equity benchmark is Cambridge Associates Global All Private Equity (Qtr Lag). Private Equity are investments in buyout and venture equity not traded in public markets.

The Board has given staff the flexibility to invest in all sectors and geographies.

The top 10 holdings within the Marketable Equity portfolio as of December 31, 2019, are illustrated in the table below:

Equity		
Holdings	Percent of WRS Marketable Equity Portfolio	Fair Value
Microsoft Corp Com	1.41%	59,477,028.10
Apple Inc Com Stk	1.36%	57,353,662.45
Visa Inc Com Cl A Stk	0.80%	33,959,730.70
Alphabet Inc Capital Stock Usd0.001 Cl A	0.73%	30,894,369.74
Amazon Com Inc Com	0.66%	27,776,730.88
Facebook Inc Com Usd0.000006 Cl 'A'	0.60%	25,524,684.75
Johnson & Johnson Com Usd1	0.57%	23,883,586.84
Alphabet Inc Cap Stk Usd0.001 Cl C	0.55%	23,339,021.12
Mastercard Inc Cl A	0.51%	21,415,471.98
Nestle Sa Chf0.10(Regd)	0.48%	20,401,992.04

Note: Please contact the Wyoming Retirement System for a complete list of portfolio holdings.

Asset Class Summaries

As of December 31, 2019, the Marketable Equity allocation was \$4,179,954,574, or 46.4% of the total portfolio, after accounting for the overlay program. WRS has contracts with 17 external investment managers who manage 18 portfolio strategies. State Street Global Advisors was the only manager to be hired during the year. They manage an Emerging Market Equity mandate. Three managers, Eurizon SLJ - Popo Agie, a currency manager, AQR, an International Developed Equity manager, and State Street Global Advisors with a Non- US Developed mandate, were terminated during the year.

Organization	Style	Percent of WRS Marketable Equity Portfolio
Alliance Bernstein -EAFE 100% USD Hedged	Developed Market	0.95%
Alliance Bernstein -International Developed Market	Developed Market	8.05%
Alliance Bernstein -MSCI US Large Cap	US Equity	10.77%
Alliance Bernstein -US Equity	US Equity	11.95%
Acadian EM Managed VOL	Emerging Market	0.03%
Alliance Bernstein -MSCI US	US Equity	12.82%
Alliance Bernstein -MSCI US	Developed Market	0.00%
Burgundy Equity	US Equity	1.96%
Burgundy Equity	Emerging Market	0.65%
Burgundy Equity	Developed Market	5.40%
Cantillon Equity	US Equity	5.51%
Cantillon Equity	Emerging Market	0.57%
Cantillon Equity	Developed Market	1.97%
Cevian Cap II	Developed Market	4.31%
ESLJ	Foreign Currency	0.01%
Harding Loevner EM	Emerging Market	4.92%
Highclere	Developed Market	2.12%
Kiltearn	Developed Market	2.32%
NIKKO International Equity	Developed Market	1.78%
Pershing Square	Developed Market	3.49%
Polunin EM	Emerging Market	4.43%
RS Small Cap Growth	US Equity	2.65%
RS Small Cap Growth	Emerging Market	0.14%
RS Small Cap Growth	Developed Market	0.17%
Russell Overlay	Futures	-1.04%
Sanderson International Equity Value	Developed Market	5.62%
State Street - MSCI EM	Emerging Market	4.58%
ValueAct Capital	US Equity	3.87%

Asset Class Summaries

No managers were hired or fired within the Private Equity portion of the Equity asset class in 2019 and the market value of those positions as of December 31, 2019, was \$446,118,960, or 4.95% of the portfolio.

Private Equity		
Organization	Style	Percent of WRS Private Equity Portfolio
Abbott II	Private Equity	7.03%
Abbott	Private Equity	60.58%
Adams Street	Private Equity	7.03%
Grove Street	Private Equity	25.36%

Marketable Alternatives

The Board has provided a target of 19.0% for this asset class with a strategic range of 14.0% to 24.0%. The WRS Marketable Alternatives asset class is, in aggregate, benchmarked against HFRI FoF Index.

As of December 31, 2019, the Marketable Alternatives allocation was \$1,515,571,595, or 16.8% of the total portfolio. In the calendar year 2019, WRS had contracts with 11 external investment managers who manage 14 unique portfolios. Two managers, Acadian and Janchor Partners were hired during the year. Acadian now classified in Marketable Alternatives, manages two mandates for WRS, one in EM equity, and the other in Non US developed market equity. Janchor, the other new Marketable Alternatives position, is an Asian equities manager but did not call any capital prior to December 31, 2019.

Marketable Alternatives		
Organization	Style	Percent of WRS Marketable Alternatives Portfolio
Acadian Em Sc	Emerging Market	2.83%
Acadian Int'L Dm Sc-SI	Developed Market	5.58%
AQR	Global Asset Allocation	11.08%
Bridgewater Optimal	Global Asset Allocation	10.79%
Bridgewater Pure Alpha	Global Macro	19.09%
Dorsal Capital Partners	Equity Market Neutral	5.39%
GMO GAAR	Global Asset Allocation	9.58%
GMO Systematic GM	Global Macro	5.50%
IVA	Equity L/S	4.86%
LFL Advisers	Equity L/S	1.70%
NAYA Fund	Equity L/S	5.55%
TCI - Children Investment Fund	Equity L/S	18.04%

Asset Class Summaries

Private Real Assets

The Board has provided a target of 9.5% for this asset class with a strategic range of 7.0% to 13.0%. The Private Debt and Private Equity were moved from Private Markets to Fixed Income and Equity class, respectively, based on the new guideline adopted by the Board effective 05/16/2019. This leaves only Natural Resources, Infrastructure and Real Estate in the Private Real Asset class, of which prior class name was Private Markets. The subcategories are listed below:

1. Real Estate— Private real estate funds (not publicly traded); can be core, value-add or opportunistic.
2. Other Real Assets— Private funds where pricing and value is derived from holding Real assets other than real estate. Some holdings in this category would include metals and mining funds, energy funds, or infrastructure investments.

The WRS Private Markets asset class is, in aggregate, benchmarked against a blend of vintage year funds matching our internal holdings.

As of December 31, 2019, the allocation to Private Real Assets was \$834,349,796 or 9.3% of the total portfolio. WRS had contracts with 18 external investment managers who manage 9 portfolios. No managers were initially funded or terminated in 2019.

Real Assets		
Organization	Style	Percent of WRS Real Assets Portfolio
Alinda	Real Estate	2.42%
BlackStone VIII	Real Estate	3.56%
Centersquare	Real Estate	15.62%
Kayne Anderson Karep	Real Estate	0.02%
Kayne Anderson Karep III	Real Estate	0.00%
Macquarie	Infrastructure	2.02%
Moran II	Real Assets	8.44%
Moran Real Asset	Real Assets	41.85%
Morgan Stanley Prime Property	Real Estate	14.51%
Orion	Real Assets	4.71%
Ridgewood III	Real Assets	1.77%
Ridgewood II	Real Assets	5.09%
Summit	Real Assets	0.00%

Overlay

WRS employs Russell Investments to provide an overlay program to ensure the portfolio's major asset classes remain within a certain percentage of their targeted weights. Market movements can lead to significant implicit tilts within the portfolio. For example, a sharp decline in equities will many times be accompanied by stability within fixed income. Consequently, the equity position will decrease as a percentage of assets while fixed income will increase. This causes an "implicit" tilt towards fixed income. The overlay program brings these implicit tilts back within an acceptable band.

Asset Class Summaries

Schedule of Investment Portfolios by Asset Class

As of December 31, 2019

Due to rounding, numbers may not total exactly.

Asset Class	Fair Value (in USD)	Percentage of Investments at Fair Value
Tactical Cash		
Cash & Cash Equivalents	282,527,437	3.13%
Russell Overlay Program	(84,008,001)	-0.93%
Total Tactical Cash	198,519,436	2.20%
Marketable Fixed Income		
Corporate Bonds/Credit	356,580,245	3.96%
Emerging Markets Debt	29,451,054	0.33%
Mortgages/ABS	78,283,410	0.87%
TIPS	137,349,795	1.52%
Treasury/Agencies/ Governments	930,737,617	10.33%
Russell Overlay Program	126,020,203	1.40%
Total Fixed Income	1,658,422,324	18.40%
Private Debt		
Private Debt	181,444,940	2.01%
Total Private Debt	181,444,940	2.01%
Marketable Equity		
Domestic	2,454,302,878	27.23%
Emerging Markets	666,366,677	7.39%
International Developed	1,101,297,222	12.22%
Russell Overlay (MSCI US)	(36,681,540)	-0.41%
Russell Overlay (MSCI EM)	118,125,090	1.31%
Russell Overlay (MSCI World ex-US)	(123,455,753)	-1.37%
Total Equity	4,179,954,574	46.37%
Private Equity		
Private Equity	446,118,960	49.50%
Total Private Equity	446,118,960	4.95%
Marketable Alternatives		
Marketable Alternatives	1,515,571,595	16.81%
Total Marketable Alternatives	1,515,571,595	16.81%
Private Real Assets		
Real Estate	270,031,523	3.00%
Other Real Assets	564,318,273	6.26%
Total Private Real Assets	834,349,796	9.26%
Total Securities & Cash	9,014,381,625	100.00%

Schedule of Fees

2019			
Total of Defined Benefit Pension Plans			
Investment Managers	Assets Under Management	Total Management Fees	Basis Points
Cash	282,527,437	-	-
Fixed Income Manager	1,532,402,121	7,730,890	50 bp
Equity Manager	4,221,966,777	19,483,085	46 bp
Marketable Alternatives Manager	1,515,571,595	16,310,048	108 bp
Private Markets Manager	1,461,913,696	6,694,047	46 BP
Total Net Receivables/Payables	(5,159,140)	N/A	N/A bp
Total Investment Manager Fees	9,009,222,485	50,218,069	56 bp
Other Investment Service Fees			
Overlay Manager	592,581		N/A
Security Lending Fees	234,509		N/A
Custodian Services	1,074,463		N/A
Investment Consultant Fees	685,000		N/A
Total Other Service Fees	2,586,553		N/A

Note 1: Incentive fees, estimated at \$29,953,716 for the year, are not included above.

Note 2: 100% of the WRS's investments are externally managed with no direct commission expenses.

Schedule of Investment Results

Schedule of Investment Returns

The following tables compare the actual, based on market value return, for investment categories to the corresponding benchmark time weighted returns.

Schedule of Investment Results				
The following tables compare the actual, based on market value return, for investment categories to the corresponding benchmark time weighted returns.				
	2019	3 Year	5 Year	10 Year
Fixed Income Returns				
Total Marketable Fixed Income Portfolio (Net of fees)	8.46%	3.97%	2.95%	4.96%
Custom Marketable Fixed Income Benchmark*	7.93%	3.78%	3.06%	4.13%
Total Private Debt Portfolio (Net of fees)	3.78%	5.21%	6.93%	9.28%
Cambridge Associates Vintage Year Blended Private Debt Benchmark	5.51%	7.31%	n/a	n/a
Equity Returns				
Total Marketable Equity Portfolio (Net of fees)	26.49%	11.75%	7.69%	8.38%
Custom Regionally Weighted Benchmark*	25.80%	11.96%	8.46%	8.82%
Total Private Equity Portfolio (Net of fees)	14.82%	15.21%	4.07%	n/a
Cambridge Associates Global All PE	7.65%	13.13%	10.98%	n/a
Marketable Alternatives Returns				
Total MA Portfolio (Net of fees)	18.81%	9.26%	6.58%	n/a
HFRI FOF Composite	8.33%	3.87%	2.35%	n/a
Private Market Returns				
Total Real Estate Portfolio (Net of fees)	4.98%	7.66%	8.04%	9.19%
Vintage Year Blend Benchmark	4.18%	8.42%	8.11%	9.29%
TOTAL PORTFOLIO Returns				
Total Portfolio (Net of fees)	18.72%	9.36%	6.97%	7.80%
Strategic Asset Benchmark*	15.84%	8.41%	6.32%	7.10%

*See WRS Investment Policy Statement Appendix 1 for benchmark composition.

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Comprehensive Annual Financial Report 2019

ACTUARIAL SECTION



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June 11, 2020

Board of Trustees
State of Wyoming Retirement System
 6101 Yellowstone Road
 Suite 500
 Cheyenne, WY 82002

Subject: Wyoming Retirement System – Actuarial Valuation Certificate

Dear Board of Trustees:

The Governmental Accounting Standards Board (GASB) has issued statement No. 67 which sets forth the requirements for plan reporting for each of the Wyoming Retirement System's Retirement Plans. For reporting purposes, the valuation date used is one year prior to the measurement date of December 31, 2019, and roll-forward procedures are used to update the actuarial liabilities and costs from the valuation date to the measurement date.

For purposes of reporting the financial information under GASB 68, the dates of the valuations are:

Retirement Plan	GASB 67 Actuarial Valuation Date
State of Wyoming Retirement System	January 1, 2019
Wyoming Law Enforcement Retirement Fund	January 1, 2019
Wyoming Paid Firemen's Retirement Fund Plan A	January 1, 2019
Wyoming Paid Firemen's Retirement Fund Plan B	January 1, 2019
Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund	January 1, 2019
Wyoming Judicial Retirement System	January 1, 2019
Wyoming Air Guard Firefighters Retirement System	January 1, 2019
Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Fund	January 1, 2019

Actuary's Letter

Wyoming Retirement System
June 11, 2020

Roll-forward procedures were then applied to each set of valuation results in order to provide the actuarial information as of the December 31, 2019 measurement date. Assets for the GASB 67 calculations were based on the market value of assets as of the measurement date. Separate actuarial valuations are performed for each of the plans as the assets of each plan are only available to pay the benefits for that plan. Actuarial assumptions and methods for each plan are set by the Board of Trustees, based upon recommendations made by the plan's actuary. The current actuarial assumptions and methods were adopted on August 23, 2017 by the Board based on an experience study performed as of December 31, 2016.

The following schedules in this section were prepared by GRS:

- Schedule of Active Member Valuation Data
- Schedule of Retirees & Beneficiaries Added to & Removed from Rolls
- Solvency Test
- Gains & Losses in Accrued Liabilities during the Year Ended 12/31/2019
- Schedule of Funding Progress

Financing Objectives of the WRS Plans

GASB reporting is separate and distinct from the financing of the plans. The basic financing objective in determining the funding requirements of the Wyoming Retirement System is to establish contribution requirements which will remain approximately level with any unfunded actuarial accrued liability paid off over a finite number of years. For plans whose benefits are based on each employee's compensation, these contribution requirements are expressed as a level percent of covered payroll. Otherwise, these contribution requirements are expressed as a level dollar amount.

Progress toward this financing objective is measured by actuarial valuations which determine the present financial position and test the adequacy of established contribution rates. The actuarial valuations are performed annually for all plans. The most recent funding valuations were performed as of January 1, 2020.

Differences between assumptions and actual experience since the prior valuation are identified as actuarial gains and losses. These gains and losses impact the unfunded actuarial accrued liability and future funding requirements determined in subsequent valuations.

Member data for retired, active and inactive members was supplied as of January 1, 2019 by the System's staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. Asset and financial information as of December 31, 2019, was supplied to us by the Wyoming Retirement System. The staff of the Wyoming Retirement System prepared the other supporting schedules in this section and the trend tables in the financial section based on information supplied in our reports.




Wyoming Retirement System
June 11, 2020

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. Furthermore, the assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice

The undersigned are independent actuaries and consultants.

Mark Randall and Thomas Lyle are Enrolled Actuaries and Mark Randall, Paul Wood, and Thomas Lyle are Members of the American Academy of Actuaries and meet their Qualification Standards. All signing actuaries are experienced in performing valuations for large public retirement systems.

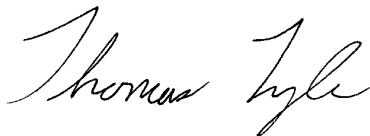
Respectfully submitted,
Gabriel, Roeder, Smith & Company



Mark R. Randall, FCA, EA, MAAA
Chief Executive Officer



Paul T. Wood, ASA, FCA, MAAA
Consultant



Thomas A. Lyle, ASA, FCA, EA, MAAA
Senior Analysis



Actuarial Assumptions and Methods - Public Employee Plan

Exhibit I

State of Wyoming Retirement System

Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. Amortization bases are established each year and amortized based on the Board's policy. The Board's policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 30 year period with each subsequent amortization base created as a result of year to year experience changes over individual 20 year closed periods. The current year amortization base is determined by taking the current unfunded liability less the

Actuarial Assumptions and Methods - Public Employee Plan

Exhibit I

State of Wyoming Retirement System

Actuarial Assumptions and Methods

outstanding amounts of prior year bases. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Service	Rate	Service	Rate
1	6.50%	14	3.50%
2	6.50%	15	3.25%
3	6.50%	16	3.25%
4	6.00%	17	3.25%
5	5.25%	18	3.25%
6	4.75%	19	3.00%
7	4.25%	20	3.00%
8	4.00%	21	2.75%
9	4.00%	22	2.75%
10	4.00%	23	2.75%
11	3.75%	24	2.75%
12	3.50%	25	2.50%
13	3.50%	25+	2.50%

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

Actuarial Assumptions and Methods - Public Employee Plan

Exhibit I

State of Wyoming Retirement System

Actuarial Assumptions and Methods

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

5. Demographic Assumptions

a. Mortality

Healthy Pre-Retirement Mortality:

RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

Actuarial Assumptions and Methods - Public Employee Plan

Exhibit I

State of Wyoming Retirement System

Actuarial Assumptions and Methods

b. Disability and Withdrawal

Age	Disability		Withdrawal		Withdrawal		
	Male	Female	Ultimate		Service	First five years	
			Male	Female		Male	Female
20	0.01%	0.01%	11.00%	10.00%	1	22%	25%
25	0.01%	0.01%	11.00%	10.00%	2	18%	21%
30	0.01%	0.01%	6.00%	6.00%	3	14%	15%
35	0.01%	0.01%	5.00%	5.00%	4	13%	15%
40	0.01%	0.01%	4.00%	5.00%	5	13%	14%
45	0.02%	0.02%	4.00%	5.00%			
50	0.12%	0.05%	3.00%	4.00%			
55	0.24%	0.12%	3.00%	4.00%			
60	0.24%	0.24%	3.00%	4.00%			

c. Retirement Rates

Age	Retirement	
	Unreduced	Reduced
<50	15.0%	1.0%
50	15.0%	0.5%
51	15.0%	0.5%
52	15.0%	0.5%
53	15.0%	0.5%
54	15.0%	0.5%
55	17.0%	1.0%
56	17.0%	1.0%
57	15.0%	1.0%
58	15.0%	1.0%
59	15.0%	2.5%
60	13.0%	2.5%
61	13.0%	2.5%
62	18.0%	2.5%
63	15.0%	2.5%
64	15.0%	2.5%
65	25.0%	
66	30.0%	
67	28.0%	
68	25.0%	
69	25.0%	
70	15.0%	
71	15.0%	
72	15.0%	
73	15.0%	
74	15.0%	
75	15.0%	
76	15.0%	
77	15.0%	
78	15.0%	
79	15.0%	
80+	100.0%	

Actuarial Assumptions and Methods - Public Employee Plan

Exhibit I

State of Wyoming Retirement System

Actuarial Assumptions and Methods

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit. It is assumed that 25% of active members who terminate with a deferred vested benefit will elect to have their contributions refunded.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60 (65 for Tier 2).
- f. No benefit amount data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.
- g. There will be no recoveries once disabled. We assume all disabled members are totally disabled.
- h. No surviving spouse will remarry.
- i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 2.50% to the valuation date.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Decrement relativity: Decrement rates are converted to probabilities in order to account for multiple decrements.

Actuarial Assumptions and Methods - Public Employee Plan

Exhibit I

State of Wyoming Retirement System

Actuarial Assumptions and Methods

- n. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- o. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable.

Actuarial Assumptions and Methods - Public Employee Plan

Exhibit I

State of Wyoming Retirement System

Changes in Plan Provisions, Actuarial Assumptions and Methods

Changes in Plan Provisions

Pursuant to Enrolled Act No. 25, interest crediting for non-vested members on a prospective basis is eliminated beginning July 1, 2019.

There have been no other changes to the Plan Provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

There have been no changes to the assumptions or methods since the prior valuation.

Actuarial Assumptions and Methods - Law Enforcement

Exhibit II

Wyoming Law Enforcement Retirement Fund

Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.

Actuarial Assumptions and Methods - Law Enforcement

Exhibit II

Wyoming Law Enforcement Retirement Fund

Actuarial Assumptions and Methods

d. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. Amortization bases are established each year and amortized based on the Board's policy. The Board's policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 30 year period with each subsequent amortization base created as a result of year to year experience changes over individual 20 year closed periods. The current year amortization base is determined by taking the current unfunded liability less the outstanding amounts of prior year bases.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Age	Rate
20	7.00%
25	6.50%
30	5.00%
35	4.25%
40	4.25%
45	4.00%
50	3.50%
55	3.25%
60	3.00%

Actuarial Assumptions and Methods - Law Enforcement

Exhibit II

Wyoming Law Enforcement Retirement Fund

Actuarial Assumptions and Methods

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

5. Demographic Assumptions

a. Rates Before Retirement

Healthy Pre-Retirement Mortality:

RP-2014 Mortality Table for Healthy Employees, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Mortality Table for Healthy Annuitants, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality:

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Actuarial Assumptions and Methods - Law Enforcement

Exhibit II Wyoming Law Enforcement Retirement Fund Actuarial Assumptions and Methods

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

30% of active deaths are assumed to be duty-related

b. Disability and Withdrawal

Age	Disability		Withdrawal		Withdrawal		
	Male	Female	Ultimate		Service	First five years	
			Male	Female		Male	Female
20	0.07%	0.07%	15.00%	15.00%	1	24%	25%
25	0.07%	0.07%	11.00%	11.00%	2	20%	22%
30	0.07%	0.07%	8.50%	8.50%	3	15%	19%
35	0.08%	0.08%	6.50%	6.50%	4	13%	18%
40	0.18%	0.18%	5.50%	5.50%	5	12%	15%
45	0.38%	0.38%	5.00%	5.00%			
50	0.67%	0.67%	3.00%	3.00%			
55	1.14%	1.14%	3.00%	3.00%			
60	2.22%	2.22%	3.00%	3.00%			

30% of active disabilities are assumed to be duty-related

Actuarial Assumptions and Methods - Law Enforcement

Exhibit II

Wyoming Law Enforcement Retirement Fund

Actuarial Assumptions and Methods

c. Retirement Rates

Age	Reduced Rate	Unreduced Rate	Age	Reduced Rate	Unreduced Rate
50	2.0%	20.0%	61	NA	17.0%
51	2.0%	13.0%	62	NA	17.0%
52	2.0%	13.0%	63	NA	20.0%
53	2.0%	13.0%	64	NA	20.0%
54	2.0%	13.0%	65	NA	50.0%
55	2.0%	15.0%	66	NA	50.0%
56	2.0%	15.0%	67	NA	50.0%
57	2.0%	15.0%	68	NA	50.0%
58	2.0%	20.0%	69	NA	50.0%
59	2.0%	20.0%	70	NA	100.0%
60	NA	20.0%			

10% is assumed for members with at least 20 years of service before age 50

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: It is assumed that 45% of active members who terminate with a vested deferred benefit will elect to have their contributions refunded.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60.
- f. No benefit amount data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.
- g. There will be no recoveries once disabled.

Actuarial Assumptions and Methods - Law Enforcement

Exhibit II

Wyoming Law Enforcement Retirement Fund

Actuarial Assumptions and Methods

- h. No children are assumed for purposes of valuing the ordinary death benefit.
- i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 2.50% to the valuation date.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- n. Benefit Service: All members are assumed to accrue one year of service each year.

Actuarial Assumptions and Methods - Law Enforcement

Exhibit II

Wyoming Law Enforcement Retirement Fund

Changes in Plan Provisions, Actuarial Assumptions and Methods

Changes in Plan Provisions

Effective July 1, 2019, the interest on contributions for non-vested inactive Employees will be 0%.

There have been no other changes in the benefit provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

There have been no changes to the assumptions or methods since the prior valuation.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan A

Exhibit III

Wyoming Paid Firemen's Retirement Fund Plan A

Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 10 years from the valuation date, as a level dollar amount.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan A

Exhibit III

Wyoming Paid Firemen's Retirement Fund Plan A

Actuarial Assumptions and Methods

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

4.50% per year

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is not assumed to increase. The assumed payroll growth in a closed plan is 0%.

d. Cost-of-living adjustment:

3.00% per year

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan A

Exhibit III

Wyoming Paid Firemen's Retirement Fund Plan A

Actuarial Assumptions and Methods

5. Demographic Assumptions

a. Mortality

Healthy Pre-Retirement Mortality:

RP-2014 Mortality Table for Healthy Employees Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Mortality Table for Healthy Annuitants Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan A

Exhibit III

Wyoming Paid Firemen's Retirement Fund Plan A

Actuarial Assumptions and Methods

b. Disability and Withdrawal

Age	Disability		Withdrawal	
	Male	Female	Ultimate	
	Male	Female	Male	Female
20	0.03%	0.03%	12.00%	12.00%
25	0.03%	0.03%	8.00%	8.00%
30	0.03%	0.03%	5.00%	5.00%
35	0.19%	0.19%	3.00%	3.00%
40	0.42%	0.42%	1.00%	1.00%
45	0.65%	0.65%	1.00%	1.00%
50	0.82%	0.82%	1.00%	1.00%
55	1.81%	1.81%	0.50%	0.50%
60	2.00%	2.00%	0.50%	0.50%

c. Retirement Rates

Age	Rate	Age	Rate
50	20%	57	25%
51	25%	58	25%
52	25%	59	25%
53	25%	60	100%
54	25%	61	100%
55	25%	62	100%
56	25%		

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan A

Exhibit III

Wyoming Paid Firemen's Retirement Fund Plan A

Actuarial Assumptions and Methods

6. Other Assumptions

- a. Percent married: 100.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is 20 years after hire date.
- f. No benefit amount data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.
- g. There will be no recoveries once disabled. We assume all disabled members are totally disabled.
- h. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 2.50% to the valuation date.
- i. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- j. Decrement timing: Decrements of all types are assumed to occur mid-year.
- k. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- l. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan A

Exhibit III

Wyoming Paid Firemen's Retirement Fund Plan A

Actuarial Assumptions and Methods

- m. Benefit Service: All members are assumed to accrue one year of service each year.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan A

Exhibit III

Wyoming Paid Firemen's Retirement Fund Plan A

Changes in Plan Provisions, Actuarial Assumptions and Methods

Changes in Plan Provisions

There have been no changes in the benefit provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

There have been no changes to the assumptions or methods since the prior valuation.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan B

Exhibit IV

Wyoming Paid Firemen's Retirement Fund Plan B

Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL) or the surplus amount.

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. Amortization bases are established each year and amortized based on the Board's policy. The Board's policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 30 year period with each subsequent amortization base created as a result of year to year experience changes over individual 20 year closed periods. The current year amortization base is determined by taking the current unfunded liability less the outstanding amounts of prior year bases.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan B

Exhibit IV

Wyoming Paid Firemen's Retirement Fund Plan B

Actuarial Assumptions and Methods

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Age	Rate
20	7.50%
25	7.00%
30	7.00%
35	6.50%
40	5.50%
45	5.00%
50	5.00%
55	4.75%
60	4.50%

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan B

Exhibit IV

Wyoming Paid Firemen's Retirement Fund Plan B

Actuarial Assumptions and Methods

5. Demographic Assumptions

a. Rates Before Retirement

Healthy Pre-Retirement Mortality:

RP-2014 Mortality Table for Healthy Employees, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Mortality Table for Healthy Annuitants, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

100% of active deaths and disabilities are assumed to be duty-related

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan B

Exhibit IV

Wyoming Paid Firemen's Retirement Fund Plan B

Actuarial Assumptions and Methods

b. Disability and Withdrawal

Age	Disability		Withdrawal	
	Male	Female	Ultimate	
			Male	Female
20	0.02%	0.02%	12.00%	12.00%
25	0.02%	0.02%	9.00%	9.00%
30	0.02%	0.02%	4.00%	4.00%
35	0.15%	0.15%	3.00%	3.00%
40	0.34%	0.34%	2.50%	2.50%
45	0.52%	0.52%	2.00%	2.00%
50	0.66%	0.66%	2.00%	2.00%
55	1.45%	1.45%	0.50%	0.50%
60	1.60%	1.60%	0.50%	0.50%

c. Retirement Rates

Age	Rate
50	20.0%
51	10.0%
52	10.0%
53	10.0%
54	10.0%
55	20.0%
56	25.0%
57	25.0%
58	15.0%
59	15.0%
60	25.0%
61	50.0%
62	100.0%

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan B

Exhibit IV

Wyoming Paid Firemen's Retirement Fund Plan B

Actuarial Assumptions and Methods

6. Other Assumptions

- a. Percent married: 100.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is 20 years after hire date.
- f. No benefit amount data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.
- g. There will be no recoveries once disabled. We assume all disabled members are totally disabled.
- h. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 2.50% to the valuation date.
- i. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- j. Decrement timing: Decrements of all types are assumed to occur mid-year.
- k. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- l. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- m. Benefit Service: All members are assumed to accrue one year of service each year.

Actuarial Assumptions and Methods - Paid Firemen's Pension Plan B

Exhibit IV

Wyoming Paid Firemen's Retirement Fund Plan B

Changes in Plan Provisions, Actuarial Assumptions and Methods

Changes in Plan Provisions

Effective July 1, 2020 the employee contribution rate will increase from 9.745% to 10.245% and the employer contribution rate will increase from 13.00% to 14.00%. The employee contribution rate will continue to increase by 0.50% on July 1 each subsequent year until it reaches the ultimate rate of 11.245% on July 1, 2022 and the employer contribution rate will continue to increase 1.00% on July 1 each subsequent year until it reaches the ultimate rate of 16.00% on July 1, 2022.

There have been no other changes in the benefit provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

There have been no changes to the assumptions or methods since the prior valuation.

Actuarial Assumptions and Methods - Warden, Patrol, DCI Plan

Exhibit V

Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund

Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. Amortization

Actuarial Assumptions and Methods - Warden, Patrol, DCI Plan

Exhibit V

Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund

Actuarial Assumptions and Methods

bases are established each year and amortized based on the Board's policy. The Board's policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 30 year period with each subsequent amortization base created as a result of year to year experience changes over individual 20 year closed periods. The current year amortization base is determined by taking the current unfunded liability less the outstanding amounts of prior year bases.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

Actuarial Assumptions and Methods - Warden, Patrol, DCI Plan

Exhibit V

Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund

Actuarial Assumptions and Methods

b. Salary increase rate

Age	Rate
20	8.50%
25	8.00%
30	5.75%
35	4.00%
40	3.00%
45	3.00%
50	3.00%
55	2.50%
60	2.50%

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

5. Demographic Assumptions

a. Rates Before Retirement

Healthy Pre-Retirement Mortality:

RP-2014 Mortality Table for Healthy Employees, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Mortality Table for Healthy Annuitants, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Actuarial Assumptions and Methods - Warden, Patrol, DCI Plan

Exhibit V Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund

Actuarial Assumptions and Methods

Disabled Mortality:

RP-2014 Disabled Mortality Table, fully generational, projected with
Scale
MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

100% of active deaths and disabilities are assumed to be duty-related

Actuarial Assumptions and Methods - Warden, Patrol, DCI Plan

Exhibit V Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund

Actuarial Assumptions and Methods

b. Disability and Withdrawal

Age	Disability		Withdrawal	
	Male	Female	Ultimate	
			Male	Female
20	0.10%	0.10%	18.00%	18.00%
25	0.10%	0.10%	6.00%	6.00%
30	0.23%	0.23%	6.00%	6.00%
35	0.39%	0.39%	6.00%	6.00%
40	0.57%	0.57%	5.00%	5.00%
45	0.73%	0.73%	5.00%	5.00%
50	0.75%	0.75%	2.50%	2.50%
55	0.75%	0.75%	1.00%	1.00%
60	0.75%	0.75%	1.00%	1.00%

100% of active disabilities are assumed to be duty-related

c. Retirement Rates

Age	Rate	Age	Rate
50	15%	56	10%
51	5%	57	15%
52	5%	58	15%
53	5%	59	15%
54	10%	60	35%
55	10%	61	40%
		62	100%

Actuarial Assumptions and Methods - Warden, Patrol, DCI Plan

Exhibit V Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund

Actuarial Assumptions and Methods

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 50.
- f. No benefit amount data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.
- g. There will be no recoveries once disabled.
- h. Administrative expenses: Average of actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.
- i. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- j. Decrement timing: Decrements of all types are assumed to occur mid-year.
- k. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- l. Incidence of contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- m. Benefit service: All members are assumed to accrue one year of service each year.

Actuarial Assumptions and Methods - Warden, Patrol, DCI Plan

Exhibit V

Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Retirement Fund

Changes in Plan Provisions, Actuarial Assumptions and Methods

Changes in Plan Provisions

There Effective July 1, 2019, the interest on contributions for non-vested inactive Employees will be 0%.

There have been no other changes in the benefit provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

The have been no changes to the assumptions or methods since the prior valuation.

Actuarial Assumptions and Methods - Judicial Plan

Exhibit VI Wyoming Judicial Retirement System Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percent of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 15 years from the valuation date. The Board's

Actuarial Assumptions and Methods - Judicial Plan

Exhibit VI

Wyoming Judicial Retirement System

Actuarial Assumptions and Methods

policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 15 year period with each subsequent amortization base created as a result of year to year experience changes over individual 15 year closed periods. The current year amortization base is determined by taking the current unfunded liability less the outstanding amounts of prior year bases.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

4.00% per annum

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 4.00% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

Actuarial Assumptions and Methods - Judicial Plan

Exhibit VI Wyoming Judicial Retirement System Actuarial Assumptions and Methods

5. Demographic Assumptions

a. Mortality

Healthy Pre-Retirement Mortality:

RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

Actuarial Assumptions and Methods - Judicial Plan

Exhibit VI Wyoming Judicial Retirement System Actuarial Assumptions and Methods

b. Disability and Withdrawal

Age	Disability		Withdrawal	
	Male	Female	Ultimate	
			Male	Female
20	0.01%	0.01%	5.60%	5.60%
25	0.01%	0.01%	4.20%	4.20%
30	0.01%	0.01%	2.90%	2.90%
35	0.01%	0.01%	2.00%	2.00%
40	0.01%	0.01%	1.50%	1.50%
45	0.01%	0.01%	1.10%	1.10%
50	0.03%	0.03%	0.80%	0.80%
55	0.05%	0.05%	0.60%	0.60%
60	0.07%	0.07%	0.40%	0.40%

c. Retirement Rates

Age	Rate	Age	Rate
55	2%	64	2%
56	2%	65	15%
57	2%	66	10%
58	2%	67	10%
59	2%	68	10%
60	2%	69	10%
61	2%	70	15%
62	2%	71	15%
63	2%	72	100%

Actuarial Assumptions and Methods - Judicial Plan

Exhibit VI

Wyoming Judicial Retirement System

Actuarial Assumptions and Methods

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit. It is assumed that 25% of active members who terminate with a deferred vested benefit will elect to have their contributions refunded.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 65.
- f. No benefit amount data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.
- g. There will be no recoveries once disabled. We assume all disabled members are totally disabled.
- h. No surviving spouse will remarry.
- i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 2.50% to the valuation date.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Decrement relativity: Decrement rates are converted to probabilities in order to account for multiple decrements.

Actuarial Assumptions and Methods - Judicial Plan

Exhibit VI

Wyoming Judicial Retirement System

Actuarial Assumptions and Methods

- n. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- o. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable

Actuarial Assumptions and Methods - Judicial Plan

Exhibit VI

Wyoming Judicial Retirement System

Changes in Plan Provisions, Actuarial Assumptions and Methods

Changes in Plan Provisions

There have been no changes to plan provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

There have been no changes to the assumptions or methods since the prior valuation.

Actuarial Assumptions and Methods - Air Guard Firefighters Plan

Exhibit VII

Wyoming Air Guard Firefighters Retirement System

Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percent of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. Amortization bases are established each year and amortized based on the

Actuarial Assumptions and Methods - Air Guard Firefighters Plan

Exhibit VII

Wyoming Air Guard Firefighters Retirement System

Actuarial Assumptions and Methods

Board's policy. The Board's policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 30 year period with each subsequent amortization base created as a result of year to year experience changes over individual 20 year closed periods. The current year amortization base is determined by taking the current unfunded liability less the outstanding amounts of prior year bases.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Service	Rate	Service	Rate
1	6.50%	14	3.50%
2	6.50%	15	3.25%
3	6.50%	16	3.25%
4	6.00%	17	3.25%
5	5.25%	18	3.25%
6	4.75%	19	3.00%
7	4.25%	20	3.00%
8	4.00%	21	2.75%
9	4.00%	22	2.75%
10	4.00%	23	2.75%
11	3.75%	24	2.75%
12	3.50%	25	2.50%
13	3.50%	25+	2.50%

Actuarial Assumptions and Methods - Air Guard Firefighters Plan

Exhibit VII

Wyoming Air Guard Firefighters Retirement System

Actuarial Assumptions and Methods

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

5. Demographic Assumptions

a. Mortality

Healthy Pre-Retirement Mortality:

RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Actuarial Assumptions and Methods - Air Guard Firefighters Plan

Exhibit VII

Wyoming Air Guard Firefighters Retirement System

Actuarial Assumptions and Methods

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

b. Disability and Withdrawal

Age	Disability		Withdrawal		Withdrawal		
	Male	Female	Ultimate		Service	First five years	
	Male	Female	Male	Female		Male	Female
20	0.01%	0.01%	11.00%	10.00%	1	22.00%	25.00%
25	0.01%	0.01%	11.00%	10.00%	2	18.00%	21.00%
30	0.01%	0.01%	6.00%	6.00%	3	14.00%	15.00%
35	0.01%	0.01%	5.00%	5.00%	4	13.00%	15.00%
40	0.01%	0.01%	4.00%	5.00%	5	13.00%	14.00%
45	0.03%	0.03%	4.00%	5.00%			
50	0.08%	0.08%	3.00%	4.00%			
55	0.20%	0.20%	3.00%	4.00%			
60	0.20%	0.20%	3.00%	4.00%			

65% of active disabilities are assumed to be duty-related

Actuarial Assumptions and Methods - Air Guard Firefighters Plan

Exhibit VII

Wyoming Air Guard Firefighters Retirement System

Actuarial Assumptions and Methods

c. Retirement Rates

Age	Retirement	
	Unreduced	Reduced
<50	15.0%	1.0%
50	15.0%	0.5%
51	15.0%	0.5%
52	15.0%	0.5%
53	15.0%	0.5%
54	15.0%	0.5%
55	17.0%	1.0%
56	17.0%	1.0%
57	15.0%	1.0%
58	15.0%	1.0%
59	15.0%	2.5%
60	13.0%	
61	13.0%	
62	18.0%	
63	15.0%	
64	15.0%	
65	25.0%	
66	30.0%	
67	28.0%	
68	25.0%	
69	25.0%	
70	15.0%	
71	15.0%	
72	15.0%	
73	15.0%	
74	15.0%	
75	15.0%	
76	15.0%	
77	15.0%	
78	15.0%	
79	15.0%	
80+	100.0%	

Actuarial Assumptions and Methods - Air Guard Firefighters Plan

Exhibit VII

Wyoming Air Guard Firefighters Retirement System

Actuarial Assumptions and Methods

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60.
- f. No benefit amount data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.
- g. There will be no recoveries once disabled.
- h. Administrative expenses: Assumed to be the average of the actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.
- i. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- j. Decrement timing: Decrements of all types are assumed to occur mid-year.
- k. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- l. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- m. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable

Actuarial Assumptions and Methods - Air Guard Firefighters Plan

Exhibit VII

Wyoming Air Guard Firefighters Retirement System

Changes in Plan Provisions, Actuarial Assumptions and Methods

Changes in Plan Provisions

There have been no changes to plan provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

There have been no changes to the assumptions or methods since the prior valuation.

Exhibit VIII

Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Fund

Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level dollar amount. Under this method, the employer contribution amount is the sum of (i) the employer normal cost amount, and (ii) the amount that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, and sex. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, or survivor's benefit. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant employer contribution amount which, if applied to each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.

Actuarial Assumptions and Methods - Vol Fire, EMT and S&R Plan

Exhibit VIII

Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Fund

Actuarial Assumptions and Methods

- d. The Board's policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 30 year period with each subsequent amortization base created as a result of year to year experience changes over individual 20 year closed periods. The current year amortization base is determined by taking the current unfunded liability less the outstanding amounts of prior year bases.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

Investment return: 7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

5. Demographic Assumptions

a. Rates Before Retirement

Healthy Pre-Retirement Mortality:

RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Actuarial Assumptions and Methods - Vol Fire, EMT and S&R Plan

Exhibit VIII

Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Fund

Actuarial Assumptions and Methods

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2020 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.04%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.50%	0.24%
35	0.06%	0.03%	0.13%	0.10%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.23%	1.90%	1.14%
55	0.27%	0.17%	0.55%	0.32%	2.24%	1.44%
60	0.47%	0.25%	0.78%	0.47%	2.65%	1.73%
65	0.83%	0.36%	1.10%	0.70%	3.17%	2.05%
70	1.34%	0.60%	1.62%	1.07%	3.91%	2.67%
75			2.54%	1.74%	5.14%	3.87%
80			4.23%	2.93%	7.24%	5.83%
85			7.37%	5.14%	10.78%	8.73%
90			13.01%	9.14%	16.56%	12.86%
95			20.87%	15.23%	23.60%	18.94%
100			30.32%	23.24%	31.55%	27.12%

b. Withdrawal Rates

Age	Withdrawal	
	Ultimate	
	Male	Female
20	20.00%	20.00%
25	11.00%	11.00%
30	8.00%	8.00%
35	5.00%	5.00%
40	5.00%	5.00%
45	3.00%	3.00%
50	2.00%	2.00%
55	2.00%	2.00%
60	2.00%	2.00%

Service	Withdrawal	
	First five years	
	Male	Female
1	16.0%	16.0%
2	15.5%	15.5%
3	15.0%	15.0%
4	13.0%	13.0%
5	10.0%	10.0%

Actuarial Assumptions and Methods - Vol Fire, EMT and S&R Plan

Exhibit VIII

Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Fund

Actuarial Assumptions and Methods

c. Retirement Rates

Age	Rates
<60	0.0%
60	70.0%
61	15.0%
62	15.0%
63	20.0%
64	25.0%
65	25.0%
66	30.0%
67	40.0%
68	40.0%
69	75.0%
70	100.0%

6. Other Assumptions

- a. Percent married: 85% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Administrative expenses: Average of actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.
- e. Decrement timing: Decrements of all types are assumed to occur mid-year.
- f. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- g. Incidence of contributions: Contributions are assumed to be received continuously throughout the year.
- h. Benefit service: All members are assumed to accrue one year of service each year.
- i. Premium tax allocation: Provided by staff and based on booked total premium taxes.

Actuarial Assumptions and Methods - Vol Fire, EMT and S&R Plan

Exhibit VIII

Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Fund

Actuarial Assumptions and Methods

- j. Percent of eligible deferred vested members electing a refund: 25% of all future deferred vested members are assumed to leave their contributions in the fund and elect a deferred vested annuity payable commencing at age 60.
- k. No benefit data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS

Actuarial Assumptions and Methods - Vol Fire, EMT and S&R Plan

Exhibit VIII

Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Fund

Changes in Plan Provisions, Actuarial Assumptions and Methods

Merger of the Volunteer Plans

Effective July 1, 2015, the Volunteer Firemen's Pension Fund and the Volunteer Emergency Medical Technician Pension Fund were merged into one plan, the Volunteer Firefighter and Emergency Medical Technician Pension Fund.

Changes in Plan Provisions

Pursuant to Enrolled Act No. 55, the premium tax allocated to fund this plan will increase from 70% to 80% starting July 1, 2019. Additionally, Search and Rescue members are allowed to join the plan if they contribute \$30 per month.

Pursuant to Enrolled Act No. 43, the premium tax allocated to fund this plan will increase from 80% to 100% starting July 1, 2020. Additionally, volunteer firefighters and volunteer EMT increased contribution to \$18.75 per month and search and rescue members contributions increased to \$37.50 per month.

There have been no changes to plan provisions since the prior valuation.

Changes in Actuarial Assumptions and Methods

The have been no changes to the assumptions or methods since the prior valuation.

Actuarial Summary

Assets

As shown in the Statement of Fiduciary Net Position (located in the Financial Section) as of December 31, 2019, net position totaled \$9,040,666,951 at fair value; compared to \$7,914,035,291 the prior year. This represents an increase of 14.24%.

For the Public Employee Pension Plan, there is a difference of approximately \$331 million between market and actuarial value of assets. The actuarial value of assets on this basis is \$7,459,695,656, which is \$141 million higher than last year's actuarial value of \$7,318,379,669.

For the Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Pension Plan, there is an approximate difference of \$6,398,345 between market and actuarial value of assets. The actuarial value of assets on this basis is \$147,895,921, which is 3.62% higher than last year's value of \$142,734,809.

For the Volunteer Firefighter, EMT, and Search & Rescue Pension Plan, there is an approximate difference of \$3,385,747 between market value and actuarial value of assets. The actuarial value of assets on this basis is \$83,527,771, which is 2.11% higher than last year's value of \$81,800,847.

For the Paid Firemen's Pension Plan A, there is an approximate difference of \$4.4 million between market value and actuarial value of assets. The actuarial value of assets on this basis is \$93,559,404, which is 10.62% lower than last year's value of \$104,673,993.

For the Paid Firemen's Pension Plan B, there is an approximate difference of \$6.7 million between market value and actuarial value of assets. The actuarial value of assets on this basis is \$160,882,389, which is 6.39% higher than last year's value of \$151,224,958.

For the Wyoming Judicial Pension Plan, there is an approximate difference of \$1,326,417 between market value and actuarial value of assets. The actuarial value of assets on this basis is \$32,585,154, which is 7.40% higher than last year's value of \$30,341,215.

For the Wyoming Law Enforcement Pension Plan, there is an approximate difference of \$29.1 million between market value and actuarial value of assets. The actuarial value of assets on this basis is \$671,746,944, which is 4.74% higher than last year's value of \$641,342,345.

For the Air Guard Firefighters Pension Plan, there is an approximate difference of \$321,942 between market value and actuarial value of assets. The actuarial value of assets on this basis is \$8,193,354, which is 6.26% higher than last year's value of \$7,710,523.

Results of Actuarial Valuation

An actuarial cost procedure, known as the individual entry age normal actuarial cost method, for funding all benefits has been utilized. This method is used in situations where a cost is desired which will remain relatively level as a percentage of the participating payroll.

Under the individual entry age normal actuarial method, the total contribution requirement has three components: an annual normal cost, an allowance for administrative expenses, and a payment with respect to the unfunded actuarial accrued liability (UAAL).

The annual normal cost is calculated as the level percentage of pay required over each employee's period of covered employment to fund the total expected benefits. If the average entry age remains stable, the total normal cost rate should remain a level percentage of payrolls.

The normal cost payments are not sufficient to finance the benefit program when there is an unfunded actuarial liability. An unfunded actuarial liability may be created by changes in the benefits, actuarial assumptions, or funding method and by experience, which differs from that projected by the actuarial assumptions. When plan assets exceed the actuarial liability, there is a negative unfunded liability indicating that past changes and experience have been favorable.

The cost of funding (or amortizing) the unfunded actuarial accrued liability (UAAL) was calculated over an open period. This methodology was adopted by the Retirement Board effective January 1, 2008. This amortization is added to the normal cost with administrative expenses to determine the total cost.

Schedule of Active Member Valuation Data

Funding Status

It is the responsibility of the WRS Board to develop and maintain funding policy.

One measure of the progress of funding a retirement plan is by funding ratios. The funding ratio represents the percentage of plan assets to plan liabilities, which are both measured as of a point in time. See schedule of funding progress included at the end of this section of the report.

Funding Basis –Actuarial Accrued Liability

This measure of liabilities is used in calculating pension costs. It uses the Entry Age Normal Actuarial Cost method that spreads costs as a level percentage of payrolls over a participant's working career.

For determining plan costs, a smoothed value of assets (called actuarial value) is used. Hence, for this ratio, the actuarial value of assets is used.

Public Employee Pension Plan							
Valuation Date	Reporting Agencies	Current Employees	Annual Payroll*	Annual Average Salary	% Increase In Average Salary	Average Monthly Salary	
1/1/2011	444	35,828	\$1,728,434	\$48,243	1.1%	\$4,020	
1/1/2012	475	36,070	\$1,756,856	\$48,707	1.0%	\$4,059	
1/1/2013	481	36,444	\$1,782,069	\$48,899	0.4%	\$4,075	
1/1/2014	485	36,354	\$1,782,062	\$49,020	0.2%	\$4,085	
1/1/2015	478	36,489	\$1,818,197	\$49,829	1.7%	\$4,152	
1/1/2016	479	36,577	\$1,858,678	\$50,816	2.0%	\$4,235	
1/1/2017	479	35,892	\$1,851,874	\$51,596	1.5%	\$4,300	
1/1/2018	476	35,013	\$1,784,888	\$50,978	-1.2%	\$4,248	
1/1/2019	477	34,873	\$1,781,668	\$51,090	0.2%	\$4,258	
1/1/2020	485	35,206	\$1,824,979	\$51,837	1.5%	\$4,320	

*Annual Payroll in Thousands

Wyoming State Highway Patrol, Game & Fish, and Criminal Investigator Pension Plan							
Valuation Date	Reporting Agencies	Current Employees	Annual Payroll*	Annual Average Salary	% Increase In Average Salary	Average Monthly Salary	
1/1/2011	3	322	\$23,745	\$73,741	0.9%	\$6,145	
1/1/2012	3	318	\$24,390	\$76,698	4.0%	\$6,392	
1/1/2013	3	322	\$24,425	\$75,854	-1.1%	\$6,321	
1/1/2014	3	303	\$22,745	\$75,066	-1.0%	\$6,256	
1/1/2015	3	304	\$23,140	\$76,119	1.4%	\$6,343	
1/1/2016	3	317	\$24,641	\$77,732	2.1%	\$6,478	
1/1/2017	3	315	\$24,646	\$78,242	0.7%	\$6,520	
1/1/2018	3	304	\$23,640	\$77,762	-0.6%	\$6,480	
1/1/2019	3	304	\$23,697	\$77,950	0.2%	\$6,496	
1/1/2020	3	312	\$24,676	\$79,091	1.5%	\$6,591	

*Annual Payroll in Thousands

Schedule of Active Member Valuation Data

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan						
Valuation Date	Reporting Agencies	Current Employees	Average Contribution	Average Age	Average Years of Service	
1/1/2016	128	2,379	5,370	45		11
1/1/2017	125	2,320	5,468	45		11
1/1/2018	122	2,318	5,545	45		11
1/1/2019	122	2,347	5,543	44		11
1/1/2020	121	2,417	5,604	44		11

*Note: The statutes that govern this Pension Plan specifies that contributions are to be a fixed amount per month.

Paid Firemen's Pension Plan A							
Valuation Date	Reporting Agencies	Current Employees	Annual Payroll*	Annual Average Salary	% Increase In Average Salary	Average Monthly Salary	
1/1/2011	5	8	\$552	\$68,983	-3.8%	\$5,749	
1/1/2012	5	7	\$481	\$68,753	-0.3%	\$5,729	
1/1/2013	4	7	\$486	\$69,467	1.0%	\$5,789	
1/1/2014	2	3	\$198	\$66,135	-4.8%	\$5,511	
1/1/2015	2	3	\$179	\$59,829	-9.5%	\$4,986	
1/1/2016	2	3	\$195	\$65,074	8.8%	\$5,423	
1/1/2017	2	3	\$195	\$65,074	0.0%	\$5,423	
1/1/2018	2	2	\$134	\$67,077	3.1%	\$5,590	
1/1/2019	2	1	\$66	\$65,621	-2.2%	\$5,468	
1/1/2020	1	1	\$66	\$65,621	0.0%	\$5,468	

*Annual Payroll in Thousands

Paid Firemen's Pension Plan B							
Valuation Date	Reporting Agencies	Current Employees	Annual Payroll*	Annual Average Salary	% Increase In Average Salary	Average Monthly Salary	
1/1/2011	14	327	\$22,517	\$68,860	2.6%	\$5,738	
1/1/2012	15	328	\$22,678	\$69,141	0.4%	\$5,762	
1/1/2013	16	356	\$24,211	\$68,008	-1.6%	\$5,667	
1/1/2014	16	368	\$25,596	\$69,554	2.3%	\$5,796	
1/1/2015	16	369	\$27,091	\$73,417	5.6%	\$6,118	
1/1/2016	16	372	\$27,512	\$73,957	0.7%	\$6,163	
1/1/2017	16	371	\$29,409	\$79,268	7.2%	\$6,606	
1/1/2018	16	363	\$27,481	\$75,706	-4.5%	\$6,309	
1/1/2019	16	365	\$28,729	\$78,710	4.0%	\$6,559	
1/1/2020	16	374	\$29,272	\$78,267	-0.6%	\$6,522	

*Annual Payroll in Thousands

Schedule of Active Member Valuation Data

Judicial Pension Plan						
Valuation Date	Reporting Agencies	Current Employees	Annual Payroll*	Annual Average Salary	% Increase In Average Salary	Average Monthly Salary
1/1/2011	1	40	\$4,867	\$121,667	1.7%	\$10,139
1/1/2012	1	40	\$4,862	\$121,544	-0.1%	\$10,129
1/1/2013	1	41	\$5,411	\$131,967	8.6%	\$10,997
1/1/2014	1	44	\$6,214	\$141,222	7.0%	\$11,769
1/1/2015	1	46	\$6,602	\$143,514	1.6%	\$11,960
1/1/2016	1	46	\$6,624	\$144,001	0.3%	\$12,000
1/1/2017	1	46	\$6,625	\$144,032	0.0%	\$12,003
1/1/2018	1	47	\$6,820	\$145,114	0.8%	\$12,093
1/1/2019	1	47	\$6,866	\$146,094	0.7%	\$12,175
1/1/2020	1	50	\$7,707	\$154,139	5.5%	\$12,845

*Annual Payroll in Thousands

Law Enforcement Pension Plan						
Valuation Date	Reporting Agencies	Current Employees	Annual Payroll*	Annual Average Salary	% Increase In Average Salary	Average Monthly Salary
1/1/2011	78	2879	\$154,652	\$53,717	0.7%	\$4,476
1/1/2012	78	2847	\$155,482	\$54,613	1.7%	\$4,551
1/1/2013	80	2834	\$157,764	\$55,668	1.9%	\$4,639
1/1/2014	80	2808	\$154,072	\$54,869	-1.4%	\$4,572
1/1/2015	78	2755	\$156,792	\$56,912	3.7%	\$4,743
1/1/2016	78	2761	\$161,357	\$58,442	2.7%	\$4,870
1/1/2017	78	2719	\$160,073	\$58,872	0.7%	\$4,906
1/1/2018	78	2661	\$155,696	\$58,510	-0.6%	\$4,876
1/1/2019	81	2662	\$159,748	\$60,010	2.6%	\$5,001
1/1/2020	81	2660	\$164,758	\$61,939	3.2%	\$5,162

*Annual Payroll in Thousands

Air Guard Firefighters Pension Plan						
Valuation Date	Reporting Agencies	Current Employees	Annual Payroll*	Annual Average Salary	% Increase In Average Salary	Average Monthly Salary
1/1/2012	1	24	\$1,523	\$63,448	1.6%	\$5,287
1/1/2013	1	31	\$1,866	\$60,206	-5.1%	\$5,017
1/1/2014	1	31	\$1,805	\$58,236	-3.3%	\$4,853
1/1/2015	1	38	\$2,215	\$58,278	0.1%	\$4,857
1/1/2016	1	36	\$2,243	\$62,318	6.9%	\$5,193
1/1/2017	1	35	\$2,060	\$58,846	-5.6%	\$4,904
1/1/2018	1	38	\$2,208	\$58,116	-1.2%	\$4,843
1/1/2019	1	41	\$2,400	\$58,535	0.7%	\$4,878
1/1/2020	1	41	\$2,374	\$57,903	-1.1%	\$4,825

Note: The Air Guard Firefighters Pension Plan was separated from the Public Employee Pension Plan on 01/01/2011.

*Annual Payroll in Thousands

Schedule of Retirees & Beneficiaries Added to & Removed from Rolls

Public Employee Pension Plan								
Year	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits** (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)
	Number	Annual Pension Benefits* (\$)	Number	Annual Pension Benefits* (\$)				
2010	1,388	31,055	-562	-6,314	19,742	331	8.6	\$15,774
2011	1,538	34,517	-592	-7,020	20,688	339	8.8	\$16,382
2012	1,497	35,647	-585	-6,920	21,600	368	8.5	\$17,020
2013	1,745	39,634	-614	-8,228	22,731	399	8.5	\$17,555
2014	1,755	42,076	-726	-9,207	23,760	432	8.2	\$18,178
2015	1,657	38,446	-689	-9,453	24,728	461	6.7	\$18,639
2016	1,768	43,328	-728	-9,191	25,768	495	7.4	\$19,211
2017	1,806	43,470	-766	-10,396	26,808	528	6.7	\$19,700
2018	1,786	41,353	-812	-10,936	27,782	559	5.8	\$20,104
2019	1,773	42,281	-805	-11,779	28,750	589	5.5	\$20,488

* Amounts in Thousands ** Amounts in Millions

Wyoming State Highway Patrol, Game & Fish, and Criminal Investigator Pension Plan								
Fiscal Year End	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)
	Number	Annual Pension Benefits (\$)	Number	Annual Pension Benefits (\$)				
2010	15	705,497	-5	-82,482	268	6,885,900	10.0	\$25,694
2011	15	576,180	-3	-48,554	280	7,413,526	7.7	\$26,477
2012	14	442,263	-10	-164,287	284	7,691,502	3.8	\$27,083
2013	12	524,215	-6	-150,013	290	8,065,703	4.9	\$27,813
2014	29	835,107	-11	-292,130	308	8,608,680	6.7	\$27,950
2015	20	714,877	-8	-176,195	320	9,147,362	6.3	\$28,586
2016	15	467,619	-12	-191,375	323	9,523,606	4.1	\$29,485
2017	19	715,125	-12	-232,044	330	10,006,686	5.1	\$30,323
2018	14	493,355	-4	-54,193	340	10,445,848	4.4	\$30,723
2019	18	732,241	-7	-137,131	351	11,040,958	5.7	\$31,456

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan								
Fiscal Year End	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)
	Number	Annual Pension Benefits (\$)	Number	Annual Pension Benefits (\$)				
2014	106	368,168	-35	-114,448	1,251	4,250,343	N/A	\$3,398
2015*	81	1,113,515	-25	-74,858	1,307	5,289,000	24.4	\$4,047
2016*	108	461,121	-40	-130,252	1,375	5,619,869	6.3	\$4,087
2017	99	414,899	-41	-139,273	1,433	5,895,495	4.9	\$4,114
2018	101	459,658	-39	-123,709	1,495	6,231,444	5.7	\$4,168
2019	92	379,616	-32	-109,286	1,555	6,501,774	4.3	\$4,181

* Added to amounts include increased benefit amounts under the provisions of the new plan.

Note: Information not available before 2014.

Schedule of Retirees & Beneficiaries Added to & Removed from Rolls

Paid Firemen's Pension Plan A									
Fiscal Year End	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)	
	Number	Annual Pension Benefits (\$)	Number	Annual Pension Benefits (\$)					
2010	6	740,209	-9	-399,019	304	13,814,160	2.5	\$45,441	
2011	7	767,782	-12	-579,402	299	14,002,540	1.4	\$46,831	
2012	3	481,949	-7	-308,184	295	14,176,304	1.2	\$48,055	
2013	10	935,977	-13	-635,129	292	14,477,152	2.1	\$49,579	
2014	4	578,284	-7	-351,046	289	14,704,390	1.6	\$50,880	
2015	7	820,788	-14	-665,571	282	14,859,607	1.1	\$52,694	
2016	3	618,031	-3	-180,254	282	15,297,384	3.0	\$54,246	
2017	6	737,535	-7	-376,512	281	15,658,407	2.4	\$55,724	
2018	4	698,064	-9	-455,714	276	15,900,757	1.6	\$57,611	
2019	3	698,898	-9	-422,589	270	16,177,066	1.7	\$59,257	

Paid Firemen's Pension Plans B									
Fiscal Year End	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)	
	Number	Annual Pension Benefits (\$)	Number	Annual Pension Benefits (\$)					
2010	10	383,726	0	0	55	1,821,843	26.7	\$33,124	
2011	12	535,099	0	0	67	2,356,942	29.4	\$35,178	
2012	7	278,412	0	0	74	2,635,354	11.8	\$35,613	
2013	7	274,075	0	0	81	2,909,429	10.4	\$35,919	
2014	11	481,088	-2	-71,846	90	3,318,671	14.1	\$36,874	
2015	11	631,130	-1	-13,610	100	3,936,191	18.6	\$39,362	
2016	15	726,211	0	0	115	4,662,401	18.5	\$40,543	
2017	14	587,654	-1	-12,361	128	5,237,694	12.3	\$40,919	
2018	12	475,307	-3	-60,290	137	5,652,712	7.9	\$41,261	
2019	14	494,827	0	0	151	6,147,539	8.8	\$40,712	

Judicial Pension Plan									
Fiscal Year End	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)	
	Number	Annual Pension Benefits (\$)	Number	Annual Pension Benefits (\$)					
2010	3	127,495	-2	-133,897	11	610,572	-1.0	\$55,507	
2011	0	0	0	0	11	610,572	0.0	\$55,507	
2012	0	0	0	0	11	610,572	0.0	\$55,507	
2013	2	113,010	0	0	13	723,582	18.5	\$55,660	
2014	3	107,248	0	0	16	830,830	14.8	\$51,927	
2015	2	150,491	0	0	18	981,321	18.1	\$54,518	
2016	0	0	0	0	18	981,321	0.0	\$54,518	
2017	4	307,625	0	0	22	1,288,946	31.4	\$58,588	
2018	5	364,563	-1	-67,372	26	1,586,136	23.1	\$61,005	
2019	4	279,699	0	0	30	1,865,835	17.6	\$62,195	

Schedule of Retirees & Beneficiaries Added to & Removed from Rolls

Law Enforcement Pension Plan								
Fiscal Year End	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)
	Number	Annual Pension Benefits (\$)	Number	Annual Pension Benefits (\$)				
2010	75	1,881,618	-12	-109,159	719	16,467,434	12.0	\$22,903
2011	93	2,330,905	-7	-101,024	805	18,697,315	13.5	\$23,226
2012	54	1,418,567	-7	-62,989	852	20,052,893	7.3	\$23,536
2013	77	2,048,141	-12	-155,942	917	21,945,092	9.4	\$23,931
2014	98	2,598,158	-14	-250,849	1,001	24,292,401	10.7	\$24,268
2015	83	2,229,651	-14	-234,679	1,070	26,287,373	8.2	\$24,568
2016	91	2,618,016	-14	-239,572	1,147	28,665,817	9.1	\$24,992
2017	83	2,325,313	-28	-478,242	1,202	30,512,888	6.4	\$25,385
2018	89	2,817,707	-17	-254,449	1,274	33,076,146	8.4	\$25,962
2019	111	3,086,125	-22	-461,992	1,363	35,700,279	7.9	\$26,192

Air Guard Firefighters Pension Plan								
Fiscal Year End	Added to Rolls		Removed from Rolls		Rolls-End of Year Number	Annual Pension Benefits (\$)	% Change in Annual Pension Benefit	Average Annual Pension Benefit (\$)
	Number	Annual Pension Benefits (\$)	Number	Annual Pension Benefits (\$)				
2010	0	0	0	0	2	40,129	0.0	\$20,065
2011	0	0	0	0	2	40,129	0.0	\$20,065
2012	0	0	0	0	2	40,129	0.0	\$20,065
2013	1	46,109	0	0	3	86,238	114.9	\$28,746
2014	2	66,242	0	0	5	152,480	76.8	\$30,496
2015	1	40,663	0	0	6	193,143	26.7	\$32,191
2016	3	138,890	0	0	9	332,033	71.9	\$36,893
2017	1	32,744	0	0	10	364,776	9.9	\$36,478
2018	1	27,581	0	0	11	392,357	7.6	\$35,669
2019	2	71,764	0	0	13	464,121	18.3	\$35,702

Solvency Test

Testing the financial solvency of a retirement system can be done in several ways. The funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the system are level in concept and soundly executed, and if the system continues its present operations pattern for the indefinite future, the system will pay all promised benefits when due, the ultimate test of financial soundness.

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

1. Active members' contributions on deposit;
2. Liabilities for future benefits to present retired members;
3. Liabilities for service already rendered by active members.

In a system that has been following the discipline of level percent of payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired members (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 3) will be partially covered by the remainder of present assets. Generally, if the system has been using level cost financing, the funded portion of liability 3 will increase over time. Liability 3 being fully funded is very rare.

The tables that follow illustrate the progress of funding liability (3) of Wyoming Retirements System's nine plans, and is indicative of each plans' policy to follow the discipline of level contribution rate funding.

Public Employees Pension Plan								
Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets			
					-1	-2	-3	
1/1/2012	1,226,273	3,455,741	2,355,173	5,761,222	100%	100%	45.8%	
1/1/2013	1,286,010	3,724,948	2,308,247	5,749,968	100%	100%	32.0%	
1/1/2014	1,333,533	4,251,120	2,460,394	6,244,502	100%	100%	26.8%	
1/1/2015	1,394,083	4,600,840	2,375,744	6,609,612	100%	100%	25.9%	
1/1/2016	1,472,112	4,897,375	2,343,866	6,814,920	100%	100%	19.0%	
1/1/2017	1,491,205	5,255,364	2,292,735	7,063,052	100%	100%	13.8%	
1/1/2018	1,504,862	5,994,582	2,089,209	7,314,683	100%	97.0%	0.0%	
1/1/2019	1,527,497	6,322,069	2,020,049	7,318,380	100%	92.0%	0.0%	
1/1/2020	1,549,304	6,649,767	1,996,975	7,459,696	100%	89.0%	0.0%	

* Amounts in Thousands

Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Pension Plan								
Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets			
					-1	-2	-3	
1/1/2012	27,073	77,423	28,945	6,118	100%	100%	5.6%	
1/1/2013	27,760	79,144	28,676	106,038	100%	96.0%	0.0%	
1/1/2014	31,224	87,447	31,318	116,151	100%	97.0%	0.0%	
1/1/2015	32,458	93,060	30,684	123,681	100%	98.0%	0.0%	
1/1/2016	33,664	100,994	29,864	128,598	100%	94.0%	0.0%	
1/1/2017	25,855	103,925	29,471	134,609	100%	95.0%	0.0%	
1/1/2018	36,388	119,189	25,035	140,712	100%	88.0%	0.0%	
1/1/2019	37,280	124,477	24,776	142,735	100%	85.0%	0.0%	
1/1/2020	37,807	131,970	25,186	147,896	100%	83.0%	0.0%	

* Amounts in Thousands

Solvency Test

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan

Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets		
					-1	-2	-3
1/1/2016	5,370	60,710	36,199	76,098	100%	100%	27.7%
1/1/2017	5,468	61,195	35,583	78,177	100%	100%	32.4%
1/1/2018	5,545	67,352	36,195	81,169	100%	100%	22.9%
1/1/2019	5,543	71,401	35,344	81,801	100%	100%	13.7%
1/1/2020	5,604	74,093	35,563	83,528	100%	100%	10.8%

The Volunteer Firefighter & Emergency Medical Technician Plans were consolidated on July 1, 2015. Search & Rescue Volunteers were added to the plan July 1, 2019.

* Amounts in Thousands

Paid Firemen's Pension Plan A

Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets		
					-1	-2	-3
1/1/2012	226	189,373	6,085	153,371	100%	80.9%	0.0%
1/1/2013	226	188,733	6,240	139,181	100%	73.6%	0.0%
1/1/2014	96	203,199	2,960	140,917	100%	69.3%	0.0%
1/1/2015	96	202,385	2,735	138,088	100%	68.2%	0.0%
1/1/2016	96	201,512	3,081	30,776	100%	64.8%	0.0%
1/1/2017	79	202,702	3,171	124,435	100%	61.3%	0.0%
1/1/2018	47	226,793	2,487	117,019	100%	51.6%	0.0%
1/1/2019	19	225,859	1,223	104,674	100%	46.3%	0.0%
1/1/2020	19	225,042	1,221	93,559	100%	41.6%	0.0%

*Amounts in Thousands

Paid Firemen's Pension Plan B

Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets		
					-1	-2	-3
1/1/2012	11,511	29,264	37,989	86,130	100%	100%	119.4%
1/1/2013	12,909	32,551	50,005	91,248	100%	100%	114.5%
1/1/2014	14,398	36,923	53,304	103,693	100%	100%	98.3%
1/1/2015	16,382	41,354	57,416	115,323	100%	100%	100.3%
1/1/2016	17,298	50,930	57,713	124,496	100%	100%	97.5%
1/1/2017	18,890	57,946	58,399	134,451	100%	100%	98.7%
1/1/2018	20,129	70,763	60,090	144,816	100%	100%	89.7%
1/1/2019	21,031	77,830	63,856	151,225	100%	100%	82.0%
1/1/2020	22,429	84,280	64,783	160,882	100%	100%	83.6%

* Amounts in Thousands

Wyoming Judicial Pension Plan								
Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets			
					-1	-2	-3	
1/1/2012	4,310	5,520	5,829	16,748	100%	100%	100.0%	
1/1/2013	4,846	5,300	6,780	17,549	100%	100%	100.0%	
1/1/2014	5,203	6,682	7,780	20,261	100%	100%	100.0%	
1/1/2015	5,800	7,659	7,784	22,728	100%	100%	100.0%	
1/1/2016	6,235	9,046	7,724	24,634	100%	100%	100.0%	
1/1/2017	7,019	8,860	8,581	26,773	100%	100%	100.0%	
1/1/2018	6,833	12,686	9,567	29,063	100%	100%	99.7%	
1/1/2019	6,491	15,689	8,888	30,341	100%	100%	91.8%	
1/1/2020	6,722	18,452	9,096	32,585	100%	100%	81.5%	

* Amounts in Thousands

Wyoming Law Enforcement Pension Plan								
Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets			
					-1	-2	-3	
1/1/2012	106,872	210,367	123,266	422,203	100%	100%	85.2%	
1/1/2013	116,003	229,727	127,815	437,235	100%	100%	71.6%	
1/1/2014	121,916	260,467	144,399	486,818	100%	100%	72.3%	
1/1/2015	128,199	286,400	149,643	528,543	100%	100%	76.1%	
1/1/2016	133,912	309,474	153,470	557,126	100%	100%	74.1%	
1/1/2017	137,265	335,397	155,423	590,466	100%	100%	75.8%	
1/1/2018	140,029	389,302	179,627	625,562	100%	100%	53.6%	
1/1/2019	140,664	421,539	187,322	641,342	100%	100%	42.2%	
1/1/2020	142,464	453,526	198,964	671,747	100%	100%	38.1%	

* Amounts in Thousands

Air Guard Firefighters Pension Plan								
Valuation Date	(1) Active Member Contributions*	(2) Retirees and Beneficiaries*	(3) Active Members* (Employer Financed Portion)	Valuation Assets*	Portion of Accrued Liabilities Covered by Assets			
					-1	-2	-3	
1/1/2012	2,691	571	1,119	3,751	100%	100%	43.7%	
1/1/2013	3,102	554	1,196	4,450	100%	100%	66.3%	
1/1/2014	3,290	1,003	1,512	5,175	100%	100%	58.3%	
1/1/2015	3,551	1,876	1,185	5,929	100%	100%	42.4%	
1/1/2016	3,716	2,494	1,137	6,617	100%	100%	36.7%	
1/1/2017	2,973	4,093	732	6,801	100%	94.0%	0.0%	
1/1/2018	3,141	4,840	735	7,411	100%	88.0%	0.0%	
1/1/2019	3,388	4,980	646	7,711	100%	87.0%	0.0%	
1/1/2020	3,254	5,922	451	8,193	100%	83.0%	0.0%	

* Amounts in Thousands

Analysis of Financial Experience

Summary of Unfunded Actuarial Accrued Liabilities

Unfunded actuarial accrued liabilities (UAAL) are the difference between actuarially calculated liabilities for service already rendered and the assets of the retirement fund. It is natural for unfunded liabilities to exist for the System's nine retirement plans.

The statutes governing the Wyoming Retirement System's plans requires that these liabilities be financed systematically over future years.

Benefits to retirees are "fully funded," that is, assets reserved for benefits currently being paid equal liabilities for those benefits. Liabilities for members are based on service rendered toward their retirement benefits which will be payable in the future. Unfunded actuarial accrued liabilities exist because liabilities for such service by members exceed assets currently on hand for such future benefits.

In an inflationary economy, the value of dollars is decreasing. Looking at just the dollar amounts of unfunded accrued liabilities can be misleading. Unfunded accrued liabilities dollars divided by active employee payroll dollars provide a meaningful index, which helps understanding. The smaller the ratio of unfunded liabilities compared to active member payroll the stronger the system.

Observation of this relative index over a period of years will give an indication of whether the system is becoming financially stronger or weaker.

Gains & Losses in Accrued Liabilities during the Year Ended 12/31/2019				
Resulting from Differences between Assumed Experience & Actual Experience				
Type of Activity	Public Employees Pension Plan	State Patrol, Game & Fish Warden, and Criminal Investigator Pension Plan	Volunteer Firefighter, EMT, and Search & Rescue Pension Plan	Paid Firemen's Pension Plan A
Age & Service Retirements	(\$27,448,528)	(\$733,397)	\$289,013	\$68,399
If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss				
Disability Retirements	145,682	42,423	-	-
If disability claims are less than assumed, there is a gain. If more claims, a loss.				
Death-In-Service Benefits	39,728	66,973	(11,733)	-
If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.				
Withdrawal From Employment	(21,276,354)	(210,952)	(443,017)	-
If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases a loss.				
Rehires and New Hires	(3,732,372)	-	(142,749)	-
New employees entering the plan will create a loss.				
Pay Increases	7,534,464	(585,603)	-	-
If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.				
Contribution Income*	(47,086,629)	361,744	(419,720)	(17,543,085)
If more contributions are received than expected, there is a gain. If less, a loss.				
Investment Income	(68,903,898)	(1,270,143)	(850,809)	(1,699,807)
If there is greater investment income than assumed, there is a gain. If less, a loss.				
Death After Retirement	1,832,081	(111,910)	(14,114)	(205,344)
If retirees live longer than assumed, there is a loss. If not as long, a gain.				
Service Purchases	(3,843,407)	(669,237)	(5,596)	-
This loss is offset by the employee contribution to the plan for the service purchase. The net effect of service purchases is zero.				
Other	(8,812,142)	85,588	(33,291)	215,625
Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, etc.				
Gain (Loss) During Year From Financial Experience	(\$171,551,375)	(\$3,024,514)	(\$1,632,016)	(\$19,164,212)

*Contribution Income includes the additional employee contributions for service purchases. These additional contributions offset the liability loss due to service purchases.

Analysis of Financial Experience

Gains & Losses in Accrued Liabilities during the Year Ended 12/31/2019				
Resulting from Differences between Assumed Experience & Actual Experience				
Type of Activity	Paid Firemen's Pension Plan B	Judicial Pension Plan	Law Enforcement Pension Plan	Air Guard Firefighters Pension Plan
Age & Service Retirements	(\$37,372)	(\$245,074)	(\$817,391)	(\$144,612)
If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss				
Disability Retirements	144,594	806	(569,381)	1,985
If disability claims are less than assumed, there is a gain. If more claims, a loss.				
Death-In-Service Benefits	(7,770)	10,690	537,786	2,811
If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.				
Withdrawal From Employment	(316,566)	(20,757)	(3,872,154)	(49,926)
If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases a loss.				
Rehires and New Hires	(14,605)	(141,954)	(389,117)	-
New employees entering the plan will create a loss.				
Pay Increases	4,294,658	(155,838)	(666,491)	50,386
If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.				
Contribution Income*	(1,222,993)	485,202	(1,553,380)	128,863
If more contributions are received than expected, there is a gain. If less, a loss.				
Investment Income	(1,137,815)	(230,973)	(5,222,790)	(65,441)
If there is greater investment income than assumed, there is a gain. If less, a loss.				
Death After Retirement	(581,903)	(201,212)	(637,981)	(22,337)
If retirees live longer than assumed, there is a loss. If not as long, a gain.				
Service Purchases	(80,386)	(353,862)	(767,393)	-
This loss is offset by the employee contribution to the plan for the service purchase. The net effect of service purchases is zero.				
Other	(194,910)	(117,808)	(687,207)	(24,442)
Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, etc.				
Gain (Loss) During Year From Financial Experience	\$844,932	(\$970,780)	(\$14,645,499)	(\$122,713)

*Contribution Income includes the additional employee contributions for service purchases. These additional contributions offset the liability loss due to service purchases.

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL)(b-a)	Funded Ratio as a Percentage (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
Public Employees Pension Plan:						
January 1, 2012	\$5,761,221,926	\$7,037,186,665	\$1,275,964,739	81.9%	\$1,756,856,648	72.6%
January 1, 2013	5,749,967,972	7,319,204,726	1,569,236,754	78.6%	1,782,069,208	88.1%
January 1, 2014	6,244,501,550	8,045,046,972	1,800,545,422	77.6%	1,782,062,471	101.0%
January 1, 2015	6,609,612,342	8,370,666,482	1,761,054,140	79.0%	1,818,197,022	96.9%
January 1, 2016	6,814,919,591	8,713,353,524	1,898,433,933	78.2%	1,858,678,687	102.1%
January 1, 2017	7,063,051,856	9,039,303,831	1,976,251,975	78.1%	1,851,873,634	106.7%
January 1, 2018	7,314,683,343	9,588,652,976	2,273,969,633	76.3%	1,784,888,475	127.4%
January 1, 2019	7,318,379,669	9,869,615,224	2,551,235,555	74.2%	1,781,668,069	143.2%
January 1, 2020	7,459,695,656	10,196,045,970	2,736,350,314	73.2%	1,824,979,015	149.9%
State Patrol, Game and Fish Warden and Criminal Investigator Pension Plan:						
January 1, 2012	\$106,117,900	\$133,440,800	\$27,322,900	79.5%	\$24,389,987	112.0%
January 1, 2013	106,067,552	137,580,636	31,513,084	77.1%	24,424,919	129.0%
January 1, 2014	116,151,164	149,989,392	33,838,229	77.4%	22,744,938	148.8%
January 1, 2015	123,680,718	156,201,302	32,520,584	79.2%	23,140,300	140.5%
January 1, 2016	128,597,582	164,522,386	35,924,804	78.2%	24,641,033	145.8%
January 1, 2017	134,609,253	169,251,572	34,642,319	79.5%	24,646,258	140.6%
January 1, 2018	140,712,382	180,615,436	39,903,054	77.9%	23,639,756	168.8%
January 1, 2019	142,734,809	186,532,553	43,797,744	76.5%	23,696,821	184.8%
January 1, 2020	147,895,921	194,964,001	47,068,080	75.9%	24,676,346	190.7%
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan:						
January 1, 2016	\$76,097,619	\$102,278,423	\$26,180,804	74.4%	n/a	n/a
January 1, 2017	78,176,796	102,244,853	24,068,057	76.5%	n/a	n/a
January 1, 2018	81,168,922	109,091,945	27,923,023	74.4%	n/a	n/a
January 1, 2019	81,800,847	112,287,528	30,486,681	72.8%	n/a	n/a
January 1, 2020	83,527,771	115,260,425	31,732,654	72.5%	n/a	n/a

Note: The Volunteer Firefighter and Emergency Medical Technician Pension Plan was consolidated into one plan on July 1, 2015. Search and Rescue Volunteers were added to the plan on July 1, 2019.

n/a - not applicable

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL)(b-a)	Funded Ratio as a Percentage (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) /c)
Paid Firemen's Pension Plan A:						
January 1, 2012	\$153,370,736	\$195,685,206	\$42,314,470	78.4%	\$481,271	8,792.2%
January 1, 2013	139,181,449	195,199,195	56,017,746	71.3%	486,270	11,519.9%
January 1, 2014	140,917,231	206,255,267	65,338,036	68.3%	198,404	32,931.8%
January 1, 2015	138,087,746	205,216,099	67,128,353	67.3%	179,486	37,400.3%
January 1, 2016	130,776,292	204,689,787	73,912,495	63.9%	195,221	37,860.9%
January 1, 2017	124,435,245	205,952,912	81,517,667	60.4%	195,221	41,756.6%
January 1, 2018	117,019,469	229,327,120	112,307,651	51.0%	134,155	83,714.8%
January 1, 2019	104,673,993	227,100,614	122,426,621	46.1%	65,621	186,566.2%
January 1, 2020	93,559,404	226,282,373	132,722,969	41.4%	65,621	202,256.9%
Paid Firemen's Pension Plan B:						
January 1, 2012	\$86,130,061	\$78,763,646	\$(7,366,415)	109.4%	\$22,678,277	-32.5%
January 1, 2013	91,248,379	85,464,453	(5,783,926)	106.8%	24,210,827	-23.9%
January 1, 2014	103,693,169	104,624,698	931,529	99.1%	25,596,043	3.6%
January 1, 2015	115,323,104	115,152,708	(170,396)	100.1%	27,090,867	-0.6%
January 1, 2016	124,496,124	125,941,369	1,445,245	98.9%	27,512,076	5.3%
January 1, 2017	134,450,595	135,234,856	784,261	99.4%	29,408,598	2.7%
January 1, 2018	144,816,308	150,981,756	6,165,448	95.9%	27,481,361	22.4%
January 1, 2019	151,224,958	162,716,621	11,491,663	92.9%	28,729,092	40.0%
January 1, 2020	160,882,389	171,491,696	10,609,307	93.8%	29,271,925	36.2%
Judicial Pension Plan:						
January 1, 2012	\$16,747,907	\$15,657,847	\$(1,090,060)	107.0%	\$4,861,758	-22.4%
January 1, 2013	17,549,360	16,925,219	(624,141)	103.7%	5,410,651	-11.5%
January 1, 2014	20,260,811	19,664,408	(596,403)	103.0%	6,213,775	-9.6%
January 1, 2015	22,728,268	21,243,000	(1,485,268)	107.0%	6,601,641	-22.5%
January 1, 2016	24,633,859	23,004,559	(1,629,300)	107.1%	6,624,052	-24.6%
January 1, 2017	26,773,208	24,459,333	(2,313,875)	109.5%	6,625,476	-34.9%
January 1, 2018	29,062,780	29,087,091	24,311	99.9%	6,820,351	0.4%
January 1, 2019	30,341,215	31,067,933	726,718	97.7%	6,866,395	10.6%
January 1, 2020	32,585,154	34,270,621	1,685,467	95.1%	7,706,958	21.9%

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL)(b-a)	Funded Ratio as a Percentage (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) /c)
Law Enforcement Pension Plan:						
January 1, 2012	\$422,202,959	\$440,504,864	\$18,301,905	95.8%	\$155,481,933	11.8%
January 1, 2013	437,235,498	473,544,657	36,309,158	92.3%	157,764,488	23.0%
January 1, 2014	486,817,860	526,782,470	39,964,610	92.4%	154,071,943	25.9%
January 1, 2015	528,542,864	564,241,353	35,698,489	93.7%	156,791,728	22.8%
January 1, 2016	557,125,768	596,856,177	39,730,409	93.3%	161,357,314	24.6%
January 1, 2017	590,466,391	628,084,812	37,618,421	94.0%	160,072,828	23.5%
January 1, 2018	625,562,038	708,957,832	83,395,794	88.2%	155,696,162	53.6%
January 1, 2019	641,342,345	749,524,885	108,182,540	85.6%	159,747,760	67.7%
January 1, 2020	671,746,944	794,954,725	123,207,781	84.5%	164,757,930	74.8%
Air Guard Firefighters Pension Plan:						
January 1, 2012	\$3,750,702	\$4,380,850	\$630,148	85.6%	\$1,522,749	41.4%
January 1, 2013	4,449,572	4,852,245	402,673	91.7%	1,866,393	21.6%
January 1, 2014	5,174,861	5,804,761	629,900	89.1%	1,805,329	34.9%
January 1, 2015	5,929,006	6,611,411	682,405	89.7%	2,214,578	30.8%
January 1, 2016	6,616,954	7,336,724	719,770	90.2%	2,243,456	32.1%
January 1, 2017	6,800,719	7,798,108	997,389	87.2%	2,059,595	48.4%
January 1, 2018	7,411,093	8,715,990	1,304,897	85.0%	2,208,407	59.1%
January 1, 2019	7,710,523	9,012,642	1,302,119	85.6%	2,399,940	54.3%
January 1, 2020	8,193,354	9,627,272	1,433,918	85.1%	2,374,043	60.4%



Comprehensive Annual Financial Report 2019

STATISTICAL SECTION



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The Statistical Section contains schedules, as described below, which are derived from information in the annual actuarial valuation. These Schedules provide detailed information on both financial and census information on each plan. The Wyoming Retirement System acts as Administrator to eight defined benefit pension plans. The major features of each plan are discussed in the Management Discussion and Analysis Section and Note 2 to the Basic Financial Statements.

Changes in Fiduciary Net Position:

The Changes in Net Position 2010 – 2019 statements are provided to present comparative information on 10 years of historical financial information on each plan for additions and deductions. Significant fluctuations and/or trends for the current year have been discussed in the Management Discussion and Analysis.

Schedule of Average Monthly Benefit Payments:

This schedule outlines the number of retirees and their average benefit by years of service for the last 10 years.

Pensions in Force:

The Pensions in Force schedule for the Public Employees Pension Plan shows the benefit by option selected (male & female), as well as census data for 2019 of the total number of pensions awarded by amount range and option. A synopsis of the pension options available to the retirees is presented at the end of this section.

The Pensions in Force schedule for the other seven plans stratify the number of retirees receiving a pension by their age and the monthly amount of benefit received. Disability census information is also presented as a part of this schedule.

Member and Benefit Recipients Statistics:

This schedule is intended to show by plan both the active members in the plans as of December 31, 2019, and a reconciliation of the number of retirees for the year ended December 31, 2019. It also shows the average monthly benefit of the retirees for the year then ended.

Active Membership:

Information presented in the two Active Membership schedules is for the Public Employee Pension Plan, as this plan represents in excess of 80% of all members in the plans administered by the Wyoming Retirement System. The information provided shows the number of active members stratified by both employer type and age bracket.

Affiliated Employers:

This gives the reader more detailed census information about employers by plan and the names of the participating employers.

Changes in Fiduciary Net Position

Public Employees Pension Plan										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Employee Contributions	153,582	146,255	145,008	147,650	147,360	137,145	122,611	119,052	116,692	99,352
Employer Contributions	155,457	145,912	147,037	149,619	142,666	127,930	122,137	121,027	118,652	101,296
Investment Income(loss)	1,251,519	(252,571)	923,878	454,713	(67,156)	314,706	780,556	723,468	(63,533)	638,060
Other Income	5,956	6,596	6,454	6,642	8,126	5,614	6,141	3,621	3,905	3,526
Total	1,566,514	46,192	1,222,377	758,624	230,996	585,395	1,031,445	967,168	175,716	842,234
Deductions by Type										
Benefits										
Member	539,414	510,719	481,746	450,686	419,726	388,318	359,050	331,071	303,702	277,248
Beneficiary	39,765	37,194	35,091	32,796	30,864	29,957	28,387	26,296	25,035	23,616
Refunds	21,308	18,114	18,655	18,128	19,365	17,822	17,131	17,263	15,242	13,585
Other Expenses	310	288	313	312	313	75	-	-	3,324	-
Administrative Expenses	6,527	7,034	6,551	5,993	5,098	5,183	6,514	6,463	5,541	3,603
Total	607,324	573,349	542,356	507,915	475,366	441,355	411,082	381,093	352,844	318,052
Change in Plan Net Position	959,190	(527,157)	680,021	250,709	(244,370)	144,040	620,363	586,075	(177,128)	524,182

Note: Amounts in Thousands

Wyoming State Highway Patrol, Game & Fish Warden and Criminal Investigator Pension Plan										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Employee Contributions	3,527	3,416	3,429	3,441	3,331	3,151	2,976	2,726	2,685	2,526
Employer Contributions	3,639	3,492	3,503	3,517	3,290	3,006	2,998	2,799	2,621	2,597
Investment Income(loss)	24,467	(4,908)	17,623	8,622	(1,199)	5,836	14,444	13,286	(1,153)	11,737
Other Income	669	418	107	294	259	231	355	177	178	99
Total	32,302	2,418	24,662	15,874	5,681	12,224	20,773	18,988	4,331	16,959
Deductions by Type										
Benefits										
Member	9,923	9,311	8,856	8,517	8,025	7,489	7,129	6,826	6,377	5,740
Beneficiary	921	950	939	880	901	876	765	753	749	741
Refunds	289	351	509	323	121	368	336	287	366	316
Other Expenses	6	6	6	6	6	1	-	-	-	-
Administrative Expenses	138	139	129	115	96	97	107	85	73	49
Total	11,277	10,757	10,439	9,841	9,149	8,831	8,337	7,951	7,565	6,846
Change in Plan Net Position	21,025	(8,339)	14,223	6,033	(3,468)	3,393	12,436	11,037	(3,234)	10,113

Note: Amounts in Thousands

Changes in Fiduciary Net Position

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan					
	2019	2018	2017	2016	2015
Additions(Deletions) by Source					
Employee Contributions	432	422	418	421	398
Employer Contributions	n/a	n/a	n/a	n/a	n/a
Investment Income(loss)	13,701	(2,783)	10,036	4,940	(675)
Other Income	3,124	2,973	3,298	3,237	2,258
Total	17,257	612	13,752	8,598	1,981
Deductions by Type					
Benefits					
Member	5,775	5,439	5,138	4,915	4,288
Beneficiary	692	663	643	592	545
Refunds	40	44	33	35	35
Other Expenses	3	3	3	3	3
Administrative Expenses	89	91	89	81	73
Total	6,599	6,240	5,906	5,626	4,944
Change in Plan Net Position	10,658	(5,628)	7,846	2,972	(2,963)

Note: Amounts in Thousands

The Volunteer Firefighter & EMT Pension Plans were consolidated July 1, 2015, replacing the previous Volunteer Firemen's Pension Plan and the Volunteer Emergency Medical Technician Pension Plan.

On July 1, 2019, Search and Rescue Volunteers were added to the plan.

Changes in Fiduciary Net Position

Paid Firemen's Pension Plan A										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Employee Contributions	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Employer Contributions	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Investment Income(loss)	16,923	(3,580)	15,352	8,160	(1,107)	6,980	18,324	18,404	(1,434)	18,317
Other Income	-	-	-	-	-	-	-	243	-	-
Total	16,923	(3,580)	15,352	8,160	(1,107)	6,980	18,324	18,647	(1,434)	18,317
Deductions by Type										
Benefits										
Member	12,442	12,333	11,996	11,851	11,874	11,981	11,972	12,043	11,686	11,730
Beneficiary	3,651	3,455	3,415	3,225	2,951	2,601	2,384	2,184	2,187	1,901
Refunds	-	-	-	-	-	-	-	-	-	-
Other Expenses	5	4	6	6	6	2	-	-	-	-
Administrative Expenses	87	99	109	110	103	113	130	102	91	64
Total	16,185	15,891	15,526	15,192	14,934	14,697	14,486	14,329	13,964	13,695
Change in Plan Net Position	738	(19,471)	(174)	(7,032)	(16,041)	(7,717)	3,838	4,318	(15,398)	4,622

Note: Amounts in Thousands

n/a: Paid Firemen's Plan A contributions were suspended April 1, 1997.

Paid Firemen's Pension Plan B										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Employee Contributions	2,707	2,585	2,490	2,605	2,529	2,414	2,160	1,998	1,922	1,850
Employer Contributions	3,516	3,356	3,225	3,371	3,273	3,184	3,023	2,825	2,713	2,631
Investment Income(loss)	26,111	(5,198)	17,838	8,477	(1,159)	5,248	12,576	11,110	(962)	8,975
Other Income	80	237	289	254	397	266	30	7	-	8
Total	32,414	980	23,842	14,707	5,040	11,112	17,789	15,940	3,673	13,464
Deductions by Type										
Benefits										
Member	5,499	5,129	4,710	4,084	3,452	2,817	2,633	2,321	1,876	1,508
Beneficiary	422	345	345	260	260	274	199	199	135	135
Refunds	35	64	120	72	75	63	84	109	38	38
Other Expenses	6	5	5	6	5	1	-	-	-	-
Administrative Expenses	139	141	131	112	91	87	97	67	53	33
Total	6,101	5,684	5,311	4,534	3,883	3,242	3,013	2,696	2,102	1,714
Change in Plan Net Position	26,313	(4,704)	18,531	10,173	1,157	7,870	14,776	13,244	1,571	11,750

Note: Amounts in Thousands

Changes in Fiduciary Net Position

Wyoming Judicial Pension Plan										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Employee Contributions	675	611	604	589	585	583	551	345	429	422
Employer Contributions	1,060	960	949	926	921	917	866	610	675	663
Investment Income(loss)	5,224	(1,039)	3,549	1,679	(228)	1,027	2,432	2,137	(175)	1,748
Other Income	354	-	-	-	-	-	-	-	-	-
Total	7,313	532	5,102	3,194	1,278	2,527	3,849	3,092	929	2,833
Deductions by Type										
Benefits										
Member	1,597	1,332	1,078	892	843	687	608	544	544	557
Beneficiary	123	123	89	89	89	89	67	67	67	67
Refunds	-	-	-	-	-	-	-	98	-	-
Other Expenses	1	1	2	1	1	-	-	-	-	-
Administrative Expenses	28	28	25	22	18	17	17	14	9	6
Total	1,749	1,484	1,194	1,004	951	793	692	723	620	630
Change in Plan Net Position	5,564	(952)	3,908	2,190	327	1,734	3,157	2,369	309	2,203

Note: Amounts in Thousands

Wyoming Law Enforcement Pension Plan										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Employee Contributions	13,881	13,482	13,285	13,460	14,569	13,314	13,044	12,964	12,839	12,811
Employer Contributions	13,856	13,471	13,320	13,454	12,468	13,308	13,009	12,972	12,826	12,752
Investment Income(loss)	110,793	(22,169)	77,947	37,783	(5,372)	24,588	59,946	53,843	(4,747)	44,882
Other Income	1,206	674	701	1,258	1,068	803	550	392	671	415
Total	139,736	5,458	105,253	65,955	22,733	52,013	86,549	80,171	21,589	70,860
Deductions by Type										
Benefits										
Member	32,383	29,828	27,550	26,002	23,912	21,650	20,036	18,418	16,718	14,863
Beneficiary	2,468	2,186	2,072	1,872	1,547	1,560	1,256	1,220	1,135	948
Refunds	2,426	3,971	4,041	3,491	4,660	4,110	4,426	3,576	2,815	2,845
Other Expenses	27	24	52	26	25	6	-	-	-	-
Administrative Expenses	597	639	580	518	418	408	470	417	345	219
Total	37,901	36,648	34,295	31,909	30,562	27,734	26,188	23,631	21,013	18,875
Change in Plan Net Position	101,835	(31,190)	70,958	34,046	(7,829)	24,279	60,361	56,540	576	51,985

Note: Amounts in Thousands

Changes in Fiduciary Net Position

Air Guard Firefighters Pension Plan										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Employee Contributions	370	373	367	320	370	336	310	256	241	n/a
Employer Contributions	158	160	156	137	158	142	133	109	103	n/a
Investment Income(loss)	1,300	(254)	902	431	(55)	258	595	485	(223)	n/a
Other Income	-	72	-	57	35	1	-	121	3,324	n/a
Total	1,828	351	1,425	945	508	737	1,038	971	3,445	n/a
Deductions by Type										
Benefits										
Member	443	385	351	291	168	120	74	43	37	n/a
Beneficiary	-	-	-	-	-	-	-	-	-	n/a
Refunds	70	214	40	412	21	7	14	-	-	n/a
Other Expenses	-	-	1	-	-	-	-	-	-	n/a
Administrative Expenses	7	7	6	6	5	4	5	3	3	n/a
Total	520	606	398	709	194	131	93	46	40	n/a
Change in Plan Net Position	1,308	(255)	1,027	236	314	606	945	925	3,405	n/a

Note: Amounts in Thousands

n/a: The Wyoming Air Guard Firefighters Plan was separated from the Public Employees Pension Plan effective January 1, 2011.

Wyoming Deferred Compensation 457(b) Plan										
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions(Deletions) by Source										
Contributions	53,991	45,945	45,366	42,431	41,043	39,589	41,338	37,539	37,005	35,881
Investment Income(loss)	127,756	(27,870)	78,394	36,980	(3,504)	24,077	59,382	35,654	978	31,263
Other Income	-	-	(4)	99	177	146	148	210	195	175
Total	181,747	18,075	123,756	79,510	37,716	63,812	100,868	73,403	38,178	67,319
Deductions by Type										
Benefits	35,631	39,783	34,399	30,786	33,788	28,231	27,992	22,972	18,237	18,430
Administrative Expenses	849	815	871	802	682	856	848	854	794	741
Total	36,480	40,598	35,270	31,588	34,470	29,087	28,840	23,826	19,031	19,171
Change in Plan Net Position	145,267	(22,523)	88,486	47,922	3,246	34,725	72,028	49,577	19,147	48,148

Note: Amounts in Thousands

Schedule of Monthly Benefit Payments

Public Employees Pension Plan								
	Years of Service							
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
2019								
Number	1,156	4,206	4,095	3,728	3,632	4,081	3,534	1,658
Average Benefit	\$446	\$439	\$788	\$1,211	\$1,754	\$2,509	\$3,328	\$4,400
Ave Final Ave Salary:	\$52,289							
2018								
Number	1,053	4,066	3,939	3,666	3,540	3,975	3,462	1,542
Average Benefit	\$230	\$427	\$766	\$1,183	\$1,738	\$2,477	\$3,299	\$4,340
Ave Final Ave Salary:	\$51,529							
2017								
Number	1,046	3,942	3,776	3,571	3,410	3,838	3,365	1,408
Average Benefit	\$224	\$420	\$751	\$1,155	\$1,713	\$2,452	\$3,263	\$4,263
Ave Final Ave Salary:	\$82,083							
2016								
Number	1,037	3,794	3,621	3,459	3,305	3,684	3,232	1,264
Average Benefit	\$217	\$411	\$735	\$1,125	\$1,682	\$2,419	\$3,228	\$4,178
Ave Final Ave Salary:	\$51,594							
2015								
Number	1,023	3,667	3,483	3,366	3,199	3,519	3,054	1,121
Average Benefit	\$225	\$401	\$717	\$1,105	\$1,643	\$2,385	\$3,178	\$4,072
Ave Final Ave Salary:	\$52,242							
2014								
Number	983	3,519	3,362	3,259	3,090	3,384	2,904	1,016
Average Benefit	\$215	\$396	\$704	\$1,085	\$1,603	\$2,347	\$3,120	\$3,970
Ave Final Ave Salary:	\$51,374							
2013								
Number	994	3,385	3,236	3,184	2,974	3,208	2,721	882
Average Benefit	\$271	\$382	\$680	\$1,063	\$1,571	\$2,301	\$3,066	\$3,870
Ave Final Ave Salary	\$51,586							
2012								
Number	964	3,173	3,119	3,078	2,808	3,074	2,548	778
Average Benefit	\$191	\$373	\$660	\$1,038	\$1,521	\$2,266	\$3,010	\$3,752
Ave Final Ave Salary	\$51,085							
2011								
Number	945	3,042	3,042	3,004	2,690	2,917	2,341	692
Average Benefit	\$191	\$362	\$643	\$1,016	\$1,477	\$2,214	\$2,942	\$3,666
Ave Final Ave Salary	\$49,951							
2010								
Number	904	2,938	2,945	2,924	2,578	2,730	2,158	627
Average Benefit	\$178	\$356	\$630	\$991	\$1,442	\$2,162	\$2,859	\$3,535
Ave Final Ave Salary:	\$49,426							

Schedule of Monthly Benefit Payments

State Highway Patrol, Game & Fish Warden and Criminal Investigator Pension Plan								
	Years of Service							
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
2019								
Number	6	36	31	40	55	59	47	13
Average Benefit	\$1,749	\$1,648	\$2,316	\$2,346	\$2,850	\$3,400	\$4,185	\$4,139
Ave Final Ave Salary:	\$86,458							
2018								
Number	6	36	26	36	55	60	43	13
Average Benefit	\$1,749	\$1,648	\$2,307	\$2,284	\$2,694	\$3,383	\$4,056	\$4,139
Ave Final Ave Salary:	\$82,786							
2017								
Number	6	36	26	33	52	59	42	13
Average Benefit	\$1,749	\$1,563	\$2,252	\$2,219	\$2,621	\$3,337	\$4,051	\$4,139
Ave Final Ave Salary:	\$82,463							
2016								
Number	6	33	26	32	53	56	43	13
Average Benefit	\$1,749	\$1,484	\$2,252	\$2,066	\$2,511	\$3,174	\$3,996	\$4,116
Ave Final Ave Salary:	\$85,169							
2015								
Number	6	33	24	29	53	55	43	12
Average Benefit	\$1,749	\$1,476	\$2,344	\$1,919	\$2,440	\$3,149	\$3,851	\$3,997
Ave Final Ave Salary:	\$83,862							
2014								
Number	6	28	20	28	56	55	40	12
Average Benefit	\$1,923	\$1,552	\$2,239	\$1,924	\$2,370	\$2,985	\$3,648	\$3,997
Ave Final Ave Salary:	\$75,038							
2013								
Number	5	27	15	27	53	56	43	10
Average Benefit	\$1,377	\$1,538	\$2,155	\$1,844	\$2,310	\$2,860	\$3,602	\$4,041
Ave Final Ave Salary	\$74,889							
2012								
Number	5	24	13	27	53	56	42	10
Average Benefit	\$1,377	\$1,381	\$1,962	\$1,844	\$2,247	\$2,767	\$3,533	\$4,041
Ave Final Ave Salary	\$81,610							
2011								
Number	5	23	13	27	54	56	40	10
Average Benefit	\$1,377	\$1,378	\$1,962	\$1,761	\$2,187	\$2,686	\$3,372	\$4,041
Ave Final Ave Salary	\$77,942							
2010								
Number	4	21	11	27	51	57	36	10
Average Benefit	\$1,673	\$1,259	\$1,838	\$1,768	\$2,095	\$2,576	\$3,248	\$4,041
Ave Final Ave Salary:	\$91,818							

Schedule of Monthly Benefit Payments

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan								
Years of Service								
2019	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	7	115	223	208	272	255	160	48
Average Benefit	\$251	\$138	\$215	\$303	\$398	\$488	\$568	\$664
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2018	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	5	109	217	199	270	246	147	45
Average Benefit	\$193	\$140	\$217	\$305	\$398	\$487	\$567	\$654
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2017	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	5	97	212	201	263	231	137	37
Average Benefit	\$217	\$142	\$217	\$305	\$396	\$483	\$563	\$612
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2016	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	6	91	211	195	258	216	129	34
Average Benefit	\$219	\$144	\$218	\$305	\$395	\$482	\$562	\$608
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2015	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	6	83	214	199	255	200	115	18
Average Benefit	\$219	\$148	\$219	\$305	\$396	\$483	\$565	\$653
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2014	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	61	71	199	190	225	168	104	22
Average Benefit	\$288	\$158	\$205	\$257	\$315	\$388	\$462	\$474
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2013	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	69	67	192	195	216	152	87	12
Average Benefit	\$275	\$161	\$208	\$258	\$316	\$391	\$466	\$547
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2012	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	69	67	190	186	199	135	76	9
Average Benefit	\$276	\$164	\$209	\$260	\$318	\$394	\$467	\$547
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2011	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	61	68	187	179	179	106	63	8
Average Benefit	\$287	\$176	\$212	\$261	\$318	\$393	\$468	\$555
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							
2010	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	62	68	181	164	169	91	51	7
Average Benefit	\$291	\$177	\$213	\$262	\$317	\$400	\$469	\$551
Ave Final Ave Salary:	Benefits In This Plan Not Based on Salary							

Note: Data prior to 2015 is estimated from the consolidation of the predecessor Volunteer Firemen's Pension Plan and Volunteer Emergency Medical Technician Pension Plan.

Schedule of Monthly Benefit Payments

Paid Firefighter Pension Plan A								
	Years of Service							
2019	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	14	9	111	48	20	4
Average Benefit	\$-	\$2,066	\$2,782	\$4,424	\$4,856	\$5,823	\$6,063	\$5,820
Ave Final Ave Salary:	n/a							
2018	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	14	9	112	49	21	5
Average Benefit	\$-	\$2,005	\$2,701	\$4,295	\$4,715	\$5,655	\$5,847	\$6,157
Ave Final Ave Salary:	n/a							
2017	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	14	9	116	49	20	5
Average Benefit	\$-	\$1,947	\$2,622	\$4,170	\$4,583	\$5,479	\$5,707	\$5,977
Ave Final Ave Salary:	n/a							
2016	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	14	9	118	50	21	4
Average Benefit	\$-	\$1,890	\$2,546	\$4,048	\$4,452	\$5,304	\$5,610	\$5,943
Ave Final Ave Salary:	n/a							
2015	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	14	9	120	51	21	4
Average Benefit	\$-	\$1,835	\$2,472	\$3,931	\$4,328	\$5,170	\$5,453	\$5,770
Ave Final Ave Salary:	\$83,862							
2014	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	13	1	16	11	121	49	18	3
Average Benefit	\$4,389	\$1,782	\$2,422	\$3,777	\$4,196	\$5,077	\$5,343	\$5,629
Ave Final Ave Salary:	\$75,038							
2013	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	13	1	18	11	126	50	18	3
Average Benefit	\$4,261	\$1,730	\$2,244	\$3,667	\$4,083	\$4,914	\$5,188	\$5,465
Ave Final Ave Salary	\$74,889							
2012	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	9	1	18	11	134	51	19	3
Average Benefit	\$3,827	\$1,680	\$2,178	\$3,560	\$3,960	\$4,752	\$5,051	\$5,306
Ave Final Ave Salary	\$81,610							
2011	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	9	1	16	11	136	53	19	3
Average Benefit	\$3,703	\$1,631	\$2,173	\$3,456	\$3,851	\$4,614	\$4,904	\$5,151
Ave Final Ave Salary	\$77,942							
2010	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	9	1	16	12	142	53	20	4
Average Benefit	\$3,595	\$1,583	\$2,110	\$3,396	\$3,742	\$4,480	\$4,751	\$5,104
Ave Final Ave Salary:	\$91,818							

Schedule of Monthly Benefit Payments

Paid Firefighter Pension Plan B								
	Years of Service							
2019	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	9	17	16	28	54	8	-
Average Benefit	\$1,667	\$1,620	\$1,779	\$2,430	\$3,763	\$4,529	\$4,608	\$-
Ave Final Ave Salary:	\$73,810							
2018	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	8	12	15	25	52	8	-
Average Benefit	\$1,667	\$1,721	\$1,809	\$2,433	\$3,691	\$4,509	\$4,608	\$-
Ave Final Ave Salary:	\$84,821							
2017	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	7	11	14	22	49	8	-
Average Benefit	\$1,667	\$1,752	\$1,787	\$2,384	\$3,615	\$4,476	\$4,608	\$-
Ave Final Ave Salary:	\$87,557							
2016	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	5	10	14	22	43	7	-
Average Benefit	\$1,667	\$1,762	\$1,670	\$2,384	\$3,615	\$4,417	\$4,549	\$-
Ave Final Ave Salary:	\$83,403							
2015	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	5	8	12	15	39	7	-
Average Benefit	\$1,667	\$1,762	\$1,662	\$2,347	\$3,176	\$4,357	\$4,549	\$-
Ave Final Ave Salary:	\$91,091							
2014	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	5	8	11	12	35	4	-
Average Benefit	\$1,667	\$1,762	\$1,662	\$2,231	\$2,754	\$4,268	\$4,503	\$-
Ave Final Ave Salary:	\$83,778							
2013	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	4	7	11	12	31	4	-
Average Benefit	\$1,667	\$1,586	\$1,761	\$2,015	\$2,754	\$4,112	\$4,458	\$-
Ave Final Ave Salary	\$75,091							
2012	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	4	7	8	12	29	2	-
Average Benefit	\$1,667	\$1,586	\$1,761	\$1,895	\$2,883	\$4,101	\$4,494	\$-
Ave Final Ave Salary	\$66,398							
2011	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	4	4	6	8	12	27	-	-
Average Benefit	\$1,667	\$1,583	\$1,883	\$1,895	\$2,883	\$4,115	\$-	\$-
Ave Final Ave Salary	\$70,181							
2010	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	3	3	5	7	10	21	-	-
Average Benefit	\$1,532	\$1,047	\$1,983	\$1,860	\$2,703	\$3,946	\$-	\$-
Ave Final Ave Salary:	\$68,396							

Schedule of Monthly Benefit Payments

Judicial Pension Plan								
	Years of Service							
2019	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	6	12	6	1	-	-
Average Benefit	\$-	\$3,783	\$3,635	\$6,472	\$6,010	\$5,950	\$-	\$-
Ave Final Ave Salary:	\$136,443							
2018	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	5	9	6	1	-	-
Average Benefit	\$-	\$3,783	\$3,643	\$6,438	\$6,010	\$5,950	\$-	\$-
Ave Final Ave Salary:	No New Retirees in 2018							
2017	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	5	6	6	1	-	-
Average Benefit	\$-	\$3,783	\$3,850	\$5,826	\$6,010	\$5,950	\$-	\$-
Ave Final Ave Salary:	No New Retirees in 2017							
2016	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	4	4	5	1	-	-
Average Benefit	\$-	\$3,783	\$3,633	\$5,391	\$5,706	\$5,950	\$-	\$-
Ave Final Ave Salary:	No New Retirees in 2016							
2015	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	4	4	5	1	-	-
Average Benefit	\$-	\$3,783	\$3,633	\$5,391	\$5,706	\$5,950	\$-	\$-
Ave Final Ave Salary:	\$155,143							
2014	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	1	3	3	5	1	-	-
Average Benefit	\$-	\$3,783	\$2,972	\$4,879	\$5,706	\$5,950	\$-	\$-
Ave Final Ave Salary:	No New Retirees in 2014							
2013	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	2	3	5	1	-	-
Average Benefit	\$-	\$-	\$2,801	\$4,879	\$5,706	\$5,950	\$-	\$-
Ave Final Ave Salary	\$120,159							
2012	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	1	3	4	1	-	-
Average Benefit	\$-	\$-	\$3,014	\$4,879	\$5,425	\$5,950	\$-	\$-
Ave Final Ave Salary	No New Retirees in 2012							
2011	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	1	3	4	1	-	-
Average Benefit	\$-	\$-	\$3,014	\$4,879	\$5,425	\$5,950	\$-	\$-
Ave Final Ave Salary	No New Retirees in 2011							
2010	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	1	3	4	1	-	-
Average Benefit	\$-	\$-	\$3,014	\$4,879	\$5,425	\$5,950	\$-	\$-
Ave Final Ave Salary:	\$119,108							

Schedule of Monthly Benefit Payments

Law Enforcement Pension Plan								
	Years of Service							
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
2019								
Number	150	127	149	116	439	159	66	10
Average Benefit	\$1,899	\$916	\$1,690	\$1,919	\$2,484	\$3,260	\$3,699	\$4,001
Ave Final Ave Salary:	\$64,946							
2018								
Number	143	125	138	108	404	153	63	10
Average Benefit	\$1,865	\$915	\$1,713	\$1,881	\$2,438	\$3,225	\$3,718	\$4,001
Ave Final Ave Salary:	\$65,865							
2017								
Number	147	118	132	100	373	143	57	6
Average Benefit	\$1,863	\$890	\$1,674	\$1,853	\$2,404	\$3,150	\$3,774	\$3,787
Ave Final Ave Salary:	\$62,802							
2016								
Number	148	113	115	94	357	135	55	6
Average Benefit	\$1,872	\$905	\$1,651	\$1,827	\$2,378	\$3,051	\$3,785	\$3,787
Ave Final Ave Salary:	\$61,349							
2015								
Number	151	102	107	91	334	122	47	5
Average Benefit	\$1,861	\$902	\$1,630	\$1,819	\$2,352	\$3,013	\$3,750	\$3,878
Ave Final Ave Salary:	\$61,426							
2014								
Number	151	93	101	82	309	111	41	3
Average Benefit	\$1,907	\$944	\$1,634	\$1,780	\$2,319	\$2,953	\$3,707	\$3,777
Ave Final Ave Salary:	\$57,765							
2013								
Number	155	83	78	78	281	106	37	3
Average Benefit	\$1,893	\$906	\$1,536	\$1,752	\$2,292	\$2,892	\$3,722	\$3,524
Ave Final Ave Salary	\$58,151							
2012								
Number	157	75	70	73	252	96	33	2
Average Benefit	\$1,885	\$909	\$1,527	\$1,762	\$2,254	\$2,835	\$3,744	\$3,105
Ave Final Ave Salary	\$58,829							
2011								
Number	158	70	64	70	235	88	29	2
Average Benefit	\$1,872	\$911	\$1,530	\$1,777	\$2,224	\$2,786	\$3,705	\$3,105
Ave Final Ave Salary	\$57,577							
2010								
Number	155	57	55	61	203	82	25	-
Average Benefit	\$1,891	\$967	\$1,495	\$1,681	\$2,170	\$2,782	\$3,670	\$-
Ave Final Ave Salary:	\$57,362							

Schedule of Monthly Benefit Payments

Air Guard Firefighter Pension Plan								
	Years of Service							
2019	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	3	7	3	-	-
Average Benefit	-	-	-	*	\$2,804	*	-	-
Ave Final Ave Salary:	\$64,889							
2018	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	3	6	2	-	-
Average Benefit	-	-	-	*	\$2,892	*	-	-
Ave Final Ave Salary:	\$56,838							
2017	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	3	5	2	-	-
Average Benefit	-	-	-	*	\$3,010	*	-	-
Ave Final Ave Salary:	\$89,657							
2016	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	2	5	2	-	-
Average Benefit	-	-	-	*	\$3,010	*	-	-
Ave Final Ave Salary:	\$75,026							
2015	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	2	4	-	-	-
Average Benefit	-	-	-	*	\$2,955	-	-	-
Ave Final Ave Salary:	\$62,088							
2014	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	2	3	-	-	-
Average Benefit	-	-	-	*	*	-	-	-
Ave Final Ave Salary:	\$59,799							
2013	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	1	2	-	-	-
Average Benefit	-	-	-	*	*	-	-	-
Ave Final Ave Salary	\$93,530							
2012	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	1	1	-	-	-
Average Benefit	-	-	-	*	*	-	-	-
Ave Final Ave Salary	No New Retirees in 2012							
2011	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	1	1	-	-	-
Average Benefit	-	-	-	*	*	-	-	-
Ave Final Ave Salary	No New Retirees in 2011							
2010	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	Over 34
Number	-	-	-	1	1	-	-	-
Average Benefit	-	-	-	*	*	-	-	-
Ave Final Ave Salary:	\$20,065							

*: Average benefit is not shown for cells with less than or equal to three participants

Public Employees Pension Plan			
Pensions In Force as of December 31, 2019			
By Monthly Amount		By Nearest Age	
Under \$ 200	1,647	Under 50	67
\$ 200 - \$ 399	3,086	50 - 54	119
\$ 400 - \$ 599	2,859	55 - 59	853
\$ 600 - \$ 799	2,337	60 - 64	4,081
\$ 800 - \$ 999	2,048	65 - 69	7,049
\$ 1,000 - \$ 1,499	4,028	70 - 74	6,553
\$ 1,500 - \$ 1,999	2,933	75 - 79	4,500
\$ 2,000 - \$ 2,499	2,510	80 - 84	2,923
\$ 2,500 & Over	7,302	85 & Over	2,605
Total	28,750	Total	28,750

Public Employees Pension Plan

Pensions By Payout Option							Count Elected Self-Funded COLA**		
Pensioners:	Count			Monthly Benefit			1%	2%	3%
	Male	Female	Total	Male	Female	Total			
Option 1	2,170	6,796	8,966	\$3,886,633	\$10,006,719	\$13,893,352	35	24	40
Option 2	4,726	3,670	8,396	10,345,240	6,144,606	\$16,489,846	22	34	41
Option 3	1499	2078	3,577	2,864,514	3,771,988	\$6,636,502	12	18	20
Option 4a	484	595	1,079	1,164,568	1,035,632	\$2,200,200	4	3	3
Option 4b	305	608	913	737,038	1,319,198	\$2,056,236	5	6	7
Option 5	319	585	904	505,720	808,838	\$1,314,558	6	2	6
Option 2P	67	105	172	105,396	153,102	\$258,498	6	5	3
Option 3P	530	1553	2,083	848,269	2,074,874	\$2,923,143	14	9	15
Total	10,100	15,990	26,090	\$20,457,378	\$25,314,957	\$45,772,335	104	101	135
Beneficiaries	622	2,038	2,660	694,056	2,619,717	\$3,313,773	-	-	-
Total	10,722	18,028	28,750	\$21,151,434	\$27,934,674	\$49,086,108	104	101	135

** Option totals in left portion of the table include these counts of members who elected a self-funded COLA option.

Option 1 - Provides a lifetime benefit as calculated in the formula. Upon the retiree's death, the beneficiary would receive a lump-sum payment of any remaining contributions and interest in the account.

Option 2 - Full joint and survivor benefit. Based on both the life expectancy of the retiree and beneficiary. When the retiree dies, the beneficiary receives the same benefit payment for the remainder of their life.

Option 2P - Full joint and survivor benefit with pop-up provision. Based on both the life expectancy of the retiree and beneficiary. When the retiree dies, the beneficiary receives the same benefit payment for the remainder of their life. If the beneficiary dies first, the benefit pops-up to Option 1.

Option 3 - ½ joint and survivor benefit. Based on both the life expectancy of the retiree and beneficiary. When the retiree dies, the beneficiary receives one-half the monthly benefit payment for the remainder of their life.

Option 3P - ½ joint and survivor benefit. Based on both the life expectancy of the retiree and beneficiary. When the retiree dies, the beneficiary receives one-half the monthly benefit payment for the remainder of their life. If the beneficiary dies first, the benefit pops-up to Option 1.

Option 4a - Ten Year Certain Benefit. Based on the age of the retiree. If the retiree dies before receiving the benefit for 10 years, the beneficiary would receive the allowance for the balance of the 10-year period.

Option 4b - Twenty Year Certain Benefit. Based on the age of the retiree. If the retiree dies before receiving the benefit for 20 years, the beneficiary would receive the allowance for the balance of the 20-year period.

Option 5 - Lifetime benefit with no beneficiary. Payable during the retiree's lifetime with no provision for any beneficiary payment after the retiree's death.

Pensions in Force

Public Employees Pension Plan

Pensions Awarded During 2019									
	Option 1	Option 2	Option 2P	Option 3	Option 3P	Option 4a	Option 4b	Option 5	Total
Under \$200	20	12	6	2	1	3	2	43	89
\$200 - \$399	44	28	18	5	1	5	7	40	148
\$400 - \$599	43	36	19	2	3	6	6	38	153
\$600 - \$799	40	31	12	3	0	4	7	33	130
\$800 - \$999	33	45	11	7	1	3	6	15	121
\$1,000 - \$1,499	74	79	34	9	10	4	3	57	270
\$1,500 - \$1,999	42	60	23	4	5	5	4	44	187
\$2,000 - \$2,499	31	43	20	9	2	1	1	35	142
\$2,500 & Over	131	189	78	26	19	5	9	76	533
Total	458	523	221	67	42	36	45	381	1,773

Pensions In Force

State Highway Patrol, Game and Fish Warden, and Criminal Investigator Pension Plan

Pensions In Force as of December 31, 2019

By Monthly Amount		By Nearest Age	
Under \$ 200	1	Under 50	12
\$ 200 - \$ 399	3	50 - 54	30
\$ 400 - \$ 599	9	55 - 59	45
\$ 600 - \$ 799	19	60 - 64	59
\$ 800 - \$ 999	11	65 - 69	66
\$ 1,000 - \$ 1,499	50	70 - 74	53
\$ 1,500 - \$ 1,999	40	75 - 79	38
\$ 2,000 - \$ 2,499	47	80 - 84	27
\$ 2,500 & Over	171	85 & Over	21
Total	351	Total	351

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan

Pensions In Force as of December 31, 2019

By Monthly Amount		By Nearest Age	
Under \$ 50	2	Under 60	27
\$ 50 - \$ 99	23	60 - 64	314
\$100 - \$149	115	65 - 69	436
\$150 - \$199	167	70 - 74	320
\$200 - \$249	208	75 - 79	219
\$250 - \$299	146	80 & Over	239
\$300 - \$349	138		
\$350 - \$399	156		
\$400 & Over	600		
Total	1,555	Total	1,555

Paid Firefighter Pension Plan A

Pensions In Force as of December 31, 2019

By Monthly Amount		By Nearest Age	
Under \$ 200	0	Under 50	0
\$ 200 - \$ 399	1	50 - 54	1
\$ 400 - \$ 599	0	55 - 59	4
\$ 600 - \$ 799	0	60 - 64	61
\$ 800 - \$ 999	1	65 - 69	53
\$ 1,000 - \$ 1,499	3	70 - 74	46
\$ 1,500 - \$ 1,999	0	75 - 79	38
\$ 2,000 - \$ 2,499	9	80 - 84	32
\$ 2,500 & Over	259	85 & Over	38
Total	273	Total	273

Paid Firefighter Pension Plan B

Pensions In Force as of December 31, 2019

By Monthly Amount		By Nearest Age	
Under \$ 200	0	Under 50	9
\$200-\$399	0	50 - 54	29
\$400-\$599	1	55 - 59	37
\$600-\$799	3	60 - 64	52
\$800-\$999	3	65 - 69	18
\$1,000-\$1,499	9	70 - 74	5
\$1,500-\$1,999	15	75 - 79	1
\$2,000-\$2,499	20	80 - 84	0
\$ 2,500 & Over	100	85 & Over	0
Total	151	Total	151

Judicial Pension Plan

Pensions In Force as of December 31, 2019

By Monthly Amount		By Nearest Age	
Under \$ 200	0	Under 50	0
\$200-\$399	0	50 - 54	0
\$400-\$599	0	55 - 59	0
\$600-\$799	0	60 - 64	1
\$800-\$999	0	65 - 69	11
\$1,000-\$1,499	0	70 - 74	7
\$1,500-\$1,999	1	75 - 79	3
\$2,000-\$2,499	0	80 - 84	5
\$2,500 & Over	29	85 & Over	3
Total	30	Total	30

Law Enforcement Pension Plan

Pensions In Force as of December 31, 2019

By Monthly Amount		By Nearest Age	
Under \$ 200	12	Under 50	126
\$ 200 - \$ 399	49	50 - 54	125
\$ 400 - \$ 599	68	55 - 59	171
\$ 600 - \$ 799	58	60 - 64	285
\$ 800 - \$ 999	48	65 - 69	306
\$ 1,000 - \$ 1,499	138	70 - 74	213
\$ 1,500 - \$ 1,999	195	75 - 79	91
\$ 2,000 - \$ 2,499	277	80 - 84	30
\$ 2,500 & Over	518	85 & Over	16
Total	1,363	Total	1,363

Pensions In Force

Air Guard Firefighter Pension Plan			
Pensions In Force as of December 31, 2019			
By Monthly Amount		By Nearest Age	
Under \$ 200	0	Under 50	1
\$ 200 - \$ 399	0	50 - 54	1
\$ 400 - \$ 599	0	55 - 59	4
\$ 600 - \$ 799	0	60 - 64	3
\$ 800 - \$ 999	0	65 - 69	2
\$ 1,000 - \$ 1,499	0	70 - 74	2
\$ 1,500 - \$ 1,999	2	75 - 79	0
\$ 2,000 - \$ 2,499	2	80 - 84	0
\$ 2,500 & Over	9	85 & Over	0
Total	13	Total	13

Member and Benefit Recipient Statistics

Member and Benefit Recipient Statistics									
	Public Employees	Warden & Patrol	Volunteer Firefighter, EMT and Search & Rescue	Paid Firemen Plan A	Paid Firemen Plan B	Judicial Plan	Law Enforcement	Air Guard Firefighters	Totals
Active Members – 12/31/2019	35,206	312	2,417	1	374	50	2,660	41	41,061
Retirement Benefits:									
Total receiving retirement benefits on December 31, 2018	27,782	340	1,495	276	137	26	1,274	11	31,341
Total added to rolls in 2019	1,773	18	92	3	14	4	111	2	2,017
Total removed from rolls in 2019	805	7	32	6	0	0	22	0	872
Total receiving retirement benefits - December 31, 2019	28,750	351	1,555	273	151	30	1,363	13	32,486
Total paid in retirement benefits in 2019 (amounts in millions)	\$589.0	\$11.0	\$6.5	\$16.2	\$6.1	\$1.9	\$35.7	\$0.5	\$666.9
Average monthly benefit	\$1,707	\$2,621	\$348	\$4,938	\$3,393	\$5,183	\$2,183	\$2,975	N/A

Active Membership

Public Employee Plan Active Membership by Year										
	2019	Total	2018	Total	2017	Total	2016	Total	2015	Total
State	7,516	21%	7,542	22%	7,616	22%	7,681	20%	7,762	20%
University	1,075	3%	1,065	3%	1,017	3%	1,074	3%	1,174	3%
Community Colleges	1,178	3%	1,237	4%	1,360	4%	1,321	4%	1,350	4%
Schools	17,911	51%	18,048	52%	17,584	50%	18,369	50%	18,438	50%
Counties	2,497	7%	2,467	7%	2,436	7%	2,491	7%	2,583	7%
Libraries	387	1%	403	1%	396	1%	403	1%	434	1%
Cities & Towns	2,396	7%	2,418	7%	2,412	7%	2,465	7%	2,580	7%
Weed & Pest	94	0%	103	0%	86	0%	105	0%	117	0%
Irrigation Districts	67	0%	67	0%	64	0%	70	0%	65	0%
Others	2,085	6%	1,523	4%	2,042	6%	1,913	7%	2,074	7%
Totals	35,206	100%	34,873	100%	35,013	100%	35,892	100%	36,577	100%

	2014	Total	2013	Total	2012	Total	2011	Total	2010	Total
State	7,866	21%	7,830	21%	7,926	22%	8,001	22%	8,011	22%
University	1,155	3%	1,113	3%	1,099	3%	1,085	3%	1,075	3%
Community Colleges	1,322	4%	1,334	4%	1,336	4%	1,322	4%	1,285	4%
Schools	18,230	50%	18,023	50%	17,735	49%	17,622	49%	17,366	48%
Counties	2,576	7%	2,518	7%	2,498	7%	2,436	7%	2,336	7%
Libraries	426	1%	446	1%	443	1%	440	1%	444	1%
Cities & Towns	2,525	7%	2,495	7%	2,469	7%	2,397	7%	2,402	7%
Weed & Pest	118	0%	109	0%	107	0%	103	0%	96	0%
Irrigation Districts	68	0%	66	0%	70	0%	57	0%	55	0%
Others	2,203	7%	2,420	7%	2,761	7%	2,607	7%	2,758	8%
Totals	36,489	100%	36,354	100%	36,444	100%	36,070	100%	35,828	100%

Public Employee Plan Active Membership by Age and Years of Service								
Age Last Birthday	Years of Service							Total
	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 Plus	
Less - 20	66	0	0	0	0	0	0	66
20 – 24	1101	3	0	0	0	0	0	1104
25 – 29	2,213	408	3	0	0	0	0	2624
30 – 34	1,996	1,344	288	1	0	0	0	3,629
35 – 39	1,999	1,314	1033	198	2	0	0	4,546
40 – 44	1,594	1,150	941	708	122	1	0	4,516
45 – 49	1,371	1018	843	637	558	117	0	4544
50 – 54	1,055	852	767	631	508	490	131	4434
55 – 59	1023	758	782	763	590	424	432	4772
60 – 64	674	597	566	513	409	301	453	3513
65 - 69	272	184	188	147	111	70	117	1089
Over 70	114	74	40	59	19	26	37	369
Total	13,478	7,702	5,451	3,657	2,319	1,429	1,170	35,206

Average Age = 46.1

Average Service = 9.7

Affiliated Employers - Top Ten Largest Employers

The following schedules compare the top ten largest employers within the Wyoming Retirement System at 12/31/2019 to 12/31/2010.

TEN LARGEST EMPLOYERS

12/31/2019		
Public Employee Pension Plan	# of Employees	%
State of Wyoming	7,518	21.4%
Laramie County School District # 1	2,352	6.7%
Natrona County School District # 1	2,170	6.2%
Campbell County School District	1,712	4.9%
University of Wyoming	1,084	3.1%
Sweetwater County School District # 1	907	2.6%
Albany County Schools	735	2.1%
Sheridan County School District # 2	592	1.7%
Uinta County School District # 1	551	1.6%
Sweetwater County School District # 2	521	1.5%
All Others	17,064	48.5%
Total	35,206	100.0%

12/31/2010		
Public Employee Pension Plan	# of Employees	%
State of Wyoming	8,011	22.4%
Laramie County School District # 1	2,254	6.3%
Natrona County School District # 1	2,251	6.3%
Campbell County School District	1,651	4.6%
University of Wyoming	1,075	3.0%
Sweetwater County School District # 1	994	2.8%
Albany County School District	770	2.1%
Sheridan County School District # 2	613	1.7%
Uinta County School District # 1	539	1.5%
Sweetwater County School District # 2	513	1.4%
All Others	17,157	47.9%
Total	35,828	100.0%

12/31/2019		
Warden, Patrol, & DCI Pension Plan	# of Employees	%
State of Wyoming	312	100.0%
Total	312	100.0%

12/31/2010		
Warden, Patrol, & DCI Pension Plan	# of Employees	%
State of Wyoming	322	100.0%
Total	322	100.0%

12/31/2019		
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan	# of Employees	%
Fremont County	132	5.5%
Sublette County	86	3.6%
Campbell County	75	3.1%
Cody	68	2.8%
Sinclair Refinery	53	2.2%
Riverton	51	2.1%
Jackson Hole	49	2.0%
Newcastle	49	2.0%
Sweetwater District 1	49	2.0%
Holly Frontier	47	1.9%
All Others	1,758	72.7%
Total	2,417	100.0%

12/31/2015		
Volunteer Firefighter, EMT, and Search & Rescue Pension Plan	# of Employees	%
Fremont County	155	6.5%
Campbell County	99	4.2%
Sublette County	72	3.0%
Cody	67	2.8%
Jackson Hole Fire	61	2.6%
Sinclair Refinery	57	2.4%
Holly Frontier	53	2.2%
Powell	51	2.1%
Lander	50	2.1%
Riverton	50	2.1%
All Others	1,664	69.9%
Total	2,379	100.0%

Note: Volunteer Firefighter, EMT, and Search & Rescue Pension Plan top ten information is not available before 2015.

Note: The Paid Firemen's Pension Plan A is a closed plan and as such does not have any contributing employers.

Affiliated Employers - Top Ten Largest Employers

The following schedules compare the top ten largest employers within the Wyoming Retirement System at 12/31/2019 to 12/31/2010.

TEN LARGEST EMPLOYERS (continued)

12/31/2019		
Paid Firemen's Pension Plan B	# of Employees	%
City of Cheyenne	88	23.5%
City of Casper	69	18.4%
City of Laramie	46	12.3%
City of Rock Springs	34	9.1%
Jackson/Teton County	27	7.2%
Campbell County	26	7.0%
Natrona County	19	5.1%
City of Sheridan	16	4.3%
City of Rawlins	11	2.9%
Town of Mills	9	2.4%
All Others	29	7.8%
Total	374	100.0%

12/31/2010		
Paid Firemen's Pension Plan B	# of Employees	%
City of Cheyenne	87	26.0%
City of Casper	72	21.5%
City of Laramie	43	12.8%
City of Rock Springs	34	10.1%
City of Sheridan	26	7.8%
Campbell County	22	6.6%
Natrona County	20	6.0%
City of Rawlins	10	3.0%
Natrona County Airport	7	2.1%
Town of Mills	7	2.1%
All Others	7	2.1%
Total	335	100.0%

12/31/2019		
Judicial Pension Plan	# of Employees	%
State of Wyoming	50	100.0%
Total	50	100.0%

12/31/2010		
Judicial Pension Plan	# of Employees	%
State of Wyoming	40	100.0%
Total	40	100.0%

12/31/2019		
Law Enforcement Pension Plan	# of Employees	%
State of Wyoming	658	24.7%
Laramie County	151	5.7%
Campbell County	127	4.8%
City of Casper	117	4.4%
Natrona County	108	4.1%
City of Cheyenne	103	3.9%
Fremont County	78	2.9%
Sweetwater County	67	2.5%
Sublette County	65	2.4%
City of Gillette	60	2.3%
All Others	1,126	42.3%
Total	2,660	100.0%

12/31/2010		
Law Enforcement Pension Plan	# of Employees	%
State of Wyoming	817	28.4%
Laramie County	139	4.8%
Campbell County	121	4.2%
Natrona County	120	4.2%
City of Cheyenne	105	3.6%
City of Casper	104	3.6%
Sweetwater County	94	3.3%
Fremont County	84	2.9%
Sublette County	64	2.2%
City of Gillette	62	2.2%
All Others	1,169	40.6%
Total	2,879	100.0%

12/31/2019		
Air Guard Firefighters Pension Plan	# of Employees	%
State of Wyoming	41	100.0%
Total	41	100.0%

12/31/2010		
Air Guard Firefighters Pension Plan	# of Employees	%
State of Wyoming	24	100.0%
Total	24	100.0%

Affiliated Employers - List of Employers By Plan

Public Employers Pension Plan Board of Cooperative Educational Services (BOCES)

Carbon County Higher Education
Carbon CSD 2
Fremont County
Northeast Wyoming
Northwest Wyoming
Oyster Ridge
Region V
Sublette
Sweetwater
Uinta 1
Uinta County 4,6
Western/Sublette County 9

Public Employers Pension Plan Cities & Towns

Afton
Alpine
Baggs
Bairoil
Bar Nunn
Basin
Bear River
Big Piney
Buffalo
Burns
Byron
Casper
Cheyenne
Chugwater
Cody
Cokeville
Cowley
Deaver
Diamondville
Dixon
Douglas
Dubois
East Thermopolis
Edgerton
Elk Mountain
Encampment
Evanston
Evansville

Public Employers Pension Plan Cities & Towns (continued)

Fort Laramie
Frannie
Gillette
Glendo
Glenrock
Granger
Green River
Greybull
Guernsey
Hanna
Hudson
Hulett
Jackson
Kaycee
Kemmerer
LaGrange
Lander
Laramie
Lingle
Lovell
Lusk
Lyman
Marbleton
Medicine Bow
Meeteetse
Midwest
Mills
Moorcroft
Mountain View
Newcastle
Pine Bluffs
Pine Haven
Pinedale
Powell
Ranchester
Rawlins
Riverton
Rock River
Rock Springs
Rolling Hills
Saratoga
Sheridan
Shoshoni

Public Employers Pension Plan Cities & Towns (continued)

Sinclair
Star Valley Ranch
Sundance
Ten Sleep
Thayne
Thermopolis
Torrington
Upton
Wamsutter
Wheatland
Worland
Yoder

Public Employers Pension Plan Counties

Albany
Big Horn
Campbell
Carbon
Converse
Crook
Fremont
Goshen
Hot Springs
Johnson
Laramie
Lincoln
Natrona
Park
Platte
Sheridan
Sublette
Sweetwater
Teton
Uinta
Washakie
Weston

Affiliated Employers - List of Employers By Plan

Public Employers Pension Plan

Libraries

Albany County
 Big Horn County
 Carbon County
 Converse County
 Crook County
 Fremont County
 Goshen County
 Hot Springs County
 Johnson County
 Laramie County
 Lincoln County
 Natrona County
 Park County
 Platte County
 Sheridan County
 Sublette County
 Sweetwater County
 Teton County
 Uinta County
 Washakie County
 Weston County

Public Employers Pension Plan

Irrigation Districts

Big Horn Canal
 Cody Canal
 Deaver
 Goshen
 Hanover
 Heart Mountain
 Lakeview
 LaPrele
 Shoshone
 Wheatland
 Willwood

Public Employers Pension Plan

Other Employers

Afton/Lincoln County Airport
 Albany County Fair Board
 Albany County SAFE Project
 Ark Regional Services Inc.
 Baggs Solid Waste
 Basin Authority Child Support
 Big Horn County Fire District 1
 Big Horn County Solid Waste District
 Big Horn Enterprises
 Big Horn Regional Joint Powers Board
 Big Piney Cemetery District
 Bridger Valley Joint Powers Board
 Byron Solid Waste
 Campbell County Cemetery Dist.
 Campbell County Conservation District
 Campbell County Public Land DBA Cam-plex
 Campbell County Senior Citizens Association, Inc.
 Carbon County COVE
 Carbon County Senior Services, Inc.
 Casper/Natrona County Airport
 Central Wyoming Counseling Center
 Central Wyoming Senior Services
 Cheyenne Board of Public Utilities
 Cheyenne Housing Authority
 Cheyenne Regional Airport
 Child Development Services Fremont County
 Child Support Authority 4th Judicial District
 Child Support Authority 6th Judicial District
 Children's Advocacy Project
 Children's Learning Center
 City of Cheyenne-Laramie County Health Department
 Clear Creek Conservation District
 Community Action Partnership/Natrona County
 Converse County Aging Services

Public Employers Pension Plan

Other Employers (continued)

Converse County Airport
 Converse County Conservation District
 Converse County Senior Housing
 Converse Hope Center
 Crisis Intervention Services
 Crisis Prevention and Response Center
 Crook County Fair
 Crook County Museum
 Crook County Natural Resource District
 Crown Hill Cemetery District
 Deaver-Frannie Cemetery District
 Dubois-Crowheart Conservation District
 Eastern Laramie County Solid Waste Disposal District
 Eppson Center For Seniors
 Evanston Housing Authority
 Evanston Parks & Recreation
 Fremont County Fair
 Fremont County Fire Protection District
 Fremont County Museum
 Fremont County Solid Waste
 Gillette Abuse Refuge Foundation
 Gillette/Wright/Campbell County Fire Protection Joint Powers Board
 Glenrock Area Solid Waste Disposal District
 Glenrock Cemetery District
 Glenrock Community Recreation District
 Glenrock Hospital District
 Goshen County Fair
 Goshen County Senior Friendship Center
 Green River/Rock Springs/Sweetwater County Joint Powers Water Board
 Greybull Recreation District
 High Country Behavioral Health
 High Country Joint Powers Board
 Hope Agency Inc, Hot Springs Crisis Line

Affiliated Employers - List of Employers By Plan

Public Employers Pension Plan Other Employers (continued)

Hot Springs County Cemetery District

Hot Springs County Senior Citizens Center

Jackson Hole Airport

Jamestown Rio Vista Water Sewer District

Jim Gatchell Memorial Museum

Johnson County Fair Board

Johnson County Solid Waste

Kemmerer Senior Citizens

Kemmerer-Diamondville Water & Wastewater Joint Powers Board

Lander Senior Citizens

Laramie County Conservation

Laramie County Fire District 2

Laramie Montessori School

Laramie Regional Airport

Laramie Rivers Conservation District

Lincoln County Fair

Little Snake River Conservation District

Local Government Liability Pool

Magic City Enterprises

Meeteetse Conservation District

Meeteetse Recreation District

Mountain View Cemetery District

Natrona County Conservation District

Natrona County Fair

Natrona County Health Department

Niobrara County Hospital District

North Platte Valley, South Goshen & Lingle/Ft. Laramie Conservation District

Northern Wyoming Mental Health Center

Northwest Rural Water District

Park County Drug Court

Park County Fire Protection District 1

Park County Fire Protection District 2

Park County Museum Board

Pinedale Aquatic Center

Public Employers Pension Plan Other Employers (continued)

Platte County Housing Authority

Platte County Resource District

Popo Agie Conservation District

Powell Recreation District

Rendezvous Pointe

Renew

Riverside Cemetery District

Rock Springs/Sweetwater County Airport Board

SAFV Task Force, Inc. Uinta County

Saratoga-Encampment-Rawlins Conservation

Self Help Center

Senior Citizens Council

Sheridan County Conservation District

Sheridan County Fair Association

Sheridan Juvenile Justice Commission Joint Powers Board

Sheridan Recreation District

Shoshone Municipal Pipeline

Solutions For Life

South Big Horn Conservation District

South Big Horn Senior Citizens, Inc.

South Cheyenne Water & Sewer

South Lincoln Special Cemetery District

Southwest Counseling Services

Star Valley Conservation District

Star Valley Senior Citizen, Inc.

Sublette County Conservation District

Sublette County Rural Health Care

Sublette County SAFV Task Force

SW Sublette County Pioneers

Sweetwater County Combined Communications Joint Powers Board

Sweetwater County Conservation District

Sweetwater County District Board of Health

Sweetwater County Fair Board

Public Employers Pension Plan Other Employers (continued)

Sweetwater County Fire District 1

Sweetwater County Museum

Sweetwater County Solid Waste

Sweetwater County Solid Waste District 2

Sweetwater County Transit Authority

Ten Sleep Senior Center

Teton Conservation District

Teton Village Association

Teton Village Water and Sewer District

Thayne Senior Center

Treatment Court of Sweetwater County

Uinta County Conservation District

Wardwell Water & Sewer District

Washakie County Conservation District

Washakie County Solid Waste District 1

Weston County Children's Center

Weston County Fairgrounds

Weston County Fire Protection District

Weston County Museum District

Weston County Natural Resource District

White Mountain Water & Sewer District

Wind River Transportation Authority

Worland Fire Protection District 1

Worland Senior Center

Wyoming Association of Risk Management

Wyoming Child & Family Development Inc.

Wyoming Coalition Against Domestic Violence

Wyoming Community Development Authority

Wyoming County Commissioners Association

Wyoming Education Association

Wyoming High School Activities

Wyoming Lottery

Affiliated Employers - List of Employers By Plan

Public Employers Pension Plan Other Employers (continued)

Wyoming Pipeline Authority
Wyoming Public Employees Association
Wyoming School Boards
Wyoming Senior Citizens Inc.
Wyoming State Bar
Yellowstone Regional Airport

Public Employers Pension Plan Schools

Albany County Schools
Big Horn County School District 1
Big Horn County School District 2
Big Horn County School District 3
Big Horn County School District 4
Campbell County School District 1
Carbon County School District 1
Carbon County School District 2
Converse County School District 1
Converse County School District 2
Crook County Schools
Fremont County School District 1
Fremont County School District 2
Fremont County School District 14
Fremont County School District 21
Fremont County School District 24
Fremont County School District 25
Fremont County School District 38
Fremont/Windriver County School District 6
Goshen County School District 1
Hot Springs County School District 1
Johnson County School District 1
Laramie County School District 1
Laramie County School District 2
Lincoln County School District 1
Lincoln County School District 2
Natrona County School District 1
Niobrara County School District 1
Park County School District 1
Park County School District 6
Park County School District 16
Platte County School District 1

Public Employers Pension Plan Schools (continued)

Platte County School District 2
PODER Academy
PODER Academy Secondary School
Sheridan County School District 1
Sheridan County School District 2
Sheridan County School District 3
Snowy Range Academy
Sublette County School District 1
Sublette County School District 9
Sweetwater County School District 1
Sweetwater County School District 2
Teton County School District 1
Uinta County School District 1
Uinta County School District 4
Uinta County School District 6
Washakie County School District 1
Washakie County School District 2
Weston County School District 1
Weston County School District 7

Public Employers Pension Plan State of Wyoming

Attorney General's Office
Board of Cosmetology
Board of CPA's
Board of Equalization
Board of Livestock
Board of Medicine
Board of Nursing
Board of Outfitters
Board of Parole
Board of Pharmacy
Board of Professional Geologists
Board of Professional Teaching Standards
Board of Travel and Tourism
Business Council
Commission on Judicial Conduct and Ethics
Community College Commission
Department of Administration & Information

Public Employers Pension Plan State of Wyoming (continued)

Department of Agriculture
Department of Audit
Department of Corrections
Department of Education
Department of Enterprise Technology Services
Department of Environmental Quality
Department of Family Services
Department of Fire Prevention and Electrical Safety
Department of Game & Fish
Department of Health
Department of Insurance
Department of Revenue
Department of Transportation
Department of Workforce Services
District Attorney District 1
District Attorney District 7
Environmental Quality Council
Governor's Mansion
Governor's Office
Judicial District 1A
Judicial District 1B
Judicial District 1C
Judicial District 1D
Judicial District 2A
Judicial District 2B
Judicial District 3
Judicial District 3B
Judicial District 3C
Judicial District 4A
Judicial District 4B
Judicial District 5A
Judicial District 5B
Judicial District 6
Judicial District 6B
Judicial District 6C
Judicial District 7A
Judicial District 7B
Judicial District 7C
Judicial District 8A
Judicial District 8B
Judicial District 9A

Affiliated Employers - List of Employers By Plan

Public Employers Pension Plan State of Wyoming (continued)

Judicial District 9B
 Judicial District 9C
 Legislative Service Office
 Military Department
 Miners Hospital Board
 Office of Administrative Hearings
 Office of State Lands & Investments
 Oil And Gas Conservation Commission
 Pari-Mutuel Commission
 Public Defenders
 Public Service Commission
 Real Estate Commission
 Retirement System
 Secretary of State
 State Auditor
 State Construction Department
 State Engineer's Office
 State Geological Survey
 State Parks & Cultural Resources
 State Treasurer
 Supreme Court
 Water Development Commission
 Wildlife & Natural Resources Trust Board

Public Employers Pension Plan University & Colleges

Casper Community College
 Central Wyoming Community College
 Eastern Wyoming College
 Laramie County Community College
 Northern Wyoming Community College
 Northwest College
 University of Wyoming
 Western Wyoming Community College

Paid Fireman A Pension Plan

The Paid Firemen's Pension Plan A is a closed plan and as such does not have any contributing employers.

Public Employers Pension Plan Weed & Pest

Albany County Weed & Pest
 Big Horn County Weed & Pest
 Campbell County Weed And Pest
 Carbon County Weed & Pest
 Converse County Weed & Pest
 Crook County Weed & Pest
 Fremont County Weed & Pest
 Goshen County Weed & Pest
 Hot Springs Weed & Pest
 Johnson County Weed & Pest
 Laramie County Weed & Pest
 Lincoln County Weed & Pest
 Natrona County Weed & Pest Control
 Niobrara County Weed & Pest
 Park County Weed & Pest
 Platte County Weed & Pest
 Sheridan County Weed & Pest
 Sublette County Weed & Pest
 Sweetwater County Weed & Pest
 Teton County Weed & Pest
 Uinta County Weed & Pest
 Washakie County Weed & Pest
 Weston County Weed & Pest

Paid Fireman B Pension Plan

Campbell County
 Casper/Natrona County Airport
 City of Casper
 City of Cheyenne
 City of Laramie
 City of Rawlins
 City of Rock Springs
 City of Sheridan
 Evansville Emergency Services
 Jackson /Teton County Fire Department
 Johnson County Fire Department
 Laramie County Fire District 2
 Natrona County Fire Protection
 Town of Mills
 Uinta County Fire Protection
 Worland Protection District

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan

Afton Volunteer Fire Department
 Albany County Fire District 1
 Albany County Volunteer Fire Department
 Albin Volunteer Fire Department
 Alpine Volunteer Fire Department
 Antelope Gap Rural Fire District
 Bairoil Volunteer Fire Department
 Bar Nunn Volunteer Fire Department
 Big Horn 1 Volunteer Fire Department
 Big Horn County Volunteer Fire - District 5
 Big Horn County Volunteer Fire Department
 Big Horn County Fire Protection District No. 4
 Big Horn County Search and Rescue
 Buffalo Volunteer Fire Department
 Campbell County Volunteer Fire Department
 Carbon County Volunteer Fire Department
 Casper Mountain Volunteer Fire Department
 Centennial Valley Volunteer - EMT
 Chugwater Volunteer Fire Department
 Clark Volunteer Fire Department
 Cody Volunteer Fire Department
 Cokeville Volunteer Fire Department/Bear River Fire Protection
 Converse County Rural Fire Department
 Crook County Volunteer Fire Department
 Dayton Volunteer Fire Department
 Douglas Volunteer Fire Department
 Dubois Volunteer Fire Department
 Eden-Farson Fire Control District
 Eden-Farson Volunteer Fire Department
 Elk Mountain Volunteer Fire Department

Affiliated Employers - List of Employers By Plan

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan (continued)

Encampment Volunteer Fire Department

Evanston Volunteer Fire Department

Evansville Volunteer Fire Department

Fort Laramie Volunteer Fire Department

Fremont County Fire Protection District

Glendo Volunteer Ambulance - EMT

Glendo Volunteer Fire Department

Glenrock Volunteer Fire Department

Granger Volunteer Fire Department

Green River Volunteer Fire Department

Greybull Volunteer Fire Department

Guernsey Rural Fire District

Guernsey Volunteer Fire Department

Hartville Volunteer Fire Department

Hawk Springs Volunteer Fire Department

Holly Frontier Refinery Fire Rescue

Hulett Emergency Medical Services Inc

Hulett Volunteer Fire Department

Jackson Hole - EMT

Jackson Hole Volunteer Fire

Jeffrey City Volunteer Fire Department

Johnson County Fire Control District 1

Johnson County Ambulance - EMT

LaGrange Volunteer Fire Department

Lander Volunteer Fire Department

Laramie County 1 Volunteer Fire Department

Laramie County 10 Volunteer Fire Department

Laramie County 2 Volunteer Fire Department

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan (continued)

Laramie County 4 Volunteer Fire Department

Laramie County 5 Volunteer Fire Department

Laramie County 6 Volunteer Fire Department

Laramie County 8 Volunteer Fire Department

Lingle Volunteer Fire Department

Little Snake River - EMT

Lovell Volunteer Fire Department

Lusk Volunteer Fire Department

Manderson Volunteer Fire Department

Medicine Bow Volunteer Fire Department

Meeteetse Volunteer Fire Department

Moorcroft Volunteer Fire Department

Newcastle Volunteer Fire Department

North Lincoln County Hospital District

Osage Volunteer Fire Department

Other

Palmer Canyon Fire Department

Pine Haven Ambulance

Pine Haven Volunteer Fire Department

Powder River Fire District

Powell Valley Healthcare - EMT

Powell Volunteer Fire Department

Prairie Center Volunteer Fire Department

Rawlins Volunteer Fire Department

Riverton Volunteer Fire Department

Rock River Volunteer Fire Department

Salt Creek Volunteer Fire Department

Saratoga Volunteer Fire Department

Shell Volunteer Fire Department

Sheridan Area Rural Volunteer Fire Department

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan (continued)

Sinclair Refinery Volunteer Fire Department

Sinclair Volunteer Fire Department

South Central EMS

South Lincoln Volunteer Fire Department

Story Volunteer Fire Department

Sublette County Unified Fire

Sundance Volunteer Fire Department

Superior Volunteer Fire Department

Sweetwater County Volunteer Fire Department

Sweetwater District 1 Volunteer Fire Department

Ten Sleep Ambulance Service - EMT

Ten Sleep Volunteer Fire Department

Teton County Volunteer Search and Rescue

Teton Village Volunteer Fire Department

Thayne Ambulance Service - EMT

Thayne Volunteer Fire Department

Thermopolis Volunteer Fire Department

Tongue River Volunteer Fire Department

Torrington Ambulance Service - EMT

Torrington Volunteer Fire Department

Town of Pine Bluffs EMS

Uinta County Volunteer Fire Department

Uinta County - EMT

Upton Volunteer Fire Department

Veteran Volunteer Fire Department

Wamsutter Volunteer Fire Department

Washakie County - EMT

Washakie County Search and Rescue

West Park Hospital - EMT

Affiliated Employers - List of Employers By Plan

Volunteer Firefighter, EMT, and Search & Rescue Pension Plan (continued)

Weston County Volunteer Fire Protection District

Wheatland Volunteer Fire Department

Worland Volunteer Fire Department

Yoder Volunteer Fire Department

Law Enforcement Pension Plan

Albany County

Big Horn County

Campbell County

Carbon County

City of Buffalo

City of Casper

City of Cheyenne

City of Cody

City of Douglas

City of Evanston

City of Gillette

City of Green River

City of Kemmerer

City of Lander

City of Laramie

City of Newcastle

City of Powell

City of Rawlins

City of Riverton

City of Rock Springs

City of Sheridan

City of Sundance

City of Torrington

City of Worland

Converse County

Crook County

Fremont County

Goshen County

Hot Springs County

Johnson County

Laramie County

Lincoln County

Natrona County

Northern Wyoming Community College

Law Enforcement Pension Plan (continued)

Park County

Platte County

Sheridan County

Sublette County

Sweetwater County

Sweetwater County Combined Communications Joint Powers Board

Teton County

Town of Afton

Town of Baggs

Town of Bairoil

Town of Basin

Town of Byron

Town of Cokeville

Town of Cowley

Town of Diamondville

Town of Encampment

Town of Evansville

Town of Glenrock

Town of Greybull

Town of Guernsey

Town of Hanna

Town of Hulett

Town of Jackson

Town of Lingle

Town of Lovell

Town of Lusk

Town of Lyman

Town of Midwest

Town of Mills

Town of Moorcroft

Town of Mountain View

Town of Pine Bluffs

Town of Saratoga

Town of Shoshoni

Town of Sinclair

Town of Thermopolis

Town of Upton

Town of Wheatland

Uinta County

University of Wyoming

Washakie County

Law Enforcement Pension Plan (continued)

Weston County

Wyoming Attorney General's Office

Wyoming Board of Livestock

Wyoming Board of Outfitters

Wyoming Department of Corrections

Wyoming Department of Transportation

Air Guard Firefighters Pension Plan

Wyoming Military Department

State Patrol, Game and Fish Warden and Criminal Investigator Pension Plan

Attorney General's Office

Department of Game & Fish

Department of Transportation

Judicial Pension Plan

Wyoming Judicial Branch



6101 Yellowstone Road, Suite 500
Cheyenne, Wyoming 82002
(307) 777-7691
retirement.wyo.gov