



# **SUMMARY ANNUAL FINANCIAL REPORT**

Prepared by the Accounting, Investment and Communications Divisions

# **2019**

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

**Kentucky Retirement Systems (KRS)  
A component unit of the Commonwealth of Kentucky**

**County Employees Retirement System (CERS)  
Kentucky Employees Retirement System (KERS)  
State Police Retirement System (SPRS)**

# LETTER FROM EXECUTIVE DIRECTOR

**February 1, 2020**

On behalf of the Board of Trustees (Board), management, and staff of KRS, it is my honor to present the KRS Summary Annual Financial Report for the Fiscal Year Ended June 30, 2019. This summary report and the Comprehensive Annual Financial Report (CAFR) are provided as resources for understanding the structure and financial status of KRS.

Here are a few highlights:

## **Effective and Transparent Management**

The Board and staff at KRS are committed to managing all aspects of KRS effectively and with complete transparency. We continuously examine every aspect of our procedures and policies striving for enhancements. All records and information not protected by statutes or confidentiality agreements are available on our website, in our CAFR, or by request. All Board meetings and most Committee meetings are live streamed and archived on the official KRS Facebook page.

We publish various newsletters targeted to our members and governmental officials including all legislators, employees of the Legislative Research Commission and most members of the Executive Branch senior staff. We have frequent meetings with members, government officials, member groups and anyone else interested in getting information about KRS or giving us input.

## **Continuous Improvement**

For the first time in 18 years our most financially troubled plan, KERS Non-Hazardous, had positive cash flow during fiscal year 2019.

We received more in contributions than we paid in benefits and expenses. CERS will likely move into that position shortly as the phase in of higher contributions moves into its second year.

From an administrative and communications standpoint, many enhancements were implemented, most notably continuing to improve member mobile access through our website and member self service. House Bill (HB) 490, which passed during the 2019 Regular Session of the General Assembly, allows us to use electronic balloting for new Trustee elections. We began Town Hall meetings, with the first being held at Northern Kentucky University. Subsequent Town Hall meetings were held in Elizabethtown for members of the Kentucky Community and Technical College System, and in London for nearly 100 managers of public health departments.

## **State Auditor's Audit and Special Examination**

Every five years, KRS is audited by the State Auditor's office with the most recent audit completed for fiscal year 2018. That audit uncovered only three exceptions compared to 19 in the prior audit. All three exceptions have been addressed.

In August 2019, the Auditor's office concluded a 14-month Special Examination of our compliance with Senate Bill (SB) 2, which was passed in 2017. The audit purported two areas of significant non-compliance, both of which KRS strongly contested. KRS is working with the Public Pension Oversight Board (PPOB) to resolve these disagreements with the Auditor's office while continuing our commitment to transparency.

## **Legislation**

During the 2019 General Assembly, seven bills and two resolutions were passed that affected KRS. Most notably, however, the Special Session of the General Assembly in July 2019 produced HB 1. That bill provided four additional options



# LETTER FROM EXECUTIVE DIRECTOR

for the 115 Quasi State Agencies to exit the KERS Non-Hazardous plan, should they choose to do so at discount rates ranging from 4.5% to 3.0% and either by a lump sum payment or using installments. Previously, HB 351 only provided a lump sum option with a discount rate tied to the 30 year Treasury fund. These agencies will notify KRS during April 2020 as to whether they choose to stay in the plan and pay the full contribution rate or exit using one of the four exit options.

KRS is monitoring a number of bills during the 2020 Regular Session of the General Assembly.

## Investments

The investment markets and consequently our plans' investment returns were lackluster in fiscal year 2019. KERS Non-Hazardous and SPRS earned 5.73% and 5.71%, respectively, and exceeded their assumed rate of return of 5.25%. On the other hand, all of the other plans earned between 5.61% and 5.81% (except the KERS Non-Hazardous Insurance Plan, which earned 4.95%). As such, all eight of those plans failed to earn their assumed rate of return of 6.25%.

## Funded Statuses

Fiscal year 2019 marked the fourth year in a row that the KERS and SPRS plans received the full Actuarially Determined Contribution (ADC), with the exception of KERS Non-Hazardous Quasi State Agencies. While the CERS plans established a new ADC that is about 50% above the prior rate, it is being phased in over a four to five year period. As a result, the funded status of those two pension plans declined somewhat. We are thankful to the Governor and the Legislature for the additional funding.

## Cyber Security

KRS takes seriously the mandate to retain the confidentiality of member and employer data. To this end, KRS continued to invest in

applications and infrastructure to improve member services and increase staff productivity while maintaining vigilance towards cyber security. During fiscal year 2019, our technology team successfully tested our Disaster Recovery replication technology and improved the efficiency, frequency, and monitoring of internal security awareness training. Additionally, we modernized the self-service application to enhance the security and functionality available to our members and retirees. We also continued our efforts to upgrade server operating systems, replace aging storage and end-of-life equipment, and maintain regular software patching.

## Looking Forward

By far our most important mandate is to work with the Legislature to assure that KRS gets the required funding. Our actuaries, GRS Consulting, project that all of our pension and insurance plans will become fully funded in fiscal year 2043, provided KRS receives the full ADC each year. Those same projections indicate that all benefits will be secure going forward, supported by the positive fiscal impact of the Tier 3 Hybrid Cash Balance Plan.

## Acknowledgments

The preparation of this report has been a collaborative effort of Executive Management and the Accounting, Investments, and Communications Divisions. KRS takes responsibility for all of the information contained in the report and confidently presents it as a basis for making management decisions that promote the responsible stewardship of the assets of KRS.



**David L. Eager**  
**Executive Director**

# BOARD OF TRUSTEES

as of February 1, 2020

## - GOVERNOR APPOINTED -

**David L. Harris**

Chair

Term ends 6/17/22

**W. Joe Brothers**

Term ends 7/1/21

**John Cheshire III**

Term ends 6/17/23

**John E. Chilton**

Term ends 6/17/22

**Kelly Downard**

Term ends 6/17/23

**J.T. Fulkerson**

Term ends 7/1/21

**Joseph L. Grossman**

Term ends 6/17/22

**C. Prewitt Lane**

Term ends 6/17/23

**Matthew Monteiro**

Term ends 6/17/23

**VACANT**

Term ends 7/1/21

**Gerina Whethers**

Personnel Secretary  
Ex-Officio

## - ELECTED -

**Keith Percy**

Vice Chair

Elected by SPRS

Term ends 3/31/23

**Campbell Connell**

Elected by KERS

Term ends 3/31/22

**Sherry Lynn Kremer**

Elected by KERS

Term ends 3/31/22

**Betty Pendergrass**

Elected by CERS

Term ends 3/31/21

**Jerry W. Powell**

Elected by CERS

Term ends 3/31/21

**David Rich**

Elected by CERS

Term ends 10/31/21

## FINDING OUR COMPREHENSIVE ANNUAL REPORT

To view the Comprehensive Annual Financial Report (CAFR) in its entirety, please visit us online.

1. Go to: [KYRET.KY.GOV](http://KYRET.KY.GOV)
2. Select: **PUBLICATIONS AND FORMS**
3. Select: **COMPREHENSIVE ANNUAL FINANCIAL REPORTS**
4. Click on: **2019 CAFR**

## 2020 SCHEDULES

### BOARD MEETINGS

February 20

April 16\*

May 21

September 10

November 12

December 3

\* Annual Meeting

### COMMITTEE MEETINGS

#### AUDIT

February 6

May 7

August 27

November 5

#### RETIREE HEALTH PLAN

February 11

May 12

September 3

November 10

#### INVESTMENT

February 4

May 5

August 25

November 4

### ADMINISTRATIVE & DISABILITY APPEALS

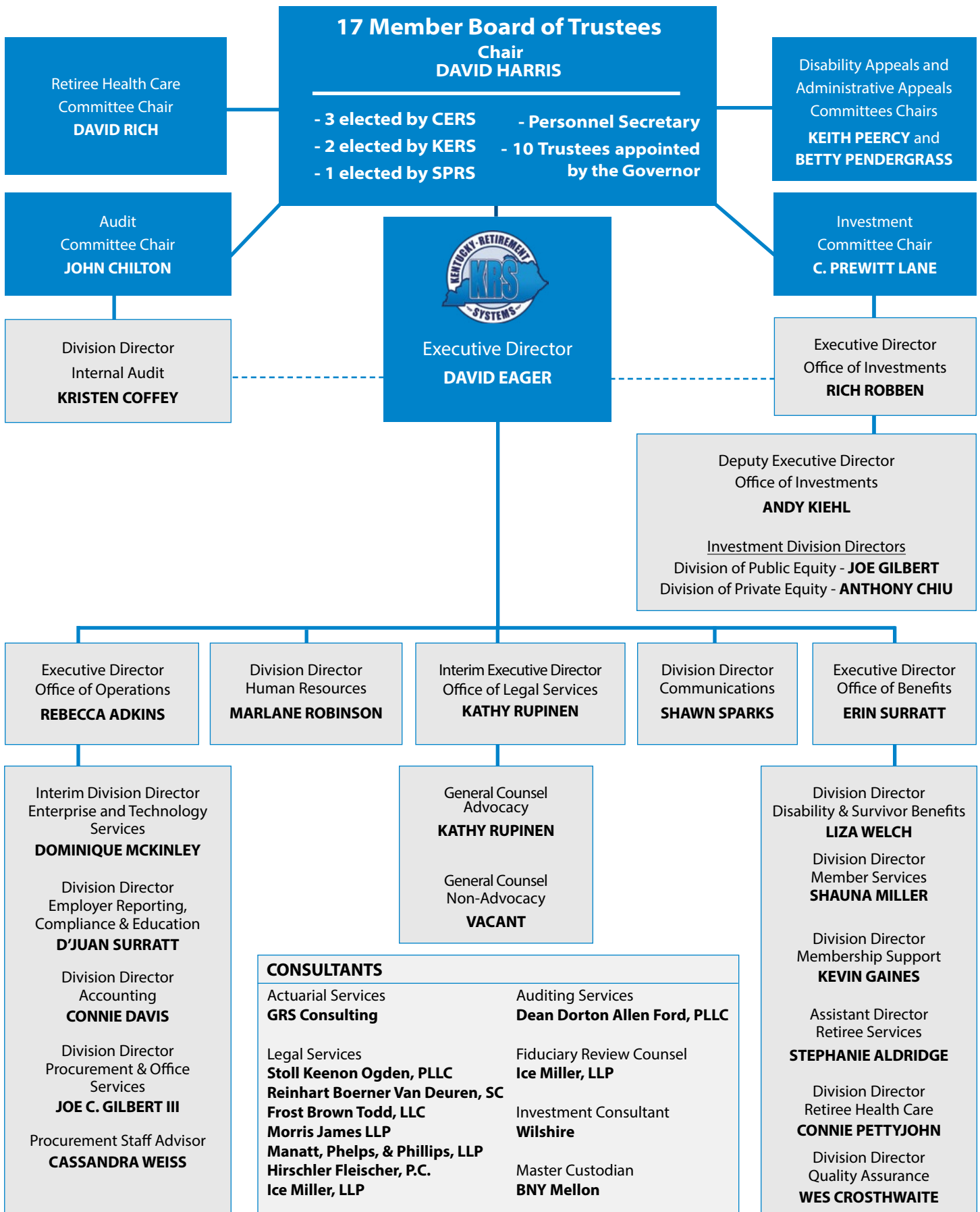
*Please check our website  
for dates and times*



Meeting dates subject to change. Please visit our website for updates. Board Meetings, Audit Committee, and Retiree Health Care meetings begin at 10 a.m. Eastern; all other meetings begin at 9 a.m. Eastern unless otherwise noted. Watch meetings live on our Facebook page.

# AGENCY STRUCTURE

as of February 1, 2020





# SYSTEMS AND BENEFIT TIERS

KRS administers three systems. CERS and KERS are multiple-employer, cost-sharing defined benefit pension plans with Non-Hazardous and Hazardous members. SPRS is a single-employer, defined benefit pension plan with Hazardous members. Each system covers regular full-time members employed by the participating agencies.

## BENEFIT TIERS

Each plan provides pension and insurance benefits based on the member's participation date.



**Participation Date**  
Prior to 9/1/2008



**Participation Date**  
9/1/2008 - 12/31/2013



**Participation Date of**  
1/1/14 and after

## HEALTH INSURANCE

KRS pays a percentage of the monthly contribution rate or a dollar amount toward insurance coverage. The contribution amount is based on the retired member's participation date, years of service, and type of service. A percentage of the monthly contribution rate is paid for members participating prior to July 1, 2003. A dollar amount is paid toward insurance coverage for members participating on or after July 1, 2003.



### COUNTY EMPLOYEES RETIREMENT SYSTEM

CERS participating agencies include local governments (county and city), school boards, and eligible local agencies. The Non-Hazardous and Hazardous plans combined cover 248,969 members.

CERS Non-Hazardous				
	Active	Inactive	Retired	Total
<b>Tier 1</b>	34,428	51,356	58,497	144,281
<b>Tier 2</b>	15,352	17,123	435	32,910
<b>Tier 3</b>	34,852	16,821	1	51,674
<b>Total</b>	<b>84,632</b>	<b>85,300</b>	<b>58,933</b>	<b>228,865</b>

CERS Hazardous				
	Active	Inactive	Retired	Total
<b>Tier 1</b>	4,441	1,471	7,985	13,897
<b>Tier 2</b>	1,967	548	12	2,527
<b>Tier 3</b>	2,994	683	3	3,680
<b>Total</b>	<b>9,402</b>	<b>2,702</b>	<b>8,000</b>	<b>20,104</b>



### KENTUCKY EMPLOYEES RETIREMENT SYSTEM

KERS participating agencies include state departments, boards, and employers directed by Executive Order of the Governor to participate in KERS, which covers 135,046 members.

KERS Non-Hazardous				
	Active	Inactive	Retired	Total
<b>Tier 1</b>	17,086	32,034	42,736	91,856
<b>Tier 2</b>	6,207	8,527	137	14,871
<b>Tier 3</b>	10,139	6,160	1	16,300
<b>Total</b>	<b>33,432</b>	<b>46,721</b>	<b>42,874</b>	<b>123,027</b>

KERS Hazardous				
	Active	Inactive	Retired	Total
<b>Tier 1</b>	1,264	1,833	3,121	6,218
<b>Tier 2</b>	752	1,267	25	2,044
<b>Tier 3</b>	1,763	1,994	0	3,757
<b>Total</b>	<b>3,779</b>	<b>5,094</b>	<b>3,146</b>	<b>12,019</b>



### STATE POLICE RETIREMENT SYSTEM

SPRS covers all full-time Kentucky State Police troopers.

SPRS				
	Active	Inactive	Retired	Total
<b>Tier 1</b>	460	173	1,483	2,116
<b>Tier 2</b>	197	64	1	262
<b>Tier 3</b>	242	76	0	318
<b>Total</b>	<b>899</b>	<b>313</b>	<b>1,484</b>	<b>2,696</b>

### KRS TOTALS

The KRS totals below reflect all systems combined.

KRS TOTALS - ALL SYSTEMS				
	Active	Inactive	Retired	Total
<b>Tier 1</b>	57,679	86,867	113,822	258,368
<b>Tier 2</b>	24,475	27,529	610	52,614
<b>Tier 3</b>	49,990	25,734	5	75,729
<b>Total</b>	<b>132,144</b>	<b>140,130</b>	<b>114,437</b>	<b>386,711</b>

# HOW MEMBER BENEFITS ARE FUNDED

## Benefits are funded from three sources:

### 1. EMPLOYER CONTRIBUTIONS

Recommended employer contribution rates are determined by KRS' independent actuary based on data in the annual actuarial valuation. The Board adopts employer contribution rates necessary for the actuarial soundness of KRS as required by Kentucky Revised Statutes 61.565 and 61.702. KERS and SPRS employer rates are subject to approval by the Kentucky General Assembly through the adoption of the biennial Executive Branch Budget. The Board also sets CERS employer contribution rates, unless altered by legislation enacted by the Kentucky General Assembly. Employer contributions are deposited to the Retirement Allowance Account and the Insurance Fund and are used to pay monthly benefits and to fund KRS expenses.

### 2. EMPLOYEE CONTRIBUTIONS

Members contribute a percent of their creditable compensation as set by state law based on their benefit tier.

Employee contributions paid to KRS are deposited to individual member accounts. When an employee retires, his or her account balance is transferred to the Retirement Allowance Account (the account from which monthly benefits are paid).



**Tier 1 Members** contribute 5% for Non-Hazardous and 8% for Hazardous service.

**Tier 2 and Tier 3 members** contribute 6% for Non-Hazardous and 9% for Hazardous service. One percent is deposited to the KRS Insurance Fund.

### 3. INVESTMENTS

The Board is charged with the responsibility of investing KRS' assets to provide for member benefits. To achieve that goal, the Board follows a policy of thoughtfully growing our asset base while protecting against undue risk and losses in any particular investment area.

The Board recognizes its fiduciary duty to not only invest the funds in compliance with the Prudent Person Rule, but also to manage the funds in continued recognition of the basic long-term nature of KRS. In carrying out their fiduciary duties, the Trustees have set forth clearly defined investment policies, objectives, and strategies.

KRS maintains all plan assets for CERS, KERS, and SPRS through separate financial accounts and does not commingle assets between the plans. Plan assets are reported individually in audited financial statements.

PARTICIPATING EMPLOYERS by Classification	Number of Agencies
<b>CERS</b>	
Airport Boards	5
Ambulance Services	19
Area Development Districts	14
Boards of Education	173
Cities	221
Community Action Agencies	21
Conservation Districts	49
County Attorneys	81
County Clerks	16
Development Authorities	6
Fire Departments	35
Fiscal Courts	118
Health Departments	1
Housing Authorities	42
Jailers	2
Libraries	85
Other Retirement Systems	2
P1 State Agencies	4
Parks and Recreation	7
Planning Commissions	16
Police Departments	2
Riverport Authorities	5
Sanitation Districts	9
Sheriff Departments	12
Special Districts & Boards	50
Tourist Commissions	23
Urban Government Agencies	2
Utility Boards	120
<b>Total</b>	<b>1,140</b>
<b>KERS</b>	
County Attorneys	61
Health Departments	60
Master Commissioner	33
Non-P1 State Agencies	35
Other Retirement Systems	1
P1 State Agencies	134
Regional Mental Health Units	12
Universities	7
<b>Total</b>	<b>343</b>
<b>SPRS</b>	
Kentucky State Police Officers	1
<b>TOTAL EMPLOYERS</b>	<b>1,484</b>

# EMPLOYER COSTS BY TIER

## COST COMPONENTS

Employer contributions have two components. The **normal cost** covers the benefit accruals active participants will earn during the upcoming year toward their retirement and insurance benefits. The second component is the unfunded liability. The **unfunded liability cost** represents the benefit accruals a member has already earned that were not fully funded in prior fiscal years.

## UNFUNDED LIABILITY

Unfunded liabilities are debt obligations that do not have sufficient funds set aside to pay the debt. They result primarily from four factors:

1. A shortfall between the Actuarially Determined Contribution (ADC) and the actual contribution.
2. Changes in actuarial assumptions, such as demographic and economic factors, that were required based on plan experience.
3. Investment returns that fell short of the assumed investment rate of return.
4. Benefit increases that were not pre-funded, such as previous retiree Cost of Living Adjustments.

	CERS Non-Hazardous	CERS Hazardous	KERS Non-Hazardous	KERS Hazardous	SPRS
<b>NORMAL COST RATES<sup>1</sup> - PENSION</b> (Each employer's cost for an employee's retirement benefit)					
<b>Tier 1 Cost</b> Before 7/03	7.89%	13.74%	8.78%	11.94%	22.66%
<b>Tier 1 Cost</b> After 7/03	7.59%	13.60%	9.21%	11.94%	22.37%
<b>Tier 2 Cost</b>	4.74%	10.67%	6.36%	8.20%	18.75%
<b>Tier 3 Cost</b>	3.00%	5.70%	3.48%	5.13%	7.18%
<b>Average Normal Cost<sup>2</sup></b>	<b>6.63%</b>	<b>11.36%</b>	<b>7.99%</b>	<b>9.21%</b>	<b>19.39%</b>
<b>NORMAL COST RATES<sup>1</sup> - INSURANCE</b> (Each employer's cost for an employee's insurance benefit)					
<b>Tier 1 Cost</b> Before 7/03	5.33%	12.44%	4.26%	12.52%	16.05%
<b>Tier 1 Cost</b> After 7/03	3.23%	3.61%	2.32%	4.36%	4.61%
<b>Tier 2 Cost</b>	1.18%	1.80%	0.53%	1.88%	2.63%
<b>Tier 3 Cost</b>	1.18%	1.89%	0.38%	1.74%	2.95%
<b>Average Normal Cost<sup>2</sup></b>	<b>2.95%</b>	<b>5.46%</b>	<b>2.36%</b>	<b>4.40%</b>	<b>8.15%</b>
<b>Total Pension &amp; Insurance</b>	<b>9.58%</b>	<b>16.82%</b>	<b>10.35%</b>	<b>13.61%</b>	<b>27.54%</b>
<b>UNFUNDED LIABILITY COST %</b> (Each employer's cost for the unfunded liability)					
<b>Pension</b>	19.58%	34.95%	72.99%	29.50%	116.73%
<b>Insurance</b>	2.83%	5.01%	9.67%	-5.47%	12.70%
<b>Total Unfunded Liability Cost</b>	<b>22.41%</b>	<b>39.96%</b>	<b>82.66%</b>	<b>24.03%</b>	<b>129.43%</b>

<sup>1</sup> Normal Cost Rate is the cost of an employee's retirement benefit to the employer net of employee contributions.

<sup>2</sup> Average Normal Cost Rate is the blended normal cost rate of all members active as of the valuation date and includes administrative expenses.



# ECONOMIC IMPACT FOR KENTUCKY

Pension benefits paid to KRS retirees and beneficiaries have a wide-ranging impact on the state's economic health. In fiscal year 2019, KRS paid over \$2 billion in benefit payments. The majority, 93.64%, of these payments are issued to Kentucky residents.

Each county in the Commonwealth of Kentucky receives at least \$1 million annually from KRS, which provides a consistent revenue stream for all local economies.

## Fiscal Year 2019 Total Pension Benefit Payments

	PAYEES	%	PAYMENTS
Kentucky	107,429	93.64%	\$1,991,764,279
Out of State	8,166	6.36%	\$135,276,104
<b>Grand Total</b>	<b>115,595</b>	<b>100.00%</b>	<b>\$2,127,040,383</b>

## Fiscal Year 2019 Pension Benefits Paid by County (In Whole \$)

COUNTY	PAYEES	TOTAL	COUNTY	PAYEES	TOTAL	COUNTY	PAYEES	TOTAL	COUNTY	PAYEES	TOTAL
Adair	466	\$7,615,956	Edmonson	234	\$3,250,714	Knox	599	\$9,469,444	Nicholas	203	\$2,829,240
Allen	400	\$5,421,662	Elliott	174	\$2,495,828	LaRue	351	\$5,610,616	Ohio	620	\$6,596,294
Anderson	1,376	\$34,585,340	Estill	398	\$5,558,653	Laurel	1,215	\$20,001,257	Oldham	1,315	\$27,368,080
Ballard	234	\$3,315,003	Fayette	5,378	\$116,208,593	Lawrence	326	\$3,869,296	Owen	528	\$12,453,409
Barren	1,042	\$15,976,857	Fleming	454	\$7,796,930	Lee	228	\$3,229,568	Owsley	211	\$3,125,299
Bath	379	\$5,742,217	Floyd	890	\$13,391,549	Leslie	256	\$3,772,293	Pendleton	342	\$5,704,603
Bell	653	\$10,411,102	Franklin	6,364	\$197,110,205	Letcher	586	\$8,120,178	Perry	776	\$11,183,660
Boone	1,744	\$35,467,725	Fulton	184	\$2,202,014	Lewis	319	\$3,971,165	Pike	1,240	\$18,204,555
Bourbon	546	\$9,078,241	Gallatin	121	\$2,090,458	Lincoln	661	\$8,343,044	Powell	335	\$4,492,316
Boyd	1,036	\$17,134,540	Garrard	421	\$6,192,823	Livingston	257	\$4,322,496	Pulaski	2,201	\$36,871,366
Boyle	876	\$15,204,119	Grant	583	\$11,073,167	Logan	603	\$8,302,421	Robertson	67	\$1,082,520
Bracken	219	\$2,856,368	Graves	865	\$13,475,113	Lyon	354	\$6,614,781	Rockcastle	385	\$5,219,940
Breathitt	488	\$7,628,559	Grayson	731	\$11,004,559	Madison	2,301	\$38,425,956	Rowan	853	\$14,512,026
Breckinridge	463	\$6,628,920	Green	279	\$3,815,946	Magoffin	351	\$4,894,117	Russell	555	\$8,408,197
Bullitt	1,507	\$27,357,298	Greenup	637	\$8,803,604	Marion	538	\$7,447,486	Scott	1,230	\$25,709,661
Butler	314	\$4,300,958	Hancock	218	\$2,713,445	Marshall	868	\$12,867,146	Shelby	1,635	\$40,847,145
Caldwell	521	\$7,818,641	Hardin	2,149	\$35,500,123	Martin	273	\$2,993,692	Simpson	278	\$3,252,681
Calloway	1,059	\$14,842,976	Harlan	632	\$9,593,030	Mason	404	\$6,595,232	Spencer	468	\$10,119,879
Campbell	1,507	\$28,195,929	Harrison	456	\$6,857,309	McCracken	1,551	\$28,075,809	Taylor	637	\$9,081,895
Carlisle	116	\$1,608,482	Hart	316	\$4,714,129	McCreary	393	\$4,114,583	Todd	254	\$3,550,580
Carroll	308	\$4,890,064	Henderson	1,034	\$17,322,622	McLean	301	\$4,376,004	Trigg	504	\$8,188,639
Carter	772	\$10,033,593	Henry	915	\$20,268,277	Meade	442	\$6,151,662	Trimble	274	\$4,199,739
Casey	355	\$4,488,265	Hickman	94	\$1,757,979	Menifee	209	\$2,923,704	Union	349	\$3,960,207
Christian	1,525	\$26,508,883	Hopkins	1,233	\$18,893,980	Mercer	759	\$13,675,356	Warren	2,745	\$48,424,647
Clark	826	\$14,000,179	Jackson	318	\$4,150,954	Metcalfe	304	\$3,823,947	Washington	324	\$5,094,643
Clay	575	\$8,453,754	Jefferson	16,145	\$350,450,831	Monroe	263	\$2,947,277	Wayne	528	\$7,442,799
Clinton	252	\$3,227,953	Jessamine	1,051	\$18,170,230	Montgomery	631	\$10,076,080	Webster	343	\$4,355,490
Crittenden	217	\$2,800,722	Johnson	618	\$9,434,569	Morgan	604	\$10,254,075	Whitley	1,028	\$14,717,166
Cumberland	185	\$2,734,102	Kenton	2,239	\$46,511,532	Muhlenberg	786	\$9,825,148	Wolfe	327	\$5,284,546
Daviess	2,575	\$45,974,589	Knott	437	\$6,761,023	Nelson	1,019	\$17,304,662	Woodford	1,018	\$25,211,376

NOTE: This table represents all payees receiving a monthly payment during the fiscal year. Members receiving payments from multiple accounts are represented as one payee.

# FINANCIAL REPORT

*This is an overview of the financial activities for the fiscal year ended June 30, 2019. For more detailed information, refer to the Financial Section of the 2019 CAFR published on the KRS website.*

## 2019 FINANCIAL HIGHLIGHTS

Fiscal year 2019 financial performance for the Pension and Insurance plans improved from 2018. Net position increased from \$17.6 billion to \$18.4 billion. The 5% improvement was primarily attributable to positive investment returns, higher employer contributions, and General Fund appropriations of \$77.0 million. Additional details are provided below and further detailed in the 2019 CAFR.

## PENSION

The Total Pension Fiduciary Net Position across the five plans was \$12.4 billion at the beginning of the fiscal year and increased over 4% to \$12.9 billion as of June 30, 2019. The \$0.5 billion increase was due in large part to the improvement in the fair value of investments, appropriations and increased contributions, and was partially offset by higher retiree payment outflows.

## INSURANCE

The combined Fiduciary Net Position of the five Insurance plans administered by KRS increased by \$315.5 million during fiscal year 2019. Total combined net position for the fiscal year was \$5.5 billion. The net position increase was driven by improved investment performance and higher employer contributions.

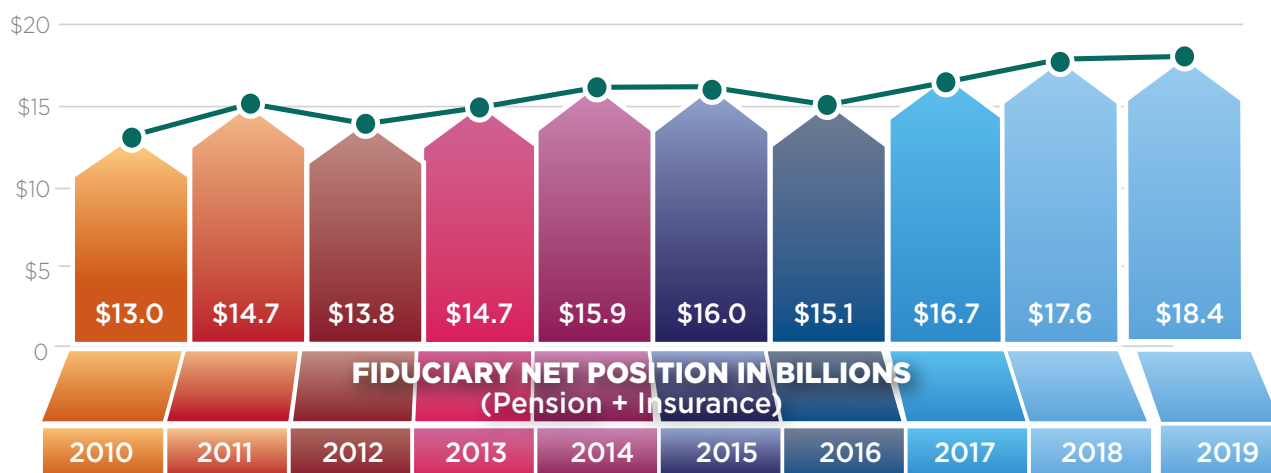
## INVESTMENTS

Fiscal year 2019 investment performance was positive, but was below both the benchmark used to measure performance of plans and the assumed rate of return of 6.25% for CERS, CERS Hazardous, and KERS Hazardous. KERS Non-Hazardous and SPRS outperformed the assumed rate of return of 5.25%. The KRS Pension Funds earned a net return of 5.83% (versus the 6.00% benchmark). The KRS Insurance Fund earned a net return of 5.67%, and also underperformed the benchmark of 5.89% and the assumed rate of return of 6.25% used for all Insurance Fund Plans. Although the 2019 Pension and Insurance Funds' investment returns were lower when compared to 2018 (8.57% and 9.05%), all of the plans increased net position at the end of the fiscal year.

## CASH FLOWS

**Pension:** Cash flows for the KERS and SPRS plans continued to improve due to General Fund appropriations and realized investment gains. In fiscal year 2019, the KERS plans and SPRS received additional General Fund appropriations of \$77.0 million. Employer contribution rates increased across all plans for fiscal year 2019, except for KERS Non-Hazardous Quasi agencies, helping to sustain cash flows.

**Insurance:** Cash flows for the five plans have continued to stabilize over the last five years with increased employer contribution rates, except for KERS Hazardous, which is overfunded. The plans have also benefited from a benefit formula change starting in 2003, lower expenses, and favorable claims experience.



## TABLE 1 - ASSETS AND LIABILITIES

This table shows the assets and liabilities for the years ending June 30, 2019 and June 30, 2018. Total liabilities are comprised of securities lending collateral, investment accounts payable (buys) and outstanding employer/member invoices. The Fiduciary Net Position represents the funds KRS has accumulated thus far to pay pension benefits for retirees, active and inactive members, and health care premiums for current and future retirees.

**Table 1. Fiduciary Net Position (\$ in Millions)**

	Pension Funds		Insurance Fund		Total	
Assets	2019	2018	2019	2018	2019	2018
Cash & Investments	\$13,134	\$12,859	\$5,623	\$5,367	\$18,757	\$18,226
Receivables	468	349	142	149	610	498
Equip/Int Assets, net of dep/amort.	3	5	-	-	3	5
<b>Total Assets</b>	<b>13,605</b>	<b>13,213</b>	<b>5,765</b>	<b>5,516</b>	<b>19,370</b>	<b>18,729</b>
<b>Total Liabilities</b>	<b>(671)</b>	<b>(797)</b>	<b>(284)</b>	<b>(351)</b>	<b>(955)</b>	<b>(1,148)</b>
<b>Fiduciary Net Position</b>	<b>\$12,934</b>	<b>\$12,416</b>	<b>\$5,481</b>	<b>\$5,165</b>	<b>\$18,415</b>	<b>\$17,581</b>

**Investment Income (Loss) for Pension Funds (\$ in Millions)**

Asset	2019	2018
Increase (Decrease) in fair value of investments	\$274	\$(142)
Investment income net of investment expense	209	182
Gain on sale of investments	211	948
<b>Net Investment Income</b>	<b>\$694</b>	<b>\$988</b>

## TABLE 2 - INCOME AND EXPENSES

This table shows the annual additions (income) and deductions (expenses) for the plans. Investment earnings and contributions typically make up the majority of the income. Investment returns were positive in 2019 and 2018 for both Pension and Insurance plans. The deductions largely represent pension benefits, health insurance expenses, administrative costs, and refunds of contributions to inactive members.

**Table 2. Changes in Fiduciary Net Position (\$ in Millions)**

	Pension Funds		Insurance Fund		Total	
Additions	2019	2018	2019	2018	2019	2018
Member Cont.	\$334	\$350	\$-	\$-	\$334	\$350
Employer Cont.	1,594	1,170	387	322	1,981	1,492
Health Ins. Cont.	21	20	-	-	21	20
Humana Gain Share	-	-	8	-	8	-
Pension Spiking Cont.	-	8	-	-	-	8
General Fund Appr.	77	88	-	-	77	88
Employer Cessation Cont.	11	-	1	-	12	-
Premiums Ret Re-emp	-	-	11	10	11	10
Net Investment Income	694	988	289	427	983	1,415
<b>Total Additions</b>	<b>\$2,731</b>	<b>\$2,624</b>	<b>\$696</b>	<b>\$759</b>	<b>\$3,427</b>	<b>\$3,383</b>
<b>Deductions:</b>						
<b>Benefit payments</b>	<b>\$2,144</b>	<b>\$2,062</b>	<b>\$-</b>	<b>\$-</b>	<b>\$2,144</b>	<b>\$2,062</b>
<b>Refunds</b>	<b>32</b>	<b>35</b>	<b>-</b>	<b>-</b>	<b>32</b>	<b>35</b>
<b>Admin/Cap. Proj.</b>	<b>37</b>	<b>33</b>	<b>2</b>	<b>2</b>	<b>39</b>	<b>35</b>
<b>Healthcare Costs</b>	<b>-</b>	<b>-</b>	<b>378</b>	<b>376</b>	<b>378</b>	<b>376</b>
<b>Total Deductions</b>	<b>2,213</b>	<b>2,130</b>	<b>380</b>	<b>378</b>	<b>2,593</b>	<b>2,508</b>
<b>Increase in Fiduciary Net Position</b>	<b>\$518</b>	<b>\$494</b>	<b>\$316</b>	<b>\$381</b>	<b>\$834</b>	<b>\$875</b>

**Investment Income (Loss) for Insurance Fund (\$ in Millions)**

Asset	2019	2018
Increase (Decrease) in fair value of investments	\$113	\$25
Investment income net of investment expense	92	61
Gain on sale of investments	83	341
<b>Net Investment Income</b>	<b>\$288</b>	<b>\$427</b>

**KRS Administrative Expenses (\$ in Millions)**

KRS staff = 247 employees	2019	2018
Salaries	\$14.0	\$13.9
Pension & Benefits	13.8*	9.8
Contractual Services	2.4	3.2
Communications	0.6	0.7
Rent/Utilities/Misc	1.3	1.5
Technology	2.5	1.9
Healthcare Retiree Fees	2.4	2.1
Depreciation	1.8	1.9
<b>Total</b>	<b>\$38.8</b>	<b>\$35.0</b>

\*Reflects increase in employer contribution rate for covered payroll.

# INVESTMENTS REPORT

*This is an overview of the investment activities for the fiscal year ended June 30, 2019. For more detailed information, refer to the Investments Section of the 2019 CAFR published on the KRS website.*

## PENSION FUNDS RESULTS

As of June 30, 2019, the KRS Pension Funds earned net returns of 5.83%, falling short of the benchmark of 6.00%. The Pension Funds' returns exceeded the actuarial assumed rates of return of 5.25% for KERS Non-Hazardous and SPRS but fell short of the 6.25% for CERS Non-Hazardous, CERS Hazardous, and KERS Hazardous. Total Public Equity comprised 38.31% of all assets in the Pension Funds and produced a total return of 4.07%. U.S. Equity accounted for 18.25% of all assets, and Non-U.S. Equity accounted for 20.06% of all assets; the two asset classes returned 7.72% and 1.10%, respectively. Private Equity and Real Estate also added value with returns of 11.50% and 8.81%, respectively, for the fiscal year.

### Net Returns By Plan - PENSION FUNDS (\$ in Millions)

Plan	Fair Value (\$ in Millions)	% of Total Fair Value	1 Year (%)		3 Years (%)		5 Years (%)		10 Years (%)		Inception (%)	
			KRS	Index	KRS	Index	KRS	Index	KRS	Index	KRS	Index
CERS Non-Hazardous	\$7,189	56.40%	5.78	6.00	9.40	9.24	5.83	5.72	8.86	8.81	9.05	9.15
CERS Hazardous	2,414	18.94%	5.80	6.00	9.38	9.23	5.86	5.71	8.87	8.81	9.06	9.15
KERS Non-Hazardous	2,178	17.09%	5.73	6.20	8.40	8.40	5.31	5.56	8.59	8.69	8.98	9.11
KERS Hazardous	685	5.38%	5.68	6.00	9.22	9.22	5.78	5.72	8.84	8.81	9.05	9.15
SPRS	280	2.19%	5.71	6.08	8.58	8.69	5.14	5.47	8.51	8.68	8.96	9.11
<b>KRS*</b>	<b>\$12,746</b>	<b>100.00%</b>	<b>5.83</b>	<b>6.00</b>	<b>9.24</b>	<b>9.02</b>	<b>5.76</b>	<b>5.85</b>	<b>8.82</b>	<b>8.84</b>	<b>9.04</b>	<b>9.15</b>

\*The KRS total is not a weighted average of each plan. Each plan has a different asset allocation which results in different returns compared to the overall pool.

### Net Returns By Allocation - PENSION FUNDS (\$ in Millions) Note: Fair values are adjusted for accruals and expenses

Structure	Inception	Fair Value (\$ in Millions)	% of Total	1 Year (%)		3 Years (%)		5 Years (%)		10 Years (%)		Inception To Date		External FEES (\$ in Millions)
				KRS	Index	KRS	Index	KRS	Index	KRS	Index	KRS	Index	
Total Fund	4/1/84	\$12,746	100.00%	5.83	6.00	9.24	9.02	5.76	5.85	8.82	8.84	9.04	9.15	\$94.4
Total Public Equity	4/1/84	4,883	38.31%	4.07	4.65	11.72	11.77	6.09	5.94	10.29	10.46	10.41	10.25	12.6
U.S. Equity	4/1/84	2,326	18.25%	7.72	8.98	13.33	14.02	9.38	10.19	13.99	14.70	11.26	11.32	5.6
Non-U.S. Equity <sup>1</sup>	7/1/00	2,557	20.06%	1.10	0.26	10.45	9.36	3.44	2.36	7.04	6.94	3.15	3.36	7.0
Core Fixed Income	4/1/84	2,287	17.94%	7.09	7.87	2.34	2.31	2.97	2.95	-	-	3.30	3.18	2.9
Specialty Credit	7/1/17	2,009	15.76%	6.81	5.72	-	-	-	-	-	-	6.35	4.60	19.9
Opportunistic	7/1/18	118	0.92%	10.62	3.97	-	-	-	-	-	-	10.62	3.77	1.0
Real Return	7/1/11	1,106	8.68%	5.02	5.02	4.81	3.11	2.25	1.60	-	-	3.87	2.83	8.0
Private Equity	7/1/02	1,181	9.27%	11.50	11.50	12.92	12.92	10.73	10.73	13.91	15.37	11.19	10.51	26.8
Real Estate	7/1/84	472	3.71%	8.81	6.55	9.96	7.01	9.38	9.18	9.24	7.73	6.18	6.46	17.0
Absolute Return	4/1/10	219	1.71%	-0.54	2.10	3.42	4.21	1.81	2.55	-	-	3.63	2.97	3.1
Cash Account <sup>2</sup>	1/1/88	\$471	3.70%	2.37	2.30	1.75	1.36	1.17	0.84	0.88	0.46	3.56	3.11	\$3.1

<sup>1</sup>Equities include trade commissions. <sup>2</sup>Cash accounts include custodian, consulting and miscellaneous investment expenses.

## INSURANCE FUND RESULTS

As of June 30, 2019, the KRS Insurance Fund earned a net return of 5.67% compared to the benchmark return of 5.89%. The Insurance Fund achieved rates of return of 5.92% over the five year period and 8.97% over the 10 year period. In fiscal year 2019, the Insurance Fund gained from the same favorable market conditions as the Pension Funds. Total Public Equity made up 39.55% of all assets in the Insurance Fund and provided value with a total return of 4.02%. U.S. Equity, which accounted for 19.02% of all assets, and Non-U.S. Equity, which accounted for 20.53% of all assets, returned 7.74% and 0.94%, respectively. Private Equity and Real Estate added value with returns of 10.88% and 8.97%, respectively.

### Net Returns By Plan - INSURANCE FUND (\$ in Millions)

Plan	Fair Value (\$ in Millions)	% of Total Fair Value	1 Year (%)		3 Years (%)		5 Years (%)		10 Years (%)		Inception (%)	
			KRS	Index	KRS	Index	KRS	Index	KRS	Index	KRS	Index
CERS Non-Hazardous	\$2,472	45.41%	5.73	5.91	9.49	9.34	5.99	5.93	9.01	9.45	7.43	7.74
CERS Hazardous	1,320	24.25%	5.81	5.91	9.56	9.34	6.06	5.93	9.05	9.45	7.44	7.74
KERS Non-Hazardous	926	17.01%	4.95	5.93	8.84	9.37	5.41	5.85	8.65	9.40	7.31	7.73
KERS Hazardous	526	9.68%	5.61	5.93	9.37	9.38	5.85	5.91	8.95	9.44	7.41	7.74
SPRS	199	3.65%	5.74	5.91	9.54	9.33	6.02	5.94	9.03	9.45	7.43	7.74
<b>KRS*</b>	<b>\$5,443</b>	<b>100.00%</b>	<b>5.67</b>	<b>5.89</b>	<b>9.43</b>	<b>9.27</b>	<b>5.92</b>	<b>6.14</b>	<b>8.97</b>	<b>9.52</b>	<b>7.41</b>	<b>7.76</b>

\*The KRS total is not a weighted average of each plan. Each plan has a different asset allocation which results in different returns compared to the overall pool.

### Net Returns By Allocation - INSURANCE FUND (\$ in Millions) Note: Fair values are adjusted for accruals and expenses

Structure	Inception	Fair Value (\$ in Millions)	% of Total	1 Year (%)		3 Years (%)		5 Years (%)		10 Years (%)		Inception To Date		External FEES (\$ in Millions)
				KRS	Index	KRS	Index	KRS	Index	KRS	Index	KRS	Index	
<b>Total Fund</b>	4/1/84	<b>\$5,443</b>	<b>100.00%</b>	<b>5.67</b>	<b>5.89</b>	<b>9.43</b>	<b>9.27</b>	<b>5.92</b>	<b>6.14</b>	<b>8.97</b>	<b>9.52</b>	<b>7.41</b>	<b>7.76</b>	<b>\$43.4</b>
<b>Total Public Equity</b>	4/1/84	<b>2,153</b>	<b>39.55%</b>	<b>4.02</b>	<b>4.62</b>	<b>11.69</b>	<b>11.75</b>	<b>6.24</b>	<b>5.97</b>	<b>10.15</b>	<b>10.29</b>	<b>8.59</b>	<b>8.39</b>	<b>5.4</b>
U.S. Equity	4/1/84	1,036	19.02%	7.74	8.98	13.34	14.02	9.62	10.19	13.98	14.60	9.67	9.59	2.3
Non-U.S. Equity <sup>1</sup>	4/1/84	1,117	20.53%	0.94	0.26	10.37	9.36	3.32	2.36	6.71	6.76	3.13	2.56	3.1
Core Fixed Income	7/1/00	844	15.50%	7.07	7.87	2.33	2.31	2.60	2.95	-	-	2.96	3.18	1.2
Specialty Credit	7/1/17	829	15.22%	6.69	5.72	-	-	-	-	-	-	6.02	4.60	8.0
Opportunistic	7/1/18	60	1.10%	10.62	3.97	-	-	-	-	-	-	10.62	3.77	0.5
Real Return	4/1/84	465	8.55%	4.91	4.91	4.44	3.06	2.14	1.70	-	-	3.61	2.88	3.3
Private Equity	7/1/84	568	10.43%	10.88	10.88	13.95	13.95	13.39	13.39	15.61	16.82	10.29	10.74	15.4
Real Estate	4/1/10	197	3.62%	8.97	6.55	10.18	7.01	9.61	9.18	9.36	7.73	9.20	6.03	6.9
Absolute Return	7/1/11	89	1.65%	-0.48	2.10	3.42	4.21	1.84	2.55	-	-	3.58	2.97	1.2
Cash Account <sup>2</sup>	7/1/02	\$238	4.38%	2.32	2.30	1.50	1.36	1.00	0.84	0.64	0.46	2.63	2.50	\$1.5

<sup>1</sup>Equities include trade commissions. <sup>2</sup>Cash accounts include custodian, consulting and miscellaneous investment expenses.

# INVESTMENTS REPORT

## Investment Advisors & Assets Under Management as of June 30, 2019 (\$ in Millions)

Advisor	Assets Under Management	Advisor	Assets Under Management	Advisor	Assets Under Management
American Century Investments	\$506	Levine Leichtman	\$83	Taurus Mining Finance	\$37
AMERRA Capital Management	98	Liquidalts H2O Force	24	Technology Crossover Ventures	1
Arcano Capital	28	Loomis, Sayles & Company	786	Tenaska Power	1
ARES Capital	34	Lord Abbett	784	Tortoise Capital	199
Arrowmark	178	LSV Asset Management	561	Tricadia Select	5
Baring Real Estate	54	Lubert-Adler	72	Triton Fund	27
Bay Hills Emerging Partners	260	Luxor Capital	2	VantagePoint Capital Partners	11
Black Diamond Capital Mgt.	58	Magnetar Capital	47	Vista Equity Partners	99
BlackRock ACWI Ex-US	1,496	Manulife Financial	666	Walton Street	37
Blackstone Capital Partners	97	Marathon Bluegrass	486	Warburg Pincus	20
Boston Company	1	Matlin Patterson	16	Waterfall Investment	290
BNY IG Credit Unit	700	Merit Capital Partners	1	Wayzata Investment Partners	12
BNY Mellon Accruals	-1	Mesa West	118	Westfield Capital	220
BSP Private Credit	83	MHR Institutional Advisors	1	White Oak	139
BTG Pactual	35	Mill Road Capital	10	<b>Total</b>	<b>\$18,189</b>
Cash Accounts	710	Myriad Opportunities	62	<i>Totals reflect external manager assets under management, therefore totals will differ from Total Fair Values.</i>	
Cerberus	130	New Mountain Partners	80		
CM Growth Capital Partners	8	NISA Investment Advisors	861		
Columbia Asset Management	451	Non-US Transition	2		
Columbia Capital	4	Northern Trust Global Investments	345		
Credit Suisse	12	Nuveen Real Asset	309		
Crestview Partners	82	Oak Hill Partners	17		
CVC Capital Partners	40	Oaktree Capital Management	-		
DAG Ventures	124	Oberland Capital	5		
DB Secondary Opportunities	74	Pacific Alternative Asset Management Company	-		
DCM	13	Patron Capital	19		
DivcoWest	5	Perimeter Park	7		
Essex Woodland	15	PIMCO	487		
Franklin Templeton	365	Pine River Capital	-		
Fundamental Partners	55	Prisma Capital	137		
Gotham Neutral Strategies	18	Prologis	116		
Governor's Lane	30	River Road Asset Management	230		
Green Equity Investors	147	Riverside Capital	46		
Greenfield Acquisition Partners	32	Rubenstein Capital	24		
GTCR Golder Rauner	-	S&P 500	1,645		
H&F Spock	7	Shenkman Capital	358		
H/2 Credit Partners	116	SRS Partners	12		
Harrison Street	118	Stockbridge	129		
Harvest Partners	58	Strategic Value Special Fund	17		
Hellman & Friedman	2	Sun Capital Partners	\$-		
H.I.G Capital	52				
Horsley Bridge International	83				
Institutional Venture Partners	7				
Internally Managed Accounts	1,355				
Invesco	-				
Kayne Anderson	85				
KCP Capital	8				
Keyhaven Capital Partners	30				
Lazard Asset Management	\$663				

## External Investment Expenses as of June 30, 2019 (\$ in Millions)

Expense	Fees Paid	Share of Assets
<b>Portfolio Management</b>		
Pension Funds	\$84	61.31%
Insurance Fund	39	28.51%
<b>Securities Lending</b>		
Pension Funds	8	5.89%
Insurance Fund	3	2.19%
<b>Custody</b>		
Pension Funds	1	0.89%
Insurance Fund	1	0.61%
<b>Consultant</b>		
Pension Funds	1	0.42%
Insurance Fund	1	0.18%
<b>Total Pension Funds</b>	<b>94</b>	<b>68.51%</b>
<b>Total Insurance Fund</b>	<b>44</b>	<b>31.49%</b>
<b>Total Expenses</b>	<b>\$138</b>	<b>100.00%</b>

## Schedule of Commissions Paid as of June 30, 2019 (\$ in Millions)

Assets	Total Shares	Commissions Paid	Price per Share
<b>U.S. Equities</b>	44	\$679	\$0.02
<b>Non U.S. Equities</b>	137	923	0.01
<b>Total</b>	<b>181</b>	<b>\$1,602</b>	<b>\$0.01</b>



# INVESTMENTS REPORT

## Fair Values By Plan - Pension as of June 30, 2019 (\$ in Millions)

Assets	CERS Non-Hazardous		CERS Hazardous		KERS Non-Hazardous		KERS Hazardous		SPRS		TOTAL KRS	
	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV
U.S. Equity	\$1,359	18.90%	\$454	18.79%	\$341	15.65%	\$128	18.72%	\$44	15.68%	\$2,326	18.25%
Non-U.S. Equity	1,502	20.90%	502	20.80%	367	16.83%	138	20.13%	48	17.32%	2,557	20.06%
Core Fixed Income	1,222	17.00%	402	16.65%	483	22.18%	114	16.59%	66	23.56%	2,287	17.94%
Specialty Credit	1,169	16.26%	387	16.02%	300	13.77%	110	16.08%	43	15.56%	2,009	15.76%
Opportunistic	67	0.94%	22	0.92%	20	0.90%	6	0.89%	3	0.87%	118	0.92%
Real Return	639	8.89%	218	9.02%	168	7.71%	58	8.44%	23	8.22%	1,106	8.68%
Private Equity	670	9.32%	229	9.49%	201	9.24%	62	9.00%	19	6.86%	1,181	9.27%
Real Estate	271	3.76%	87	3.59%	78	3.62%	25	3.74%	11	3.80%	472	3.71%
Absolute Return	125	1.73%	39	1.63%	40	1.84%	11	1.52%	4	1.51%	219	1.71%
Cash	165	2.30%	74	3.09%	180	8.26%	33	4.89%	19	6.62%	471	3.70%
<b>TOTAL PORTFOLIO</b>	<b>\$7,189</b>		<b>\$2,414</b>		<b>\$2,178</b>		<b>\$685</b>		<b>\$280</b>		<b>\$12,746</b>	

## Fair Values By Plan - Insurance as of June 30, 2019 (\$ in Millions)

Assets	CERS Non-Hazardous		CERS Hazardous		KERS Non-Hazardous		KERS Hazardous		SPRS		TOTAL KRS	
	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV	Fair Value (FV)	% of Total FV
U.S. Equity	\$466	18.84%	\$249	18.88%	\$185	19.93%	\$99	18.82%	\$37	18.74%	\$1,036	19.02%
Non-U.S. Equity	498	20.17%	269	20.36%	199	21.57%	111	21.04%	40	19.80%	1,117	20.53%
Core Fixed Income	384	15.54%	206	15.59%	138	14.86%	86	16.27%	30	15.41%	844	15.50%
Specialty Credit	366	14.79%	194	14.71%	155	16.77%	84	15.94%	30	14.96%	829	15.22%
Opportunistic	27	1.10%	15	1.12%	10	1.05%	6	1.15%	2	1.12%	60	1.10%
Real Return	216	8.75%	112	8.52%	76	8.19%	45	8.54%	16	7.85%	465	8.55%
Private Equity	284	11.46%	160	12.10%	48	5.16%	52	10.02%	24	12.13%	568	10.43%
Real Estate	90	3.66%	50	3.75%	28	3.07%	21	3.95%	8	4.00%	197	3.62%
Absolute Return	40	1.62%	22	1.70%	14	1.53%	9	1.78%	4	1.77%	89	1.65%
Cash	101	4.07%	43	3.27%	73	7.87%	13	2.49%	8	4.22%	238	4.38%
<b>TOTAL PORTFOLIO</b>	<b>\$2,472</b>		<b>\$1,320</b>		<b>\$926</b>		<b>\$526</b>		<b>\$199</b>		<b>\$5,443</b>	

# ACTUARIAL REPORT

*This is an overview of the Pension and Insurance Funds' actuarial status for the fiscal year ended June 30, 2019. For more detailed information, refer to the Actuarial Section of the 2019 CAFR published on the KRS website.*

## 2019 ACTUARIAL VALUATION RESULTS

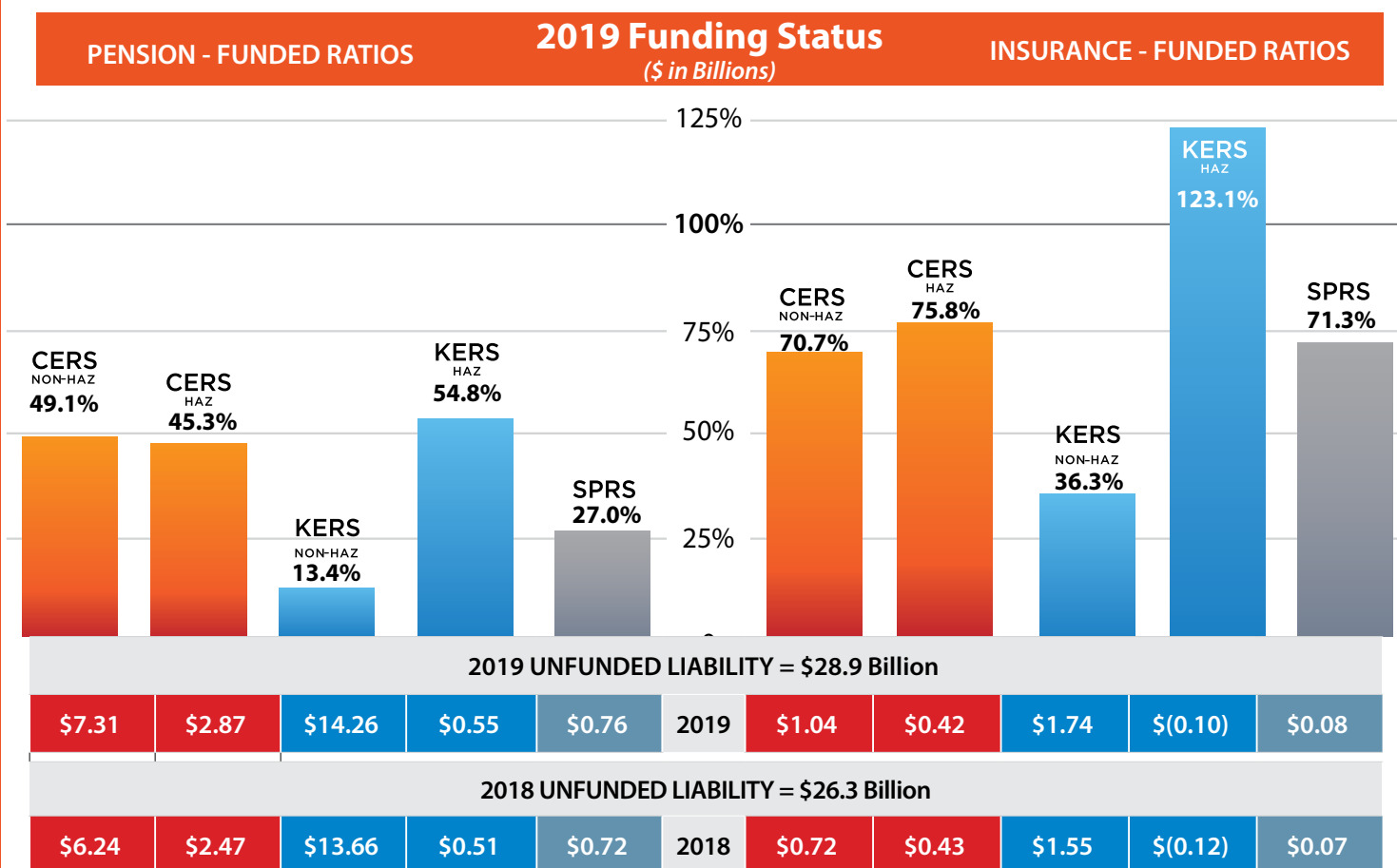
Each year the funding levels of the KRS Pension and Insurance plans are determined by the annual actuarial valuation based on assumptions set by the KRS Board for the fiscal year ending June 30. The fiscal year 2019 valuation results include new assumptions that were adopted by the Board in April 2019. In summary, total pension unfunded liabilities increased by \$2.15 billion which was caused by lower payroll, changes in actuarial assumptions, and investment returns that fell short of the assumed rate of return. Total insurance unfunded liabilities also increased by \$0.53 billion due to higher than expected Medicare insurance premiums and actuarial assumption changes. Total KRS unfunded liabilities increased by \$2.68 billion. KRS is in year 24 of a 30 year amortization period.

## PENSION PLANS

The actuarial unfunded liability for the Pension plans was \$25.75 billion, an increase over fiscal year 2018. The funded ratio for all plans, except KERS Non-Hazardous, decreased since the prior year. These decreases are mainly due to the updated actuarial assumptions adopted by the Board. Additionally, the full actuarially determined contribution rates for both CERS funds were not paid in fiscal year 2019 due to the contribution phase-in provisions from HB 362 passed during the 2018 legislative session, which further decreased the funded ratio for these funds.

## INSURANCE PLANS

The Insurance Plans' unfunded actuarial liability as of June 30, 2019, was \$3.18 billion compared to \$2.65 billion in the last fiscal year. The decreases for KERS Hazardous and CERS Non-Hazardous funds are mainly due to the updated actuarial assumptions adopted by the Board. The updated actuarial assumptions decreased the funded ratio for the other funds as well; however, other demographic experience offset this decrease so that the funded ratio stayed relatively stable for the KERS Non-Hazardous, CERS Hazardous, and SPRS funds. Total KRS Insurance funded ratio was 63.5%.



# ACTUARIAL REPORT

## Summary of Actuarial Valuation Results as of June 30, 2019 (\$ in Millions)

	CERS Non-Hazardous	CERS Hazardous	KERS Non-Hazardous	KERS Hazardous	SPRS	TOTAL KRS
<b>ACTUARIALLY DETERMINED CONTRIBUTION RATES</b>						
Pension Fund	26.21%	46.31%	80.98%	38.71%	136.12%	
Insurance Fund	5.78%	10.47%	12.03%	0.00%	20.85%	
Total Calculated Employer Contribution	31.99%	56.78%	93.01%	38.71%	156.97%	
<b>FUNDED STATUS AS OF VALUATION DATE</b>						
<b>PENSION FUND</b>						
Actuarial Liability	\$14,356	\$5,245	\$16,466	\$1,226	\$1,045	\$38,338
Actuarial Value of Assets	\$7,050	\$2,375	\$2,206	\$672	\$282	\$12,585
Unfunded Liability on Actuarial Value of Assets	\$7,307	\$2,870	\$14,260	\$555	\$763	\$25,755
Funding Ratio on Actuarial Value of Assets	49.1%	45.3%	13.4%	54.8%	27.0%	32.8%
Market Value of Assets	\$7,160	\$2,414	\$2,234	\$681	\$286	\$12,775
Unfunded Liability on Market Value of Assets	\$7,196	\$2,832	\$14,233	\$545	\$759	\$25,565
Funding Ratio on Market Value of Assets	49.9%	46.0%	13.6%	55.5%	27.4%	33.3%
<b>INSURANCE FUND</b>						
Actuarial Liability	\$3,568	\$1,733	\$2,733	\$427	\$277	\$8,738
Actuarial Value of Assets	\$2,523	\$1,314	\$991	\$525	\$197	\$5,550
Unfunded Liability on Actuarial Value of Assets	\$1,045	\$419	\$1,742	(\$99)	\$79	\$3,186
Funding Ratio on Actuarial Value of Assets	70.7%	75.8%	36.3%	123.1%	71.3%	63.5%
Market Value of Assets	\$2,570	\$1,341	\$995	\$534	\$201	\$5,641
Unfunded Liability on Market Value of Assets	\$998	\$392	\$1,738	(\$107)	\$76	\$3,097
Funding Ratio on Market Value of Assets	72.0%	77.4%	36.4%	125.2%	72.7%	64.6%

## EXPERIENCE STUDY AND ECONOMIC ASSUMPTIONS

Regular experience studies help ensure the underlying economic and demographic assumptions (such as expected payroll growth, investment returns, and retiree life expectancy) accurately reflect plan experience. Accuracy is important because these assumptions are used to calculate the annual employer contribution rate that will allow KRS to pay for current and future retiree benefits.

Experience studies are performed by KRS' independent actuary at least every five years to compare each plan's actual experience to what had been expected (the assumptions). The most recent Experience Study was completed in April 2019. Based on that study, retirement rates, termination rates, disability incidence rates, salary increase assumptions and mortality assumptions were adjusted or reaffirmed, resulting in a net increase in liabilities of \$1,801 million and \$489 million for the pension and insurance funds respectively.

## Economic Assumptions as of June 30, 2019

	CERS Non-Hazardous		CERS Hazardous		KERS Non-Hazardous		KERS Hazardous		SPRS	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Assumed Investment Return - Pension	6.25%	6.25%	6.25%	6.25%	5.25%	5.25%	6.25%	6.25%	5.25%	5.25%
Assumed Investment Return - Insurance	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
Inflation Factor	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%	2.30%
Payroll Growth	2.00%	2.00%	2.00%	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

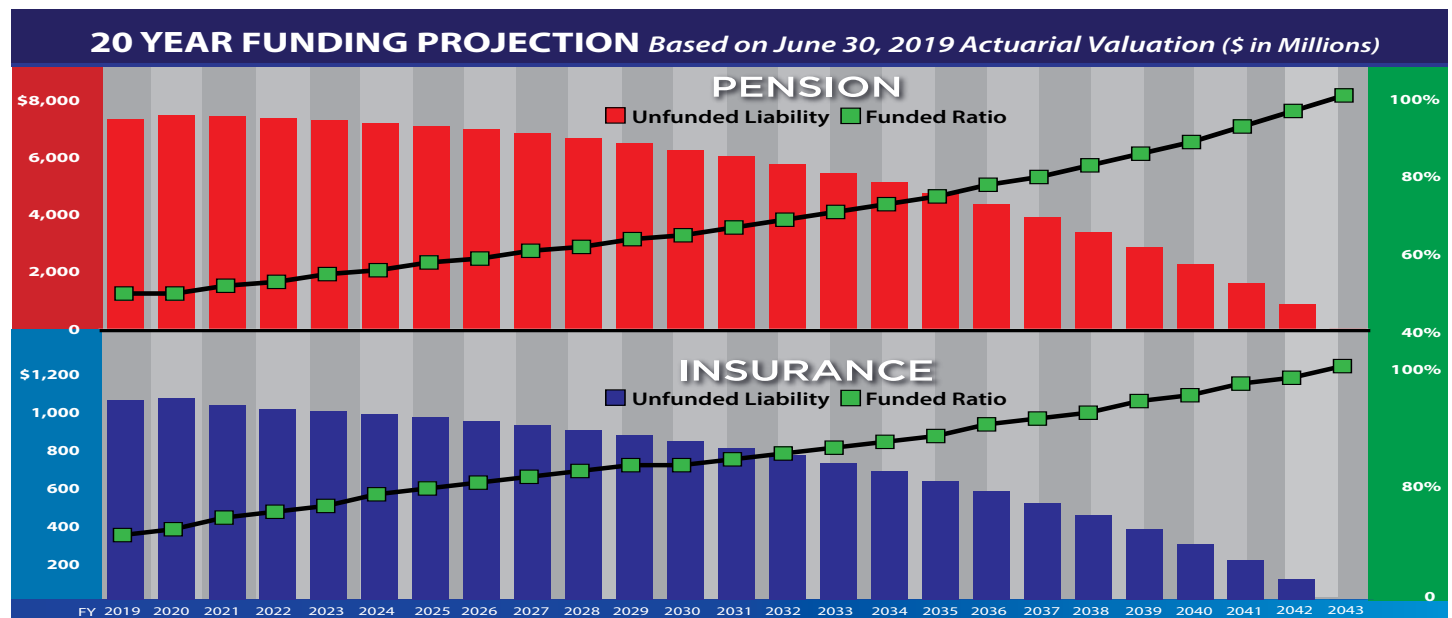


# COUNTY EMPLOYEES RETIREMENT SYSTEM

Established by the Kentucky General Assembly on July 1, 1958

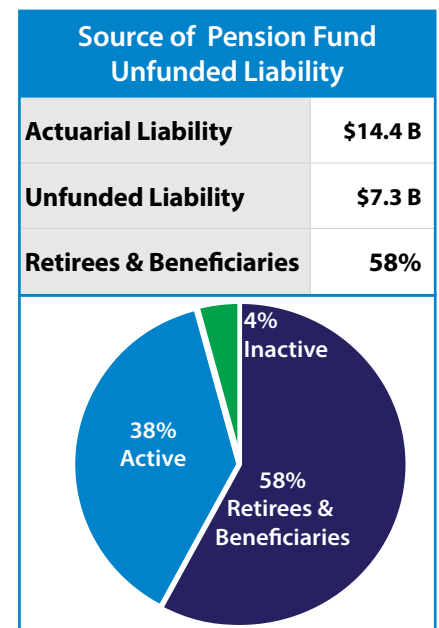
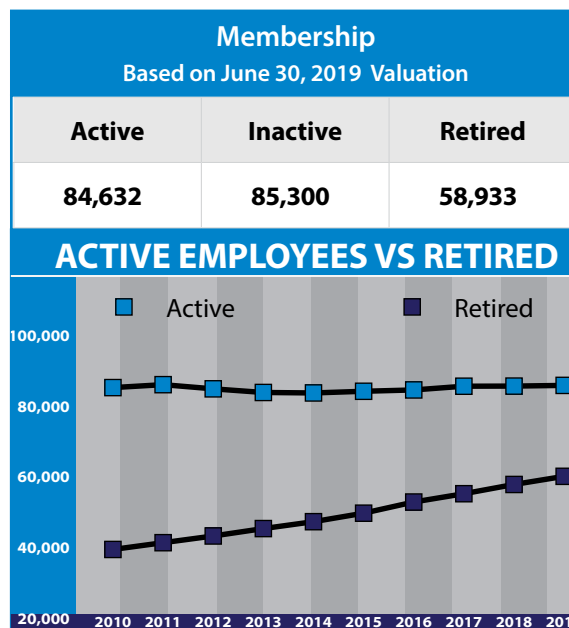
## KEY INFORMATION

- CERS Non-Hazardous is the largest plan in KRS with the highest membership and combined assets.
- Combined Pension and Insurance Fiduciary Net Plan Position was \$9.7 billion as of June 30, 2019, compared to \$9.4 billion in 2018.
- As of the June 30, 2019 Valuation, retirees and beneficiaries account for 58% of the unfunded liability.
- Active employees represent 37% of the plan's membership with an average annual salary of \$30,941. Active member payroll increased by 2.2% in fiscal year 2019 compared to 2018.
- There are more active employees paying into the plan than retirees drawing benefits (active to retired ratio of 1.44).
- Retirees represent 26% of the plan's membership with an average annual benefit of \$11,828.
- Using fiscal year 2019 valuation assumptions and member data, the Pension and Insurance plans have a funded ratio of 49% and 71% respectively.
- Based on current assumptions, the Pension and Insurance plans will be 100% funded by fiscal year 2043.



Employer Contribution Rates		
	Recommended	Actual
2010	16.16%	16.16%
2011	16.93%	16.93%
2012	18.96%	18.96%
2013	19.55%	19.55%
2014	18.89%	18.89%
2015	17.67%	17.67%
2016	17.06%	17.06%
2017	18.68%	18.68%
2018	19.18%	19.18%
2019	28.05%	21.48%*
2020	27.28%	24.06%*

\* HB 362, passed in the 2018 Legislative session, capped employer contribution rate increases at 12% annually until full contribution rate is achieved.



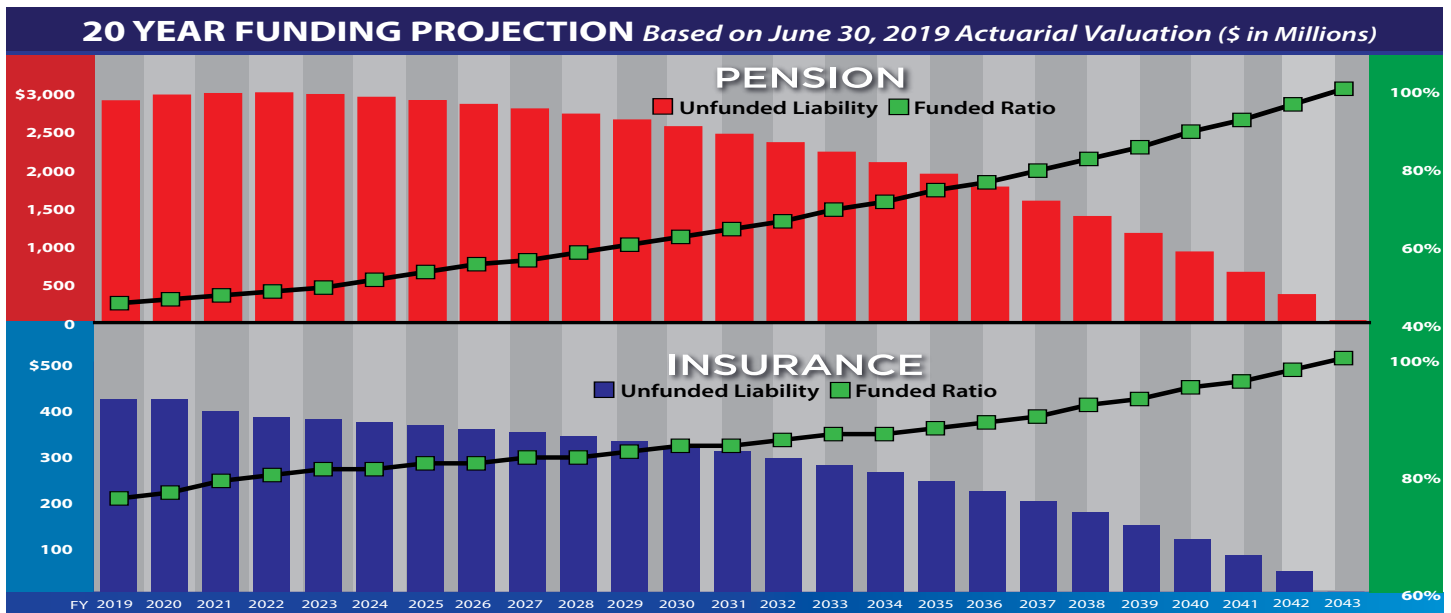
# COUNTY EMPLOYEES RETIREMENT SYSTEM



Established by the Kentucky General Assembly on July 1, 1958

## KEY INFORMATION

- Combined Pension and Insurance Fiduciary Net Plan Position was \$3.8 billion as of June 30, 2019 compared to \$3.6 billion in 2018.
- As of the June 30, 2019 Valuation, retirees and beneficiaries account for 64% of the unfunded liability.
- Active employees represent 47% of the plan's membership with an average annual salary of \$59,041. Active member payroll increased by 4.8% in fiscal year 2019 compared to 2018.
- There are more active employees paying into the plan than retirees drawing benefits (active to retired ratio of 1.18).
- Retirees represent 40% of the plan's membership with an average annual benefit of \$27,952.
- Using fiscal year 2019 valuation assumptions and member data, the Pension and Insurance plans have a funded ratio of 45% and 76% respectively.
- Based on current assumptions, the Pension and Insurance plans will be 100% funded by fiscal year 2043.



### Employer Contribution Rates

	Recommended	Actual
2010	32.97%	32.97%
2011	33.25%	33.25%
2012	35.76%	35.76%
2013	37.60%	37.60%
2014	35.70%	35.70%
2015	34.31%	34.31%
2016	32.95%	32.95%
2017	31.06%	31.06%
2018	31.55%	31.55%
2019	47.86%	35.34%*
2020	46.50%	39.58%*

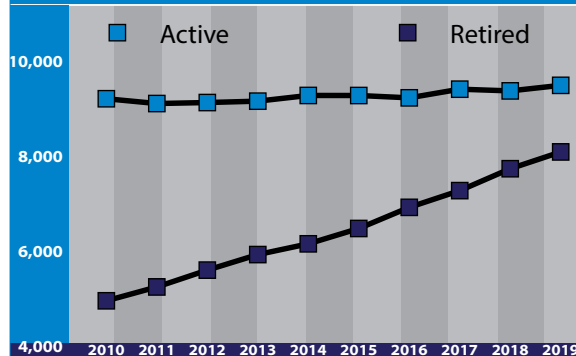
\* HB 362, passed in the 2018 Legislative session, capped employer contribution rate increases at 12% annually until full contribution rate is achieved.

### Membership

Based on June 30, 2019 Valuation

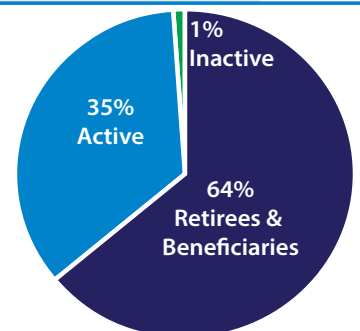
Active	Inactive	Retired
9,402	2,702	8,000

### ACTIVE EMPLOYEES VS RETIRED



### Source of Pension Fund Unfunded Liability

Actuarial Liability	\$5.2 B
Unfunded Liability	\$2.9 B
Retirees & Beneficiaries	64%



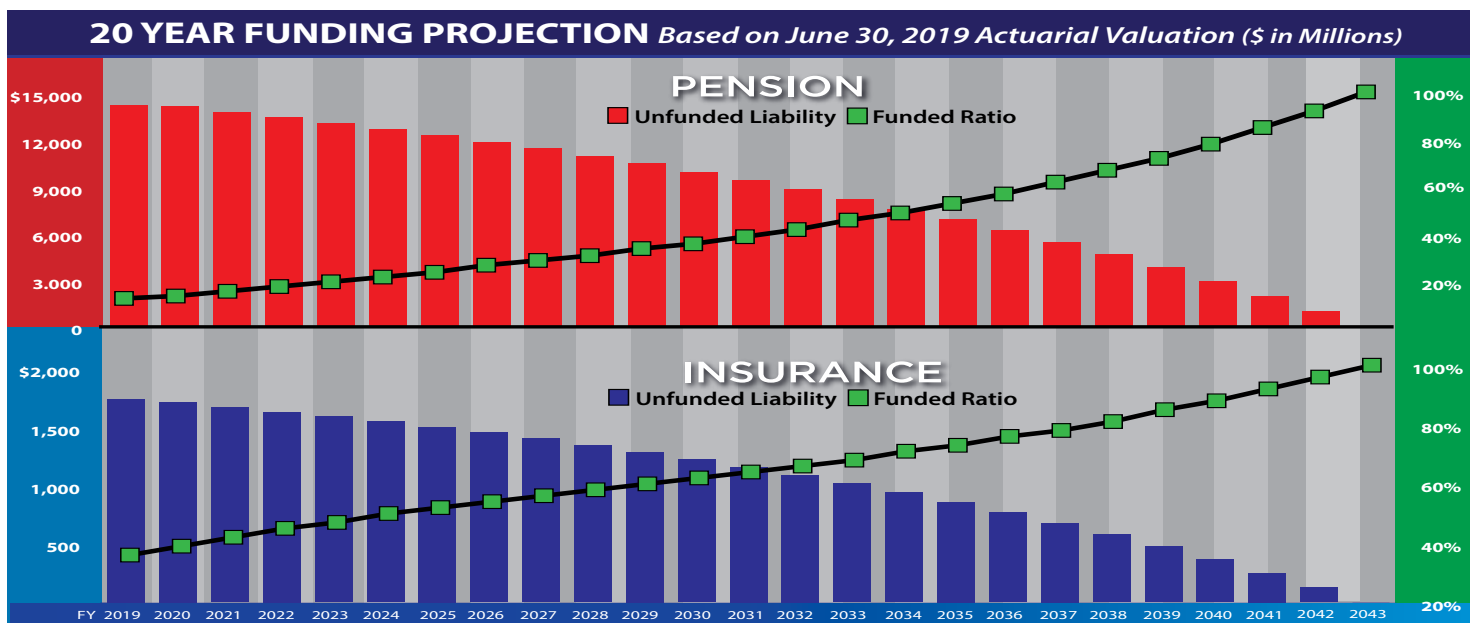


# KENTUCKY EMPLOYEES RETIREMENT SYSTEM

Established by the Kentucky General Assembly on July 1, 1956

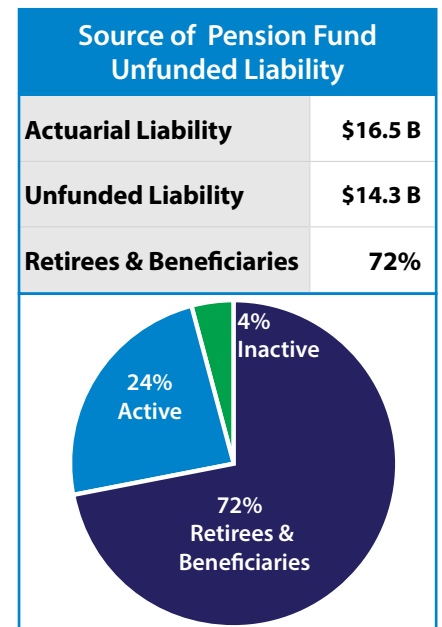
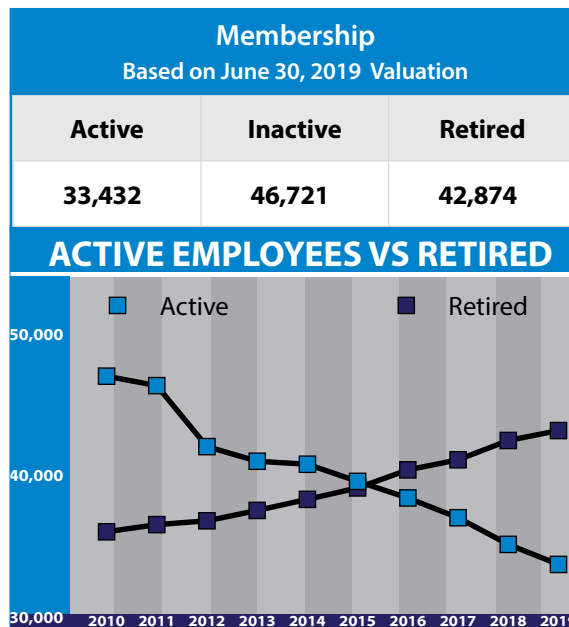
## KEY INFORMATION

- Combined Pension and Insurance Fiduciary Net Plan Position was \$3.2 billion as of June 30, 2019 compared to \$2.9 billion in 2018.
- As of the June 30, 2019 Valuation, retirees and beneficiaries account for 72% of the unfunded liability.
- Active employees represent 27% of the plan's membership with an average annual salary of \$42,665. Active member covered payroll continued the decade long trend of decline, decreasing by 2.3% in fiscal year 2019.
- There are more retirees drawing benefits than active employees paying into the plan (active to retired ratio of 0.78).
- Retirees represent 35% of the plan's membership with an average annual benefit of \$21,477.
- Using fiscal year 2019 valuation assumptions and member data, the Pension and Insurance plans have a funded ratio of 13% and 36% respectively.
- Based on current assumptions, the Pension and Insurance plans will be 100% funded by fiscal year 2043.



Employer Contribution Rates		
	Recommended	Actual
2010	31.29%	11.61%
2011	38.58%	16.98%
2012	40.71%	19.82%
2013	44.55%	23.61%
2014	45.28%	26.79%
2015	38.77%	38.77%
2016	38.77%	38.77%
2017	48.59%	48.59%
2018	49.47%	49.47%
2019	83.43%	83.43%*
2020	83.43%	83.43%*

\* Quasi agencies (i.e. health departments, regional mental healths, universities, and certain non-state agencies) maintained the 2018 contribution rate.





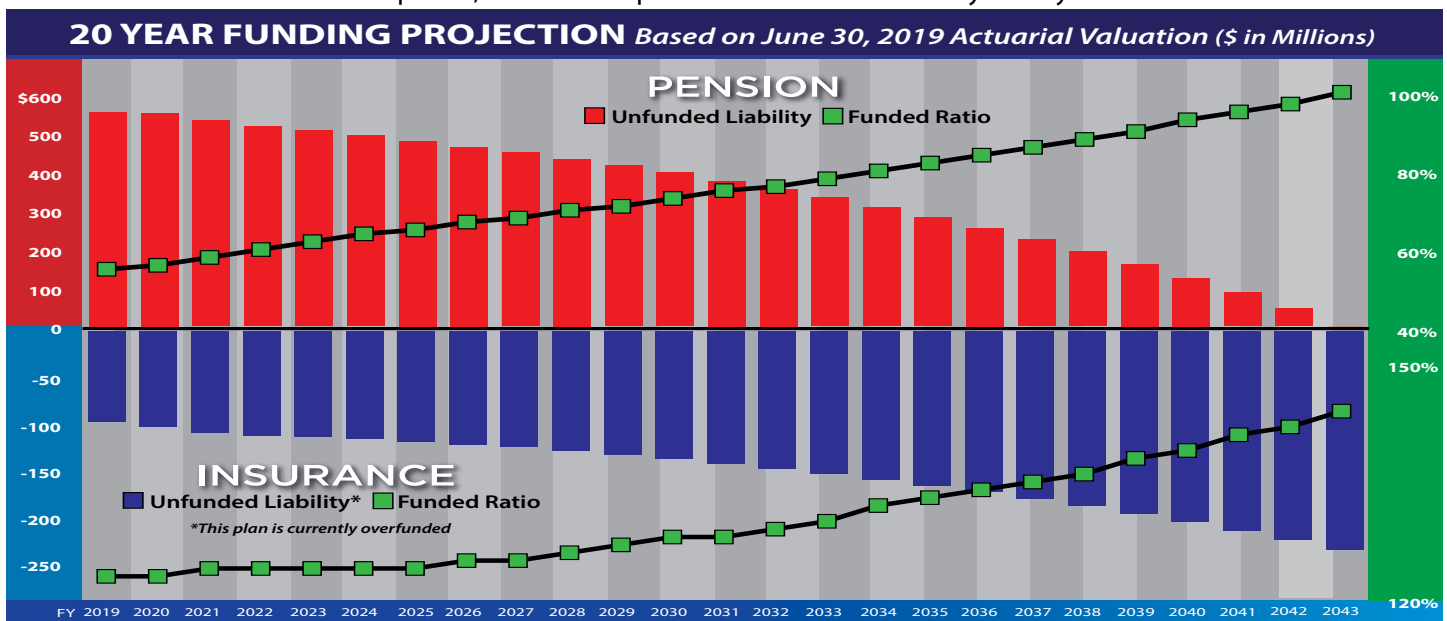
# KENTUCKY EMPLOYEES RETIREMENT SYSTEM



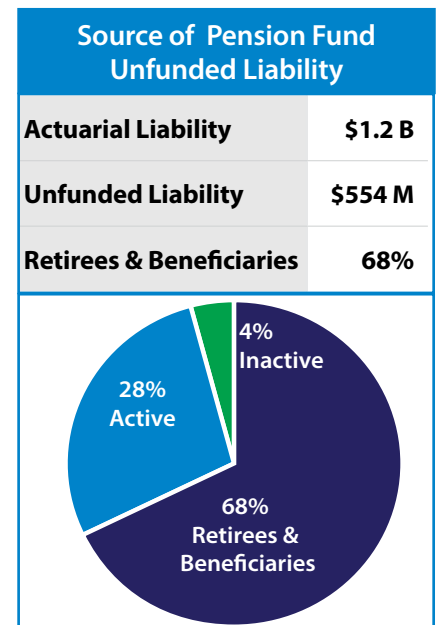
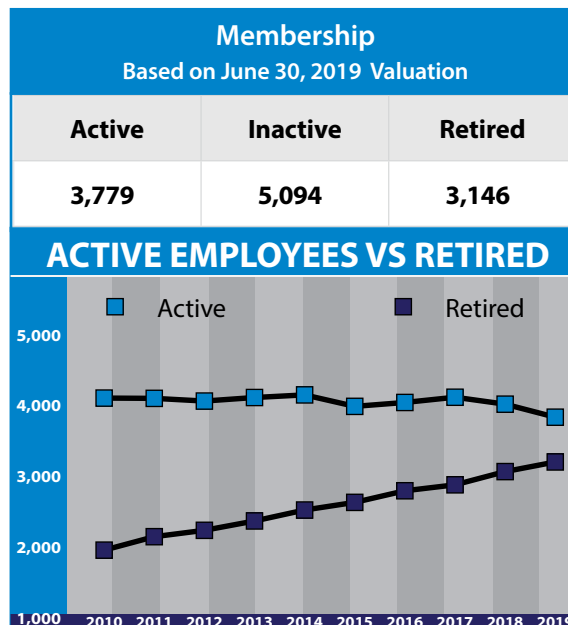
Established by the Kentucky General Assembly on July 1, 1956

## KEY INFORMATION

- Combined Pension and Insurance Fiduciary Net Plan Position was \$1.2 billion as of June 30, 2019, a slight improvement over 2018.
- As of the June 30, 2019 Valuation, retirees and beneficiaries account for 68% of the unfunded liability.
- Active employees represent 31% of the plan's membership with an average annual salary of \$40,606. Active member payroll decreased by 4.9% in fiscal year 2019 compared to 2018.
- There are more active employees paying into the plan than retirees drawing benefits (active to retired ratio of 1.2).
- Retirees represent 26% of the plan's membership with an average annual benefit of \$15,705.
- Using fiscal year 2019 valuation assumptions and member data, the Pension and Insurance plans have a funded ratio of 55% and 123% respectively. Unlike the other plans, the goal is to reduce the funded status of the Insurance plan over time with the employer contribution rate projected to be zero percent from 2020 forward.
- Based on current assumptions, the Pension plan will be 100% funded by fiscal year 2043.



Employer Contribution Rates		
	Recommended	Actual
2010	35.54%	24.69%
2011	34.37%	26.12%
2012	33.84%	28.98%
2013	35.89%	29.79%
2014	28.84%	32.21%
2015	26.34%	26.34%
2016	26.34%	26.34%
2017	23.82%	23.82%
2018	23.70%	23.70%
2019	36.85%	36.85%
2020	36.85%	36.85%



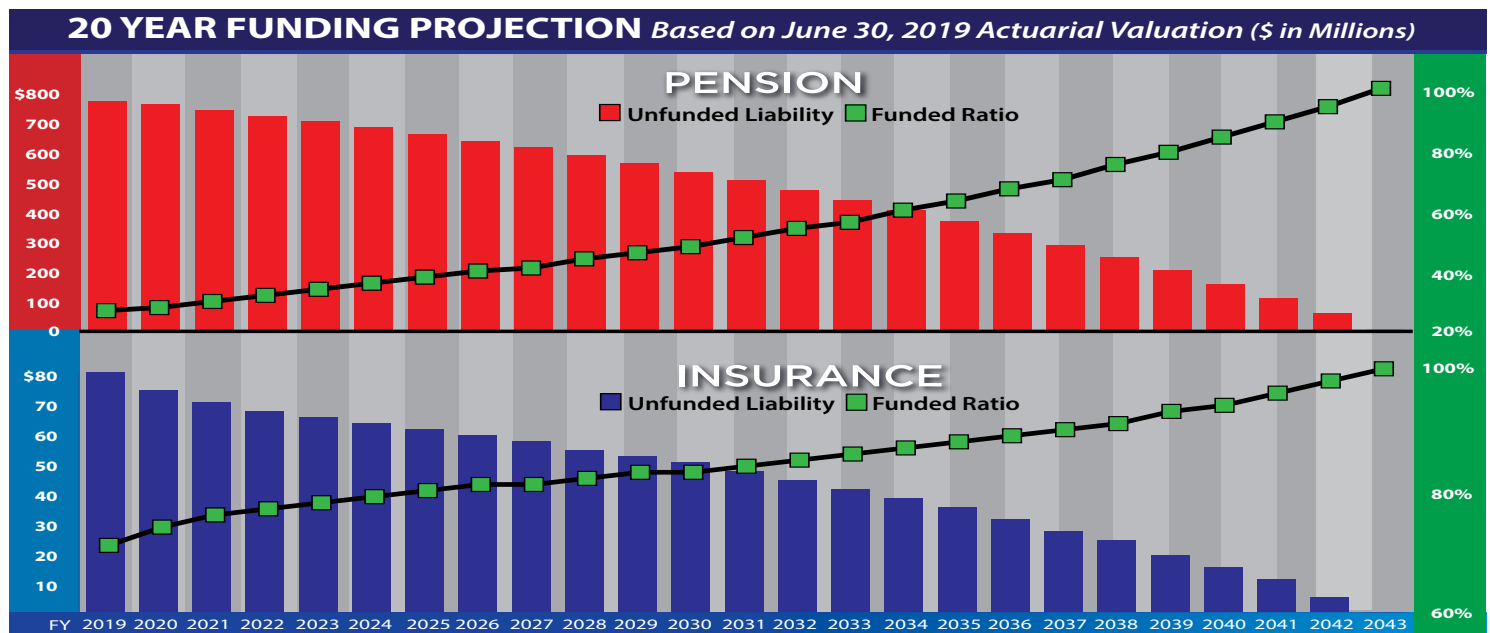


# STATE POLICE RETIREMENT SYSTEM

*Established by the Kentucky General Assembly on July 1, 1958*

## KEY INFORMATION

- Combined Pension and Insurance Fiduciary Net Plan Position was \$487 million as of June 30, 2019, compared to \$458 million in 2018.
- SPRS is a relatively small plan and has the highest employer contribution rate of all the KRS plans.
- As of the June 30, 2019 Valuation, retirees and beneficiaries account for 80% of the unfunded liability.
- Active employees represent 33% of the plan's membership with an average annual salary of \$54,079. Active member payroll decreased by 2.2% in fiscal year 2019 compared to 2018.
- There are more retirees drawing benefits than active employees paying into the plan (active to retired ratio of 0.61).
- Retirees represent 55% of the plan's membership with an average annual benefit of \$39,723.
- Using fiscal year 2019 valuation assumptions and member data, the Pension and Insurance plans have a funded ratio of 27% and 71% respectively.
- Based on current assumptions, the Pension and Insurance plans will be 100% funded by fiscal year 2043.



## Employer Contribution Rates

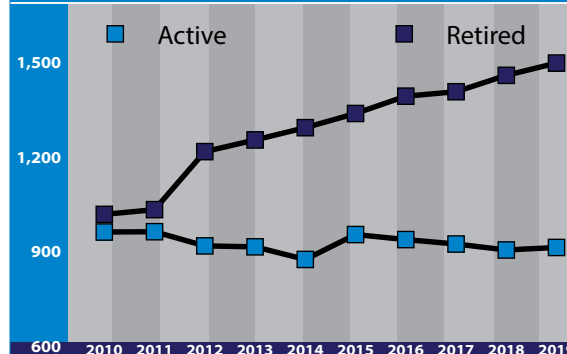
	Recommended	Actual
2010	61.87%	33.08%
2011	85.63%	45.54%
2012	94.63%	52.13%
2013	103.41%	63.67%
2014	96.52%	71.15%
2015	75.76%	75.76%
2016	75.76%	75.76%
2017	89.21%	89.21%
2018	91.24%	91.24%
2019	146.28%	146.28%
2020	146.28%	146.28%

## Membership

Based on June 30, 2019 Valuation

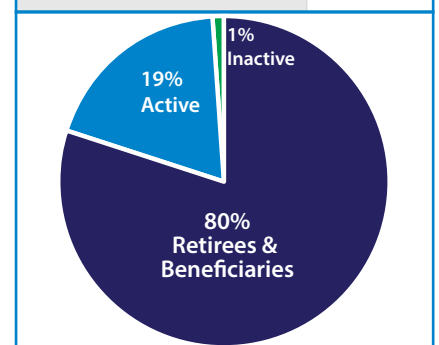
Active	Inactive	Retired
899	313	1,484

## ACTIVE EMPLOYEES VS RETIRED



## Source of Pension Fund Unfunded Liability

Actuarial Liability	\$1.0 B
Unfunded Liability	\$763 M
Retirees & Beneficiaries	80%



## ABOUT KRS

KRS is responsible for the investment of funds and administration of pension and health insurance benefits for over 386,000 active, inactive and retired state and local government employees, state police officers, and non-teaching staff of local school boards and regional universities.

Our actuaries, GRS Consulting, project that all of our pension and insurance plans will become fully funded in fiscal year 2043, provided KRS receives the full ADC each year. Those same projections indicate that all benefits will be secure going forward, supported by the positive fiscal impact of the Tier 3 Hybrid Cash Balance Plan.

## OUR SIX MANDATES

1. Strive for appropriate funding for all plans.
2. Provide members with efficient access to information and helpful counseling to meet their individual needs.
3. Manage the assets in accordance with each plan's needs while adding value to a passive portfolio.
4. Communicate effectively with all constituents, while ensuring appropriate transparency.
5. Maintain a work environment that promotes employee effectiveness, morale, safety, and retention.
6. Insist on a culture of continuous enhancement to everything we do.

## FISCAL YEAR 2019 KEY STATS

**Retiree Healthcare  
Covered Lives:**  
96,391

**Member Office Visits:**  
10,322

**New Retirements:**  
7,289

**Benefit Estimates:**  
13,266

**Service Purchase Estimates:**  
6,527

**Disability Applications:**  
588

**Call Center Inbound Calls:**  
286,681

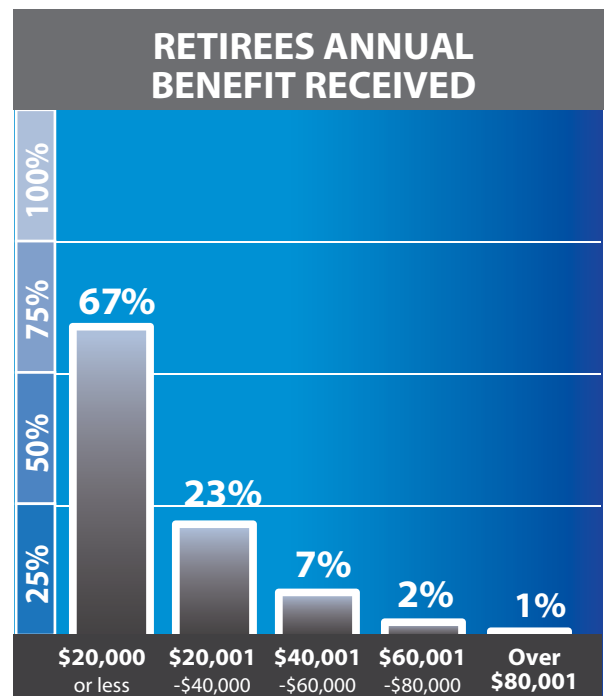
**Refunds Processed:**  
4,918

**Account Audits:**  
18,506

**Facebook Likes:**  
15,440

**Website Pageviews:**  
4,770,340

	ACTIVE MEMBERSHIP		RETIRED MEMBERSHIP	
	Average Age	Average Annual Salary	Average Age	Average Annual Payment
<b>CERS Non-Hazardous</b>	47.7	\$30,941	70.6	\$11,828
<b>CERS Hazardous</b>	38.6	\$59,041	62.0	\$27,952
<b>KERS Non-Hazardous</b>	45.4	\$42,665	69.4	\$21,477
<b>KERS Hazardous</b>	39.8	\$40,606	64.8	\$15,705
<b>SPRS</b>	36.7	\$54,079	63.0	\$39,723





**Kentucky Retirement Systems**

1260 Louisville Rd, Frankfort, KY 40601

**Hours of Operation:**

8:00 AM - 4:30 PM (EST) Monday-Friday

(502) 696-8800 or (800) 928-4646

Fax: (502) 696-8822



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