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**Kansas Public Employees
Retirement System**

Valuation Report as of December 31, 2022



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July 10, 2023

Board of Trustees
Kansas Public Employees Retirement System
611 S. Kansas Ave., Suite 100
Topeka, KS 66603

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Kansas Public Employees Retirement System (KPERS) as of December 31, 2022 for the purpose of determining contribution rates for FY 2026 for the State and Schools (July 1, 2025 to June 30, 2026) and FY 2025 for Local employers (calendar year 2025). The major findings of the valuation are contained in this report, which reflects the plan provisions in place on December 31, 2022 and any legislative changes from the 2023 Session. Two bills impacting KPERS were passed by the 2023 Legislature and enacted into law, but only one had a financial impact on the valuation results. House Bill 2196 (HB 2196) expands the Deferred Retirement Option Plan (DROP) in KP&F to all KP&F employers as of April 27, 2023. Prior to this change, only members employed by the Kansas Highway Patrol and Kansas Bureau of Investigation were eligible. HB 2196 also made the Kansas Department of Wildlife and Parks (KDWP) an affiliated KP&F employer and made certain law enforcement positions at the KDWP eligible for KP&F participation. The affiliation is for future service only, so it does not affect the results of the current valuation.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different, and our calculations may need to be revised.

We certify that all costs, liabilities, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the System. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted the set of assumptions in Appendix C.



Board of Trustees
July 10, 2023
Page 2

In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

The actuarial computations presented in this report are for the purpose of determining the actuarial recommended and statutory funding amounts for the System. Actuarial computations for purposes of fulfilling financial accounting requirements for the System under Governmental Accounting Standard Number 67 and computations for financial reporting by employers under Governmental Accounting Standard Number 68 are provided in separate reports. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. The consultants who worked on this assignment are pension actuaries. Cavanaugh Macdonald Consulting, LLC's advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer questions or provide additional information, if needed.

We would like to express our appreciation to KPERS Executive Director, Alan Conroy, and to members of his staff, who gave substantial assistance in supplying the data on which this report is based.

We respectfully submit the following report and look forward to discussing it with you.

Sincerely,

A handwritten signature in blue ink that reads 'Patrice Beckham'.

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Brent A. Banister'.

Brent A. Banister Ph.D., FSA, EA, MAAA, FCA
Chief Actuary

A handwritten signature in blue ink that reads 'Bryan K. Hoge'.

Bryan K. Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



SECTION 1 – BOARD SUMMARY

OVERVIEW

The Kansas Public Employees Retirement System is an umbrella organization which administers the following three statewide pension groups: the Kansas Public Employees Retirement System (KPERS), the Kansas Police and Firemen’s Retirement System (KP&F) and the Kansas Retirement System for Judges (Judges). This report presents the results of the December 31, 2022 actuarial valuations for each of the groups.

The primary purposes of performing actuarial valuations are to:

- determine the actuarial employer contribution rates required to fund each group,
- determine the statutory employer contribution rates for each group,
- disclose asset and liability measures as of the valuation date,
- evaluate and disclose key risks to funding the System pursuant to Actuarial Standard of Practice Number 51,
- compare the actual experience since the last valuation date to that expected, and
- analyze and report on trends in contributions, assets, and liabilities over the past several years.

Legislation Since the Last Valuation

There were two bills passed by the 2023 Legislature and enacted into law that impact KPERS including:

- (1) House Bill 2196 (HB 2196) expands the Deferred Retirement Option Plan (DROP) in KP&F to all employers as of April 27, 2023. Prior to this change, only members employed by the Kansas Highway Patrol and Kansas Bureau of Investigation were eligible (about 6% of the KP&F active population). The ultimate cost impact of extending the DROP to all KP&F members is heavily dependent on the changes that occur in actual retirement patterns as a result of the DROP. As a result of HB 2196, the unfunded actuarial liability for KP&F increased by \$25.5 million and the actuarial contribution rate increased by 0.44% of pay.

Under HB 2196, Kansas Department of Wildlife and Parks (KDWP) became an affiliated KP&F employer and certain law enforcement positions at the KDWP are eligible for KP&F participation as of July 1, 2023. The affiliation with KP&F is for future service only, so there is no increase in the unfunded actuarial liability and the results of the current valuation were not impacted.

- (2) House Bill 2100 (HB 2100) defines environmental, social and governance factors and establishes limits on the consideration of those factors when entering into contracts (including investment contracts) and when making proxy votes on behalf of the System. This change had no impact on the December 31, 2022 valuation because it is not expected to materially affect the asset allocation.



SECTION 1 – BOARD SUMMARY

Factors Impacting the December 31, 2022 Valuation

The valuation results provide a “snapshot” view of the System’s financial condition on December 31, 2022. The net change in the unfunded actuarial liability for the total System was a decrease of \$260 million due to multiple factors, the largest of which was the additional State contributions made to the School group during calendar year 2022. These additional contributions lowered the System’s unfunded actuarial liability by \$901 million. This decrease was partially offset by actuarial losses on both the System’s liability experience (\$473 million) and asset experience (\$340 million). The largest contributor to the System’s unfavorable liability experience was salary increases that were larger than expected based on the actuarial assumptions.

Other factors impacting the valuation results include:

- The net rate of return on the market value of assets for calendar year 2022 was -9.8%, as reported by KPERS. However, due to the use of an asset smoothing method, the net rate of return on the actuarial value of assets for 2022 was +5.6%. As a result of the unfavorable investment experience during calendar year 2022 and the scheduled recognition of past investment experience, there was an actuarial loss of \$340 million. In addition, the net deferred investment gain of \$2.1 billion last year is now a net deferred investment loss of \$1.9 billion in the current valuation (about 8% of market value).
- Liability experience for calendar year 2022 was a net liability loss (higher actuarial liability than expected) for all of the groups. In aggregate, the valuation results reflect a net loss of \$473 million for the year, about 1.33% of the total actuarial liability. The largest component of the liability loss was due to higher salaries than expected based on actuarial assumptions.
- KPERS 3 (Cash Balance members) refers to non-correction members who either began their participation or were rehired on or after January 1, 2015. KPERS 3 members receive guaranteed interest credits of 4.0% on their account balances, but additional interest credits (called dividends) may be granted depending on actual investment returns. Based on the investment returns over the past five years, there was no dividend for 2022. Because the assumption for dividend payments in the valuation is 2.00% per year, there was a small actuarial gain on liabilities from no dividend being granted.
- The statutory contribution rate was first equal to the actuarial contribution rate in the December 31, 2017 valuation which set the employer contribution rate for FY 2021 (July 1, 2020 to June 30, 2021). Therefore, the full actuarial contribution rate was paid for the entire calendar year in 2022 and there was no contribution shortfall. As a result, the full UAL payment was received during calendar year 2022 and the unfunded actuarial liability decreased, as scheduled, by \$168 million.

A detailed analysis of the components of the change in the unfunded actuarial liability from December 31, 2021 to December 31, 2022 can be found on page 9.



SECTION 1 – BOARD SUMMARY

Summary Results

In KPERS, the State, School and Local employer contribution rates certified by the Board may not increase over the prior year by more than the statutory cap. The statutory cap has changed over time, but the current cap is 1.20%. Also, while separate valuations are performed for the State and School groups, the statutory contribution rate for the two groups is determined using their combined valuation results. Due to the statutory cap, the employer contribution rate was below the actuarial contribution rate for many years. However, the statutory State/School employer contribution rate has been equal to the actuarial required contribution rate since the December 31, 2017 valuation (FY 2021 contribution rates). By statute, if the actuarial required contribution (ARC) for the State alone is less than the statutory contribution rate when the two groups are combined (as it is in this valuation), the excess of the statutory contribution rate over the actuarial required contribution rate for the State alone is allocated to the School to improve the funding of that group.

A summary of actuarial and statutory employer contribution rates for the Retirement System (excluding the statutory contribution for the Death and Disability Program) for this valuation and the prior valuation follows. The December 31, 2022 actuarial valuation is used to set the employer contribution rate for FY 2026 for the State/School, State KP&F and Judges groups and calendar year 2025 for the Local and Local KP&F groups.

System	December 31, 2022 Valuation		
	Actuarial	Statutory	Difference
State ¹	11.18%	11.56%	(0.38%)
School ¹	11.66%	11.56%	0.10%
State/School ¹	11.56%	11.56%	0.00%
Local ¹	9.60%	9.60%	0.00%
Police & Fire - Uniform Rates ²	24.61%	24.61%	0.00%
Judges	23.06%	23.06%	0.00%

System	December 31, 2021 Valuation		
	Actuarial	Statutory	Difference
State ¹	10.66%	11.42%	(0.76%)
School ¹	11.60%	11.42%	0.18%
State/School ¹	11.42%	11.42%	0.00%
Local ¹	9.26%	9.26%	0.00%
Police & Fire - Uniform Rates ²	23.10%	23.10%	0.00%
Judges	21.35%	21.35%	0.00%

¹ By statute, rates are allowed to increase by a maximum of 1.20%, plus the cost of any benefit enhancements. The December 31, 2022 valuation sets the employer contribution rate for FY 2026 for the State and School group and calendar year 2025 for the Local group.

² For KP&F, the statutory contribution rate is equal to the "Uniform" rate. The rate shown is for both State and Local employers. The uniform rate does not include the payment required to amortize the unfunded past service liability determined separately for each employer (Table 16).



SECTION 1 – BOARD SUMMARY

Based on the results of this valuation, the statutory contribution rates for the State, State/School and Local groups continue to be at the actuarial required contribution rate. This is a key factor in reducing the unfunded actuarial liability and improving the funded ratio of each of the groups in the future.

Legislation passed in the 2017 session provided for the payment of the delayed contributions for the School group from FY 2017 and FY 2019 in level annual installments over 20-year periods commencing in FY 2018 and FY 2020, respectively. These installment payments were determined as an additional contribution rate for the School group and were added to the regular statutory contribution rate determined for the State/School group to determine the employer contribution rate for School employers. SB 421, passed in the 2022 legislative session, provided for additional contributions which included payment of the outstanding balance of the delayed contributions from FY 2017 and FY 2019 (payment received May 19, 2022). Consequently, there is no additional contribution rate for the School group, beginning with FY 2023. The regular statutory State/School contribution rate will apply in all future years.

EXPERIENCE - ALL SYSTEMS COMBINED

December 31, 2021 – December 31, 2022

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is December 31, 2022. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process leads to a method of determining the contributions needed by members and employers in the future to balance the System assets and liabilities.

Changes in both the System's membership, assets and liabilities impacted the change in the actuarial contribution rates between the December 31, 2021 and December 31, 2022 actuarial valuations. On the following pages, each component is examined.



SECTION 1 – BOARD SUMMARY

MEMBERSHIP

The following table contains a summary of the changes in the active membership between the December 31, 2021 and December 31, 2022 actuarial valuations.

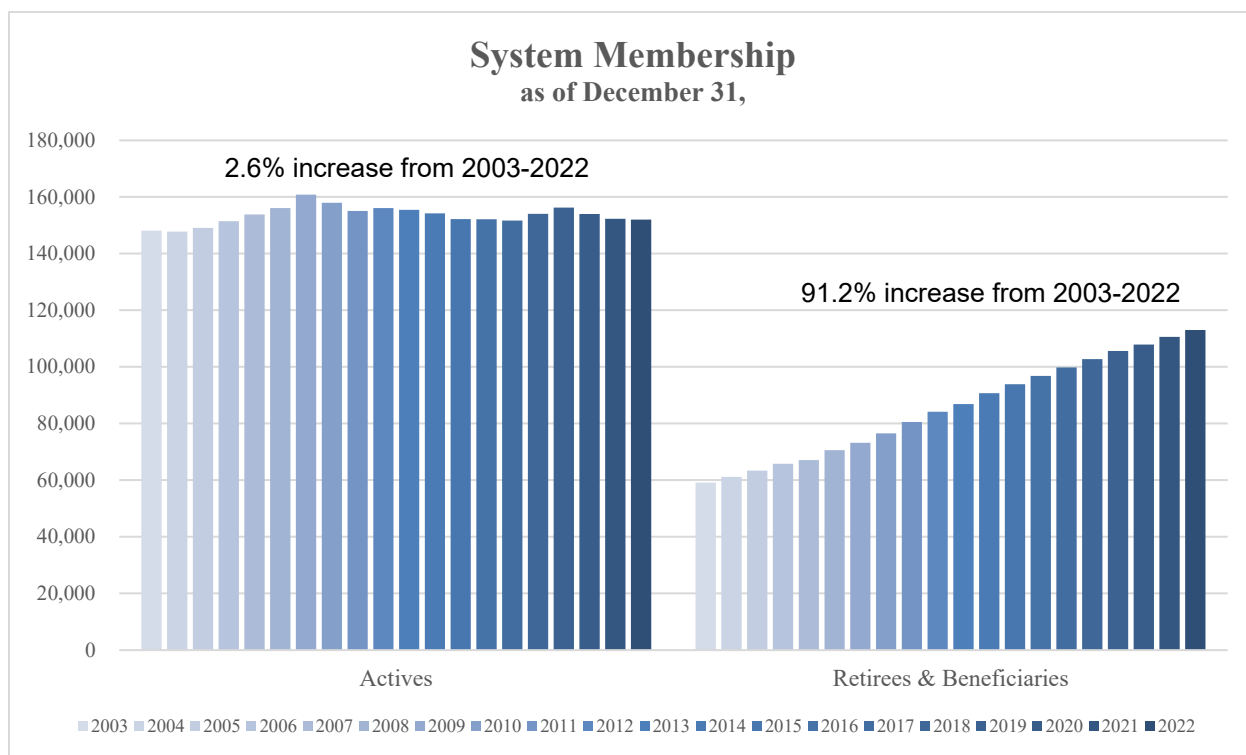
	State	School	Local	KP&F	Judges	Total
12/31/2021 (Starting count)	19,917	87,898	36,436	7,779	258	152,288
New actives	2,754	11,501	5,719	906	29	20,909
Nonvested Terminations	(982)	(5,051)	(2,534)	(438)	0	(9,005)
Elected Refund	(510)	(1,217)	(581)	(114)	0	(2,422)
Vested Terminations	<u>(608)</u>	<u>(3,230)</u>	<u>(1,535)</u>	<u>(52)</u>	<u>0</u>	<u>(5,425)</u>
Total Withdrawals	(2,100)	(9,498)	(4,650)	(604)	0	(16,852)
Deaths	(30)	(69)	(46)	(3)	0	(148)
Disabilities	(30)	(45)	(20)	(19)	0	(114)
Retirements	(637)	(2,328)	(922)	(192)	(20)	(4,099)
Other/Transfer	<u>119</u>	<u>(252)</u>	<u>132</u>	<u>1</u>	<u>0</u>	<u>0</u>
Change from prior year	76	(691)	213	89	9	(304)
12/31/2022 (Ending count)	19,993	87,207	36,649	7,868	267	151,984
Change from prior year (%)	0.4%	(0.8%)	0.6%	1.1%	3.5%	(0.2%)

As can be seen from the table above, in total, KPERS experienced a net decrease in the total number of active members, despite small increases in four of the five groups. The size of the School group has a significant impact on the total System membership statistics. As the following graph illustrates, active membership growth has been relatively stagnant overall for the past 10 to 15 years, with the active membership peaking in the December 31, 2009 valuation. While this pattern of low (or at times negative) active member growth has not been unusual in the public sector, a declining active membership has an adverse impact on the actuarial contribution rate. Usually, fewer active members result in total active member payroll that does not increase as expected by the payroll growth assumption (3% per year). When this occurs, contribution dollars into the System for that plan year are lower than anticipated so the unfunded actuarial liability does not decrease as scheduled. In addition, the unfunded actuarial liability contribution rate increases because the dollar amount of the amortization payment is divided by a smaller amount of payroll.

The following graph shows the number of active members and retirees and beneficiaries in the last 20 valuations. The number of retirees and beneficiaries has grown significantly more than active members over this period.

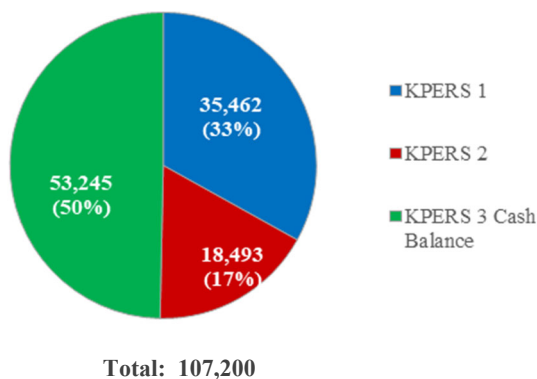


SECTION 1 – BOARD SUMMARY

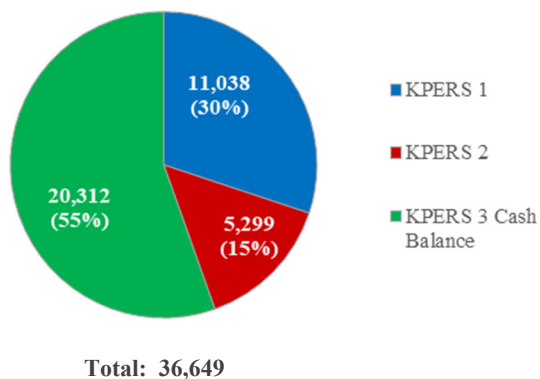


KPERS currently has three different benefit structures. The most recent tier, KPERS 3 (Cash Balance members), covers non-corrections members who either began their participation or were rehired on or after January 1, 2015. KPERS 2 includes members who either began their participation or were rehired on or after July 1, 2009, but before January 1, 2015. Of the 143,849 total active KPERS members, 23,792 (about 17%) are KPERS 2 members and 73,557 (about 51%) are KPERS 3 members as of the valuation date. The remaining actives (about 32%) are KPERS 1 members, who became participants prior to July 1, 2009. Beginning with the December 31, 2020 valuation, KPERS 3 members have represented the largest group of active members. The split of KPERS members in the State/School group and Local group, by benefit tier, is shown in the following charts.

State/School Active Membership



Local Active Membership





SECTION 1 – BOARD SUMMARY

Because KPERS 3 is still a relatively new group, the members are younger and have lower service. Therefore, the liability for KPERS 3 members is relatively small so the valuation results are more significantly affected by what happens to members of KPERS 1 and KPERS 2. As time passes and more active members are in KPERS 3, the cash balance benefit structure will have an increasing impact on the overall valuation results. One aspect of this change is that total valuation results are expected to have less volatility since KPERS 3 has certain risk sharing features built into the interest crediting rate on account balances. For example, lower actual investment returns will translate into lower dividends, smaller account balances and, therefore, smaller benefit amounts, mitigating the growth in the KPERS 3 actuarial liability.

ASSETS

As of December 31, 2022, the System had total funds of \$24.5 billion on a market value basis, excluding assets held for the Group Insurance and Optional Life reserves. This was a decrease of \$2.4 billion from the December 31, 2021 fund balance of \$26.9 billion.

Due to the volatility in the market value of assets, it is not used directly in the calculation of contribution rates. An asset valuation method is used to smooth the effect of market fluctuations. The smoothing method calculates the difference between the actual dollar amount of investment return and the expected return (using the assumed rate of return) on the market value of assets each year. The dollar amount of the difference is recognized equally over a five-year period (20% per year). See Tables 3A through 3F and 4 for the detailed development of the actuarial value of assets as of December 31, 2022 for each group.

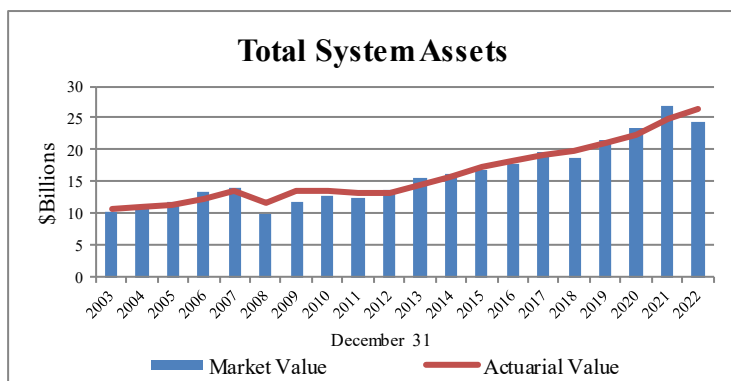
The components of the change in the total market value and actuarial value of assets for the Retirement System (in millions) are set forth in the following table.

	Market Value \$ (millions)	Actuarial Value \$ (millions)
Assets, December 31, 2021	\$26,892	\$24,804
- Employer and Member Statutory Contributions	1,548	1,548
- Additional Employer Contributions	871	871
- Benefit Payments	(2,160)	(2,160)
- Administrative Expenses	(19)	(19)
- Investment Income, Net of Investment Expenses	(2,616)	1,406
Assets, December 31, 2022	\$24,516	\$26,450
Net Rate of Return	-9.8%	+5.6%

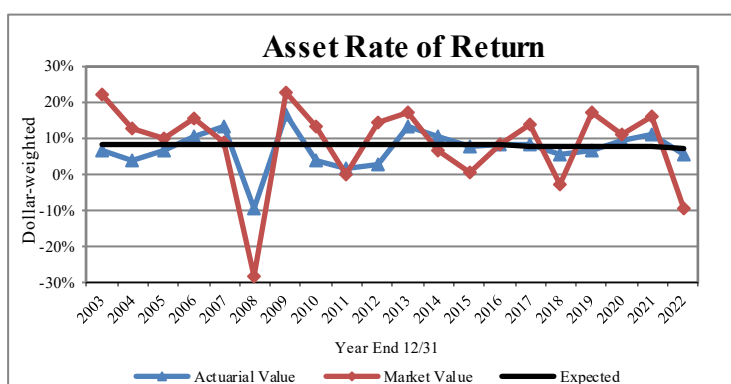
Due to the use of an asset smoothing method, there is a net deferred investment loss of \$1.934 billion that has not yet been recognized, i.e., the actuarial value of assets is greater than the market value. This deferred investment loss will be recognized in the actuarial value of assets over the next four years but may be impacted by future investment experience.



SECTION 1 – BOARD SUMMARY



The actuarial value of assets has been both above and below the market value during the period, which is to be expected when using an asset smoothing method.



The net rate of return on the actuarial (smoothed) value of assets has been less volatile than the market value return. The deferred investment loss in this valuation will be reflected in the actuarial value of assets in the next few years, absent future favorable investment experience.

LIABILITIES

The actuarial liability is that portion of the present value of future benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and asset values at the same date is referred to as the unfunded actuarial liability. The unfunded actuarial liability will be reduced if employer contributions exceed the employer normal cost for the year, after allowing for interest on the previous balance of the unfunded actuarial liability. Benefit improvements, experience gains and losses, and changes in actuarial assumptions and methods will also impact the total actuarial liability and the unfunded portion thereof.

The unfunded actuarial liability by group is summarized below (in millions):

	State	School	Local	KP&F	Judges	Total*
Actuarial Liability	\$5,249	\$19,041	\$7,019	\$4,480	\$227	\$36,016
Actuarial Value of Assets	<u>4,022</u>	<u>14,007</u>	<u>5,067</u>	<u>3,143</u>	<u>210</u>	<u>26,450</u>
Unfunded Actuarial Liability*	\$1,226	\$5,034	\$1,952	\$1,337	\$16	\$9,567
Funded Ratio	76.6%	73.6%	72.2%	70.2%	92.8%	73.4%

* May not add due to rounding.



SECTION 1 – BOARD SUMMARY

See Table 7 for the detailed development of the actuarial liability by group. The calculation of the unfunded actuarial liability (UAL) by group is shown in Table 11.

With the material reduction in the investment return assumption in the December 31, 2021 valuation, the Board elected to reset the unfunded actuarial liability and amortize the entire amount over a new amortization period. For the State/School and Local groups, the amortization period was set to 17 years. For KP&F, the amortization period was set to 22 years. All groups utilize the level-percent-of-payroll methodology to determine payment amounts, other than the Judges who use level dollar payments over a 20-year period for the initial base. New amortization bases, established in each valuation after 2021, due to actuarial gains/losses are amortized over a closed period of 20 years. Changes in the UAL resulting from assumption changes will be amortized over an appropriate period as determined by the Board of Trustees. Because the full actuarial contribution rate is contributed for all of the groups, the UAL is expected to decrease absent other factors such as actual experience that is different than expected based on the actuarial assumptions (on both assets and liabilities), changes in actuarial assumptions, procedures, methods, or changes in benefit provisions.

The actual experience measured in this valuation is that which occurred during the prior plan year (calendar year 2022). For all groups, the valuation results reflect a net liability loss for the year (which increases the unfunded actuarial liability), largely due to salary increases that were higher than expected based on actuarial assumptions. In aggregate, the net liability loss for the entire System was \$473 million, about 1.33% of the total actuarial liability. In addition, the System experienced a return of 5.6% on the actuarial value of assets, which is below the assumed return of 7.00%, resulting in an experience loss on actuarial assets of \$340 million. Therefore, the aggregate experience (asset and liability) for calendar year 2022 was an experience loss for the total System of \$813 million.

Between December 31, 2021 and December 31, 2022 the change in the unfunded actuarial liability for the System, in total, was as follows (in millions):

	\$ millions
Unfunded Actuarial Liability, December 31, 2021	\$ 9,827
• effect of contribution cap	0
• expected decrease due to amortization method	(168)
• (gain)/loss from investment return on actuarial assets	340
• demographic experience ¹	473
• additional contributions	(901)
• benefit changes	25
• all other experience	(29)
Unfunded Actuarial Liability, December 31, 2022	\$ 9,567

¹Liability loss is 1.33% of total actuarial liability.

A detailed summary of the change in the unfunded actuarial liability by group is shown on page 16.

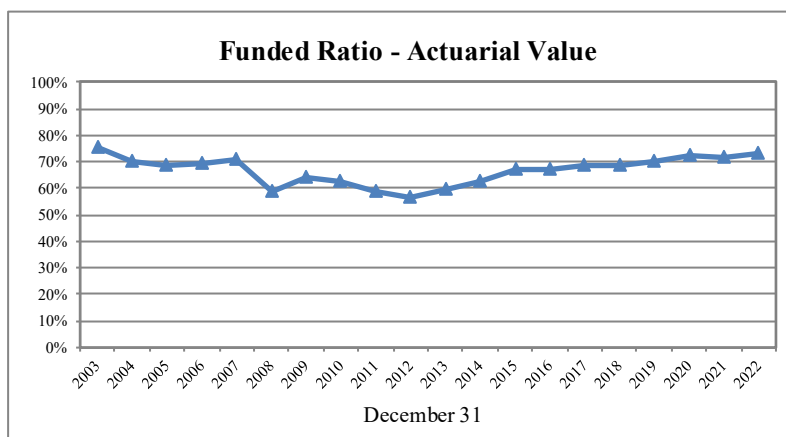


SECTION 1 – BOARD SUMMARY

An evaluation of the unfunded actuarial liability on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both very large numbers) is reflected. Another way to evaluate the unfunded actuarial liability and the progress made in its funding is to track the funded status, the ratio of the actuarial value of assets to the actuarial liability. The funded ratio does not necessarily indicate whether or not additional funding is needed, nor does it indicate whether or not the plan could settle all liabilities with current assets. The funded status information for the total System is shown in the following table (in millions).

	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22
Using Actuarial Value of Assets:						
Funded Ratio (AVA/AL)	68%	68%	70%	73%	72%	73%
Unfunded Actuarial Liability (AL-AVA)	\$8,907	\$9,202	\$9,007	\$8,488	\$9,827	\$9,567
Using Market Value of Assets:						
Funded Ratio (MVA/AL)	70%	64%	72%	76%	78%	68%
Unfunded Actuarial Liability (AL-MVA)	\$8,569	\$10,430	\$8,439	\$7,558	\$7,739	\$11,500

Note: comparability of results is limited for certain years as assumption changes occurred. In particular, the investment return assumption was lowered from 7.75% to 7.00% in the 2021 valuation.



Changes in actuarial assumptions and methods, coupled with investment returns below the assumed rate and contributions below the actuarial rate significantly reduced the funded ratio over the first part of this period. The funded ratio is expected to increase steadily in the future assuming assumptions are met and scheduled contributions are made.

Given the deferred investment experience, the dollar amount of the unfunded actuarial liability for the entire System is expected to increase over the next few years as the unrecognized investment experience flows through the asset smoothing method. Over the longer term, the funded ratio is expected to improve, but will continue to be heavily dependent on actual investment returns in the future.



SECTION 1 – BOARD SUMMARY

CONTRIBUTION RATES

The funding objective of the System is to establish contribution rates that over time will remain relatively level as a percentage of payroll, and to pay off the unfunded actuarial liability in a reasonable timeframe.

Generally, the actuarial contribution rates to the various Systems consist of:

- a "normal cost" for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date and an expense load for administrative expenses for the year,
- an "unfunded actuarial liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

There is also a statutory contribution rate that is used to finance the Death and Disability Program. Contributions for the Death and Disability Program are deposited in a separate trust fund from which benefits are paid. A separate actuarial analysis and report is prepared for the Death and Disability Program on June 30 of each year, so the death and disability contribution rate is not reflected in this report.

In KPERS, State, School and Local employers do not necessarily contribute the full actuarial contribution rate. Based on legislation passed in 1993, the employer contribution rates certified by the Board may not increase by more than the statutory cap. The statutory cap, which has been changed by the Legislature periodically, is currently 1.20% for all three groups.

The results of the December 31, 2022 valuation are used to set employer contribution rates for Fiscal Year 2026 for the State and School (July 1, 2025 to June 30, 2026) and Fiscal Year 2025 for Local employers (calendar year 2025). The unfunded actuarial liability is amortized as a level-percentage of payroll for all groups except the Judges where a level-dollar payment is used. The payroll growth assumption is 3.00%, so the dollar amount of the annual amortization payments will increase 3.00% each year. As a result, if total payroll grows 3.00% per year, as assumed, the amortization payment will remain level as a percentage of total payroll. However, if actual payroll growth is less than 3.00%, the unfunded actuarial liability contribution rate will increase.

A summary of the actuarial and statutory employer contribution rates for the System is shown below:

System	December 31, 2022 Valuation		
	Actuarial	Statutory	Difference
State ¹	11.18%	11.56%	(0.38%)
School ¹	11.66%	11.56%	0.10%
State/School ¹	11.56%	11.56%	0.00%
Local ¹	9.60%	9.60%	0.00%
Police & Fire - Uniform Rates ²	24.61%	24.61%	0.00%
Judges	23.06%	23.06%	0.00%

¹ By statute, rates are allowed to increase by a maximum of 1.20%, plus the cost of any benefit enhancements. The December 31, 2022 valuation sets the employer contribution rate for FY 2026 for the State and School group and calendar year 2025 for the Local group.

² For KP&F, the statutory contribution rate is equal to the "Uniform" rate. The rate shown is for both State and Local employers. The uniform rate does not include the payment required to amortize the unfunded past service liability determined separately for each employer (Table 16).



SECTION 1 – BOARD SUMMARY

As mentioned earlier, due to statutory caps the full actuarial contribution rate is not necessarily contributed for all KPERS groups. The State and Local groups reached the actuarial required contribution (ARC) date (the year in which the statutory contribution rate is equal to or greater than the ARC rate) in the 2010 and 2012 valuations, respectively, and remain at the ARC rate in this valuation. However, due to the lag between the valuation date and the applicable fiscal year for the contribution rate, the State group did not actually contribute the full ARC until FY 2014 and the Local group until CY 2015. Based on the current valuation, there is a small difference (shortfall) between the actuarial and statutory contribution rates of 0.10% for the School group. However, the statutory contribution rate is set for the combined State/School group and the ARC date occurred in FY 2021 at a rate of 14.23% of pay, based on the December 31, 2017 valuation. The statutory and actuarial required contribution rates have remained equal since then, including in the current valuation.

Separate employer contribution rates are calculated for two subgroups of the State: Correctional Employee Groups with a normal retirement age of 55 (C55) and a normal retirement age of 60 (C60). The contribution rates are calculated by increasing the state statutory contribution rate by the difference in the normal cost rate for the C55 and C60 groups over the normal cost rate for regular state members, but not to exceed the statutory cap on contribution increases. The higher contribution rates are intended to finance the earlier normal retirement age. The resulting contribution rates for the Correctional Employee Groups for FY 2026 are shown in the following table.

Corrections Group	Statutory Rate
Retirement Age 55:	12.46%
Retirement Age 60:	12.90%

The change in the employer actuarial contribution rate from December 31, 2021 to December 31, 2022 and the primary components thereof are shown in the table on page 17. Unfavorable experience on both the System’s assets and liabilities during 2022 had a significant impact on all groups and was the primary factor for the increase in the employer contribution rates. However, the additional contributions made to the School group during 2022 largely offset the increase from unfavorable experience for the State/School group, so their actuarial contribution rate only increased by 0.14% of pay.

COMMENTS

The key factors that impacted the results as of December 31, 2022 valuation were (1) unfavorable investment and liability experience during calendar year 2022 that increased the unfunded actuarial liability and (2) additional contributions to the School group totaling \$871.1 million that reduced the unfunded actuarial liability. The net result was a decrease in the System’s unfunded actuarial liability of \$88 million. While each of these factors impacted the System’s unfunded actuarial liability, only the unfavorable investment and liability experience impacted the actuarial contribution rate. This is because the additional contributions were already reflected in the System’s projected unfunded actuarial liability as of June 30, 2024 in the prior valuation, which sets the actuarial contribution rate. The impact of the unfavorable experience on the actuarial contribution rate was an increase of 0.57% of pay for the State/School group.

Like most public retirement systems, KPERS uses an asset smoothing method to average the actual investment experience above and below the assumed net rate of return. Under the asset smoothing method, the difference between the dollar amount of the actual and assumed investment experience is recognized equally over a five-year period. While the return on the market value of assets was -9.8% for



SECTION 1 – BOARD SUMMARY

calendar year 2022, only a portion of the unfavorable experience is recognized in the current valuation. Due to the asset smoothing method, the return on the actuarial value of assets in 2022 was 5.6%. This generated an experience loss on assets because the actual return was below the assumed return of 7.00% for 2022. As of the current valuation date, the actuarial value of assets exceeds the market value of assets by about 7.9% or \$1.934 billion. This deferred experience will flow through the asset smoothing method in the next four years and be recognized in the valuation process. However, it may be offset if investment returns are above the assumed rate of return (7.00%) in future years. As the deferred investment experience is recognized, the funded ratio can be expected to decrease and the actuarial contribution rate to increase.

While the use of an asset smoothing method is a common procedure used by public retirement systems, it is important to identify the potential impact of the deferred (unrecognized) investment experience. This is particularly important when there are significant deferred investment losses. To illustrate the impact of the deferred investment experience, the key valuation results are shown in the following table for the State/School and KP&F groups using both the actuarial value of assets and the pure market value. The impact would be similar for the other groups.

	December 31, 2022			
	State/School		KP&F	
	Actuarial	Market	Actuarial	Market
Actuarial Liability	\$24,290	\$24,290	\$4,480	\$4,480
Asset Value	<u>18,029</u>	<u>16,711</u>	<u>3,143</u>	<u>2,913</u>
Unfunded Actuarial Liability*	\$ 6,261	\$ 7,579	\$1,337	\$1,567
Funded Ratio	74%	69%	70%	65%
Contribution Rate:				
Normal Cost Rate	8.81%	8.81%	17.56%	17.56%
UAL Payment	<u>8.75%</u>	<u>10.71%</u>	<u>14.20%</u>	<u>17.03%</u>
Actuarial Contribution Rate	17.56%	19.52%	31.76%	34.59%
Employee Rate	<u>6.00%</u>	<u>6.00%</u>	<u>7.15%</u>	<u>7.15%</u>
Employer Rate	11.56%	13.52%	24.61%	27.44%

* May not add due to rounding

Future investment experience will impact the extent to which the deferred investment experience (which is currently a net loss) will be recognized. The ultimate impact of the deferred experience on the employer contribution rate would be similar to the column shown above based on the market value of assets, if all actuarial assumptions are met including the 7.00% return in future years. Also, please refer to the graphs later in this section that show the projected contribution rates assuming a 7.00% net rate of return in all future years.

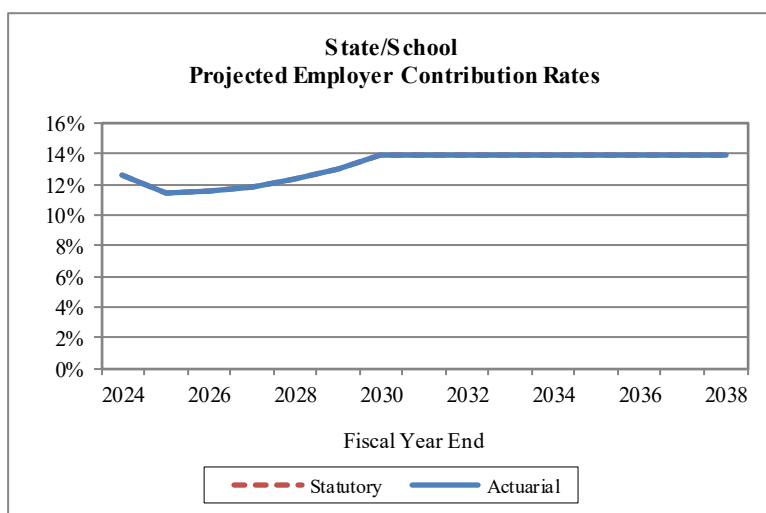
Projected Employer Contribution Rates

The following graphs show the preliminary projected employer contribution rates assuming all actuarial assumptions are met in the future, including a 7.00% net rate of return on the market value of assets in all years, and that the current statutory funding policy for the State/School group (including the amortization policy) continues and contributions are made as scheduled.

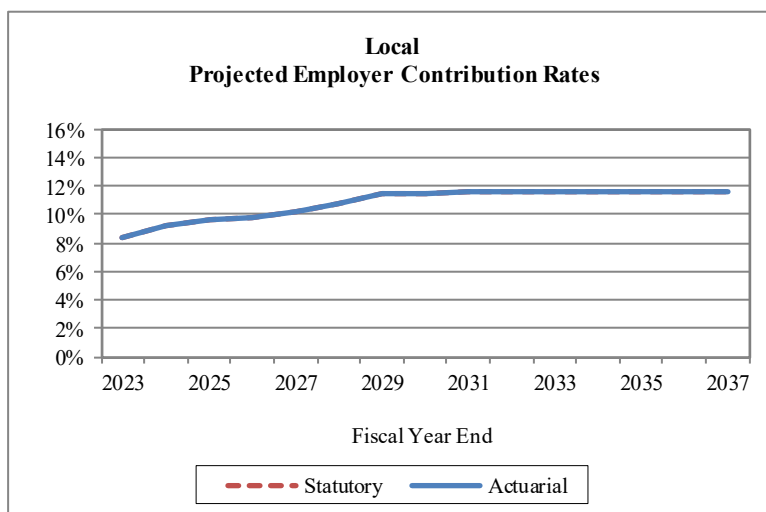


SECTION 1 – BOARD SUMMARY

Note that although separate valuations are performed for the State and School groups, the statutory contribution rate for the two is determined using the combined valuation results for the two groups. Contributions which result from the excess of the statutory contribution rate over the actuarial required contribution rate for the State are allocated to the School to improve the funding of that group.



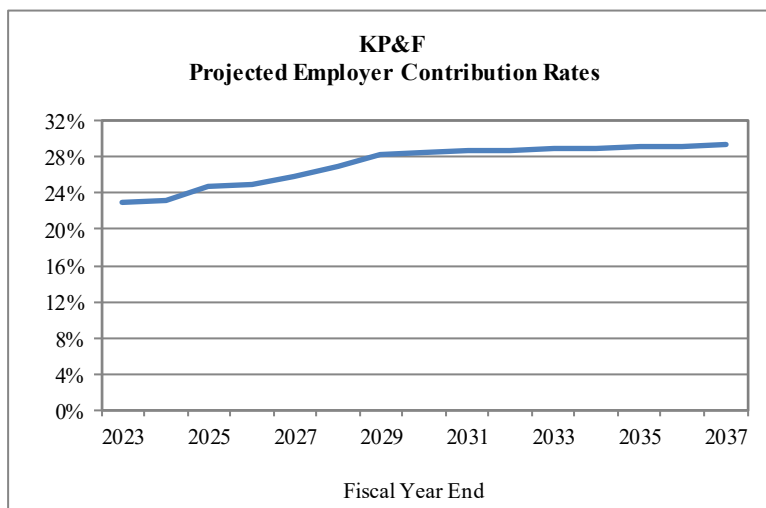
The State/School group reached the ARC date in the 2017 valuation (FY 2021) at an ARC rate of 14.23%. Given the deferred investment experience, the contribution rate is expected to increase from the current rate of 11.56% to around 14% and then remain steady. During the entire projection period, the statutory rate is expected to be equal to the ARC rate. Actual experience in future years, particularly investment returns, will significantly impact future actuarial and statutory rates.



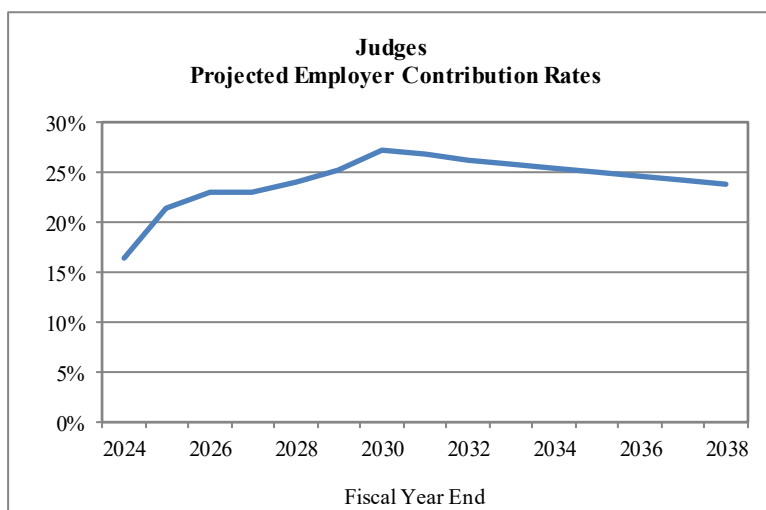
The Local group reached the ARC date in the 2012 valuation at an ARC rate of 9.48%. The projected contribution rate is expected to increase from the current rate of 9.60% to around 12% over the long term. Actual experience in future years, particularly investment returns, will significantly impact future actuarial and statutory rates.



SECTION 1 – BOARD SUMMARY



The projected employer contribution rate for KP&F is expected to increase from its current level at 24.61% of pay to around 28% after the deferred investment experience has been recognized through the asset smoothing method. However, actual experience in future years, particularly investment returns, will significantly impact future contribution rates.



The projected employer contribution rate for Judges is expected to increase as the deferred investment experience is recognized through the asset smoothing method, and then start to decrease as the system moves toward full funding. Actual experience in future years, particularly investment returns, will significantly impact future employer contribution rates.



SECTION 1 – BOARD SUMMARY

**SUMMARY OF CHANGE IN UNFUNDED ACTUARIAL LIABILITY
BY SYSTEM
DECEMBER 31, 2022 VALUATION
(\$ millions)**

	State	School	State/School	Local	KP&F	Judges	Total
UAL in 12/31/2021 Valuation Report	\$1,088.9	\$5,803.6	\$6,892.5	\$1,783.7	\$1,140.7	\$10.2	\$9,827.0
· Effect of contribution cap	0.0	0.0	0.0	0.0	0.0	0.0	0.0
· Expected decrease due to UAL amortization	(19.1)	(98.2)	(117.2)	(38.4)	(12.1)	(0.4)	(168.2)
· Actual vs. expected experience							
Investment return	50.9	184.2	235.2	62.2	39.6	2.7	339.6
Demographic experience	115.7	58.3	174.0	149.1	146.2	4.0	473.3
All other experience	(10.0)	(12.4)	(22.4)	(4.1)	(3.0)	(0.1)	(29.5)
· Benefit changes	0.0	0.0	0.0	0.0	25.5	0.0	25.5
· Additional Contributions	0.0	(901.1)	(901.1)	0.0	0.0	0.0	(901.1)
UAL in 12/31/2022 Valuation Report	\$1,226.5	\$5,034.4	\$6,260.9	\$1,952.4	\$1,336.8	\$16.4	\$9,566.5

Note: Numbers may not add due to rounding.



SECTION 1 – BOARD SUMMARY

**SUMMARY OF
CHANGES IN EMPLOYER ACTUARIAL CONTRIBUTION RATE
BY SYSTEM
AS OF DECEMBER 31, 2022**

Percentage of Payroll	State	School	State/School	Local	KP&F ¹	Judges
Actuarial Contribution Rate in 12/31/2021 Valuation	10.66%	11.60%	11.42%	9.26%	23.10%	21.35%
Change Due to Amortization of UAL						
· effect of contribution cap	0.00	0.00	0.00	0.00	0.00	0.00
· UAL amortization method	0.00	0.00	0.00	0.00	0.00	(0.11)
· investment experience	0.36	0.32	0.33	0.22	0.46	0.83
· liability experience	0.81	0.10	0.24	0.54	1.68	1.23
· all other experience	(0.16)	(0.27)	(0.26)	(0.10)	(0.07)	(0.38)
· payroll growth	(0.45)	(0.01)	(0.09)	(0.24)	(0.92)	0.00
· benefit changes	0.00	0.00	0.00	0.00	0.33	0.00
Change in Employer Normal Cost Rate						
· benefit changes	0.00	0.00	0.00	0.00	0.11	0.00
· assumptions	0.00	0.00	0.00	0.00	0.00	0.00
· all other experience	(0.04)	(0.08)	(0.08)	(0.08)	(0.08)	0.14
Actuarial Contribution Rate in 12/31/2022 Valuation	11.18%	11.66%	11.56%	9.60%	24.61%	23.06%

¹ Contribution rate for Local employers only.



SECTION 1 – BOARD SUMMARY

SUMMARY OF HISTORICAL CHANGES IN TOTAL SYSTEM UNFUNDED ACTUARIAL LIABILITY
as of
DECEMBER 31, 2022 VALUATION

%(millions)	As Reported on Valuation Date							
	6/30/94	6/30/95	6/30/96	6/30/97	6/30/98	6/30/99	6/30/00	12/31/00
Actual Experience vs. Assumed								
• Investment	\$(102)	\$(143)	\$(280)	\$(323)	\$(413)	\$(369)	\$(441)	\$(23)
• Other	320	72	136	157	104	46	99	84
Assumption Changes	0	(96)	0	0	350	0	0	(206)
Changes in Data/Procedures	244	0	0	0	0	21	71	145**
Change in Cost Method	0	0	0	0	0	0	0	0
Effect of Contribution Cap/Lag	*	95	70	63	54	78	66	60
Amortization Method	*	47	38	35	32	30	22	12
Change in Benefit Provisions	75	0	0	0	88	0	19	0
Change in Actuarial Firm/Software	0	0	0	0	0	0	0	0
Bond Issue	0	0	0	0	0	0	0	0
Non-Collectible Pension Contributions	0	0	0	0	0	0	0	0
Additional Contributions	0	0	0	0	0	0	0	0
Total	\$537	\$(25)	\$(36)	\$(68)	\$215	\$(194)	\$(164)	\$72

* Not calculated for this year.

** Reflects the impact of re-establishing the KP&F Supplemental Actuarial Liability at December 31, 2002. The additional unfunded actuarial liability as of December 31, 2000 for the State/School and Local groups not recognized in the prior valuation due to the phase-in of the change in actuarial procedures is included.

Unfunded actuarial liability 6/30/93: \$ 968 million

Unfunded actuarial liability 12/31/22: \$ 9,567 million



SECTION 1 – BOARD SUMMARY

SUMMARY OF HISTORICAL CHANGES IN TOTAL SYSTEM UNFUNDED ACTUARIAL LIABILITY
as of
DECEMBER 31, 2022 VALUATION (continued)

% (millions)	As Reported on Valuation Date							
	12/31/01	12/31/02	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07	12/31/08
Actual Experience vs. Assumed								
• Investment	\$350	\$644	\$140	\$456	\$167	\$(293)	\$(626)	\$2,332
• Other	(9)	68	(32)	16	(84)	140	99	78
Assumption Changes	0	0	0	437	(5)	0	384	0
Changes in Data/Procedures	5	177**	(286)***	0	0	0	0	0
Change in Cost Method	0	0	1,147	0	0	0	0	0
Effect of Contribution Cap/Lag	115	143	178	179	247	258	251	246
Amortization Method	14	21	47	68	84	83	78	71
Change in Benefit Provisions	0	37	3	1	0	24	2	0
Change in Actuarial Firm/Software	0	0	0	0	0	0	0	0
Bond Issue	0	(41)	(440)	0	0	0	0	0
Non-Collectible Pension Contributions	0	0	0	0	0	0	0	0
Additional Contributions	0	0	0	0	0	0	0	0
Total	\$475	\$1,049	\$757	\$1,157	\$409	\$212	\$188	\$2,727

** Reflects the impact of re-establishing the KP&F Supplemental Actuarial Liability at December 31, 2002. The additional unfunded actuarial liability as of December 31, 2000 for the State/School and Local groups not recognized in the prior valuation due to the phase-in of the change in actuarial procedures is included.

*** Change in asset valuation method.

Unfunded actuarial liability 6/30/93: \$ 968 million

Unfunded actuarial liability 12/31/22: \$ 9,567 million



SECTION 1 – BOARD SUMMARY

SUMMARY OF HISTORICAL CHANGES IN TOTAL SYSTEM UNFUNDED ACTUARIAL LIABILITY
as of
DECEMBER 31, 2022 VALUATION (continued)

\$(millions)	As Reported on Valuation Date							
	12/31/09	12/31/10	12/31/11	12/31/12	12/31/13	12/31/14	12/31/15	12/31/16
Actual Experience vs. Assumed								
• Investment	\$(1,011)	\$560	\$852	\$732	\$(653)	\$(368)	\$52	\$(59)
• Other	(70)	(334)	(190)	(78)	(125)	(78)	(130)	(144)
Assumption Changes	0	0	(64)	0	0	(50)	0	593
Changes in Data/Procedures	0	0	0	0	0	0	0	0
Change in Cost Method	0	0	0	0	0	0	0	0
Effect of Contribution Cap/Lag	383	320	289	303	246	178	160	70
Amortization Method	96	68	62	49	46	18	(11)	(38)
Change in Benefit Provisions	0	0	15	19	0	1	0	1
Change in Actuarial Firm/Software	0	(27)	0	0	0	0	0	0
Bond Issue	0	0	0	0	0	0	(1,000)	0
Non-Collectible Pension Contributions	0	0	0	0	0	0	0	99
Additional Contribution	0	0	0	0	0	0	0	0
Total	\$(602)	\$587	\$964	\$1,025	\$(487)	\$(298)	\$(929)	\$522

Unfunded actuarial liability 6/30/93: \$ 968 million
 Unfunded actuarial liability 12/31/22: \$ 9,567 million



SECTION 1 – BOARD SUMMARY

SUMMARY OF HISTORICAL CHANGES IN TOTAL SYSTEM UNFUNDED ACTUARIAL LIABILITY
as of
DECEMBER 31, 2022 VALUATION (continued)

\$(millions)	As Reported on Valuation Date						
	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22	Total
Actual Experience vs. Assumed							
• Investment	\$(117)	\$476	\$210	\$(316)	\$(703)	\$340	\$1,071
• Other	(50)	69	32	14	107	444	761
Assumption Changes	0	0	(51)	0	2,718	0	4,010
Changes in Data/Procedures	0	0	(60)	0	0	0	317
Change in Cost Method	0	0	0	0	0	0	1,147
Effect of Contribution Cap/Lag	149	64	18	8	0	0	4,291
Amortization Method	(136)	(171)	(169)	(225)	(283)	(168)	(180)
Change in Benefit Provisions	0	0	0	0	0	25	310
Change in Actuarial Firm/Software	0	0	0	0	0	0	(27)
Bond Issue	0	0	0	0	(500)	0	(1,981)
Non-Collectible Pension	0	0	0	0	0	0	99
Contributions							
Additional Contributions	0	(143)	(175)	0	0	(901)	(1,219)
Total	\$(154)	\$295	\$(195)	\$(519)	\$1,339	\$(260)	\$8,599

Unfunded actuarial liability 6/30/93: \$ 968 million

Unfunded actuarial liability 12/31/22: \$ 9,567 million

Note: Although a total column is shown, the amounts in each year are not additive because they are calculated on each valuation date and, therefore, represent values at different points in time.



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
(STATE)

Table with 4 columns: Description, 12/31/2022 Valuation, 12/31/2021 Valuation, and % Change. Rows include Participant Data (Number of Active/Retired/Inactive Members, Projected Annual Salaries, Annual Retirement Payments), Assets and Liabilities (Total Actuarial Liability, Assets for Valuation Purposes, Unfunded Actuarial Liability, Funded Ratio, Market Value of Assets), and Employer Contribution Rates (Normal Cost, Amortization of Unfunded Actuarial Liability, Actuarial Contribution Rate, Statutory Employer Contribution Rate*).

* The rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20% for FY 2017 and later. This rate excludes the contribution rate for the Death and Disability Program. Any excess of the statutory over actuarial contribution rates applied to actual State payroll is deposited to the School assets.



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
(SCHOOL)

Table with 4 columns: Description, 12/31/2022 Valuation, 12/31/2021 Valuation, and % Change. Rows include Participant Data (Active/Retired/Inactive Members, Projected Salaries, Retirement Payments), Assets and Liabilities (Actuarial Liability, Assets, Funded Ratio, Market Value), and Employer Contribution Rates (Normal Cost, Amortization, Actuarial Rate, Statutory Rate).

* The rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20% for FY 2017 and later. This rate excludes the contribution rate for the Death and Disability Program.



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
(STATE/SCHOOL)

Table with 4 columns: Description, 12/31/2022 Valuation, 12/31/2021 Valuation, and % Change. Rows include Participant Data (Active/Retired/Inactive Members, Projected Salaries, Retirement Payments), Assets and Liabilities (Actuarial Liability, Assets, Funded Ratio), and Employer Contribution Rates (Normal Cost, Amortization, Actuarial Rate, Statutory Rate).

* The rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20% for FY 2017 and later. This rate excludes the contribution rate for the Death and Disability Program.



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
(LOCAL)

Table with 4 columns: Description, 12/31/2022 Valuation, 12/31/2021 Valuation, % Change. Rows include Participant Data (Active/Retired/Inactive Members, Projected Salaries, Retirement Payments), Assets and Liabilities (Actuarial Liability, Assets, Funded Ratio, Market Value), and Employer Contribution Rates (Normal Cost, Amortization, Actuarial Rate, Statutory Rate).

* The Statutory Employer Contribution Rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20% for FY 2017 and later. This rate excludes the contribution rate for the Death and Disability Program.



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
(TOTAL KPERS)

Table with 4 columns: Description, 12/31/2022 Valuation, 12/31/2021 Valuation, and % Change. Rows include Participant Data (Number of Active, Retired, Inactive Members, Total Members) and Assets and Liabilities (Total Actuarial Liability, Assets for Valuation Purposes, Unfunded Actuarial Liability, Funded Ratio, Market Value of Assets, Funded Ratio on Market Value).



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS

KANSAS POLICE AND FIREMEN'S RETIREMENT SYSTEM

	12/31/2022 Valuation	12/31/2021 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	7,868	7,779	1.1%
Retired Members and Beneficiaries	6,224	6,055	2.8%
Inactive Members	2,515	2,304	9.2%
Total Members	<u>16,607</u>	<u>16,138</u>	2.9%
Projected Annual Salaries of Active Members	\$ 635,221,373	\$ 579,152,470	9.7%
Annual Retirement Payments for Retired Members and Beneficiaries	\$ 231,313,418	\$ 221,834,375	4.3%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	\$ 4,480,287,951	\$ 4,190,420,489	6.9%
b. Assets for Valuation Purposes	\$ 3,143,459,342	\$ 3,049,754,807	3.1%
c. Unfunded Actuarial Liability (a) - (b)	\$ 1,336,828,609	\$ 1,140,665,682	17.2%
d. Funded Ratio (b) / (a)	70.2%	72.8%	(3.6%)
e. Market Value of Assets	\$ 2,913,418,901	\$ 3,313,453,368	(12.1%)
f. Funded Ratio on Market Value (e) / (a)	65.0%	79.1%	(17.8%)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost			
Total	17.56%	17.53%	
Member	<u>7.15%</u>	<u>7.15%</u>	
Employer	10.41%	10.38%	
Amortization of Unfunded Actuarial and Supplemental Liability	<u>14.20%</u>	<u>12.72%</u>	
Actuarial Contribution Rate (Local Employers)	24.61%	23.10%	
Statutory Employer Contribution Rate*	<u>24.61%</u>	<u>23.10%</u>	

* The Statutory Employer Contribution Rate is equal to the Actuarial Rate. This is referred to as the "Uniform" rate, and varies for State and Local employers. The total contribution is equal to the appropriate uniform rate plus the payment required to amortize any unfunded past service liability, determined separately for each employer.



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS
KANSAS RETIREMENT SYSTEM FOR JUDGES

Table with 4 columns: Description, 12/31/2022 Valuation, 12/31/2021 Valuation, and % Change. Rows include Participant Data (Active/Retired/Inactive Members, Projected Annual Salaries, Retirement Payments), Assets and Liabilities (Total Actuarial Liability, Assets, Unfunded Liability, Funded Ratio, Market Value), and Employer Contribution Rates (Normal Cost, Amortization, Actuarial Rate, Statutory Rate).

* Statutory Employer Contribution Rate is equal to the Actuarial Rate. This rate excludes the contribution for the Death and Disability Program.



SECTION 1 – BOARD SUMMARY

SUMMARY OF PRINCIPAL RESULTS

ALL SYSTEMS COMBINED

	12/31/2022 Valuation	12/31/2021 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	151,984	152,288	(0.2%)
Retired Members and Beneficiaries	113,031	110,586	2.2%
Inactive Members	75,622	70,224	7.7%
Total Members	340,637	333,098	2.3%
Projected Annual Salaries of Active Members	\$ 8,059,095,175	\$ 7,672,392,322	5.0%
Annual Retirement Payments for Retired Members and Beneficiaries	\$ 1,949,973,606	\$ 1,867,989,097	4.4%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	\$ 36,016,132,936	\$ 34,630,796,404	4.0%
b. Assets for Valuation Purposes	\$ 26,449,612,317	\$ 24,803,792,904	6.6%
c. Unfunded Actuarial Liability (a) - (b)	\$ 9,566,520,619	\$ 9,827,003,500	(2.7%)
d. Funded Ratio (b) / (a)	73.4%	71.6%	2.5%
e. Market Value of Assets	\$ 24,515,922,988	\$ 26,891,828,161	(8.8%)
f. Funded Ratio on Market Value (e) / (a)	68.1%	77.7%	(12.4%)



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SECTION 2 – SCOPE OF THE REPORT

This report presents the actuarial valuation of the Kansas Public Employees Retirement System (KPERs) as of December 31, 2022. This valuation was prepared at the request of the System’s Board of Trustees.

The reader is encouraged to review the actuarial certification letter, where the guidelines employed in the preparation of this report are outlined. Also included in this letter are comments on the sources and reliability of both the data and the actuarial assumptions upon which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings resulting from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the System. Sections 4 and 5 describe how the obligations of the System are to be met under the actuarial cost method in use. Section 6 provides other historical information about the System. Section 7 discusses risks, related to funding, for the System to consider.

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on December 31, 2022, as amended by legislation in the 2023 Session.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.



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SECTION 3 – ASSETS

Market Value of Assets

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time. At December 31, 2022, the market value of assets for the Retirement System was \$24.516 billion. Table 1 shows the market value of assets as of December 31, 2022 in total and by investment category. Table 2 summarizes the change in the market value of assets, from December 31, 2021 to December 31, 2022, by group.

Actuarial Value of Assets

Neither the market value of assets, representing a "cash-out" value of System assets, nor the book value of assets, representing the cost of investments, may be the best measure of the System's ongoing ability to meet its obligations.

To arrive at a suitable value for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. The current asset smoothing method was implemented with the December 31, 2003 actuarial valuation.

Under the asset smoothing method, the difference between the actual return and the expected return (based on the actuarial assumed rate of return) on the market value of assets is calculated each year and recognized equally over a five-year period.

Tables 3A through 3F and Table 4 show the development of the actuarial value of assets (AVA) as of December 31, 2022. Table 5 shows the deferred asset experience and how it will be recognized during the following four years.



SECTION 3 – ASSETS

TABLE 1
ANALYSIS OF NET ASSETS AT MARKET VALUE

	<u>December 31, 2022</u>	
	<u>Amount</u>	<u>% of</u>
	(\$ Millions)	<u>Total</u>
Cash & Equivalents	\$ 488	2.0 %
Alternative Investments	2,773	11.3
Real Estate	3,885	15.8
Fixed Income	6,369	26.1
Domestic Equity	6,190	25.2
International Equity	4,811	19.6
Net Assets	\$ 24,516	100.0 %
Allocation of Net Assets on December 31, 2022:		
State	\$ 3,735	
School	12,975	
Local	4,697	
KP&F	2,913	
Judges	195	
Total Net Assets*	\$ 24,516	

* May not add due to rounding



SECTION 3 – ASSETS

TABLE 2
SUMMARY OF CHANGES IN TOTAL SYSTEM ASSETS
DURING PERIOD ENDED DECEMBER 31, 2022

(Market Value)

Table with 5 columns: Description, State, School, State/School, Local. Rows include Market Value of Assets as of January 1, 2022; Contributions (Employee, Service purchases, etc.); Total Investment Income; Less Benefits (Annuity, Lump sum, etc.); Administrative Expenses; Net Increase in Assets; Market Value of Assets as of December 31, 2022.



SECTION 3 – ASSETS

TABLE 2 (cont.)
SUMMARY OF CHANGES IN TOTAL SYSTEM ASSETS
DURING PERIOD ENDED DECEMBER 31, 2022

(Market Value)

Table with 5 columns: Description, KPERS, KP&F, Judges, Total. Rows include Market Value of Assets as of January 1, 2022, Contributions (Employee, Employee service purchases, Statutory Employer, Additional Employer, Miscellaneous, Total Contributions), Total Investment Income, Total Income, Less Benefits (Annuity Retirement Benefits, Partial Lump Sum Benefits, Retirant Dividends, Withdrawals, Death Benefits, Total Benefits), Administrative Expenses, Net Increase in Assets, and Market Value of Assets as of December 31, 2022.



SECTION 3 – ASSETS

TABLE 3A
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME FOR
ACTUARIAL VALUE OF NET ASSETS
State

	Plan Year End			
	12/31/2019	12/31/2020	12/31/2021	12/31/2022
1. Market Value of Assets, beginning of year	\$ 3,371,313,965	\$ 3,743,398,257	\$ 3,950,313,620	\$ 4,346,193,928
2. Contributions during year	158,463,697	163,653,714	161,855,106	180,430,979
3. Benefits paid during year	(340,586,368)	(348,491,718)	(362,861,831)	(369,731,755)
4. Administrative expenses paid during year	(2,637,861)	(2,405,434)	(3,475,347)	(2,991,154)
5. Assumed Rate of Return	7.75%	7.75%	7.75%	7.00%
6. Expected investment income	254,250,948	282,993,063	298,373,471	297,617,186
7. Expected Value of Assets, end of year	3,440,804,381	3,839,147,882	4,044,205,019	4,451,519,184
8. Market Value of Assets, end of year	3,743,398,257	3,950,313,620	4,346,193,928	3,735,276,243
9. Excess (shortfall) of net investment income	\$ 302,593,876	\$ 111,165,738	\$ 301,988,909	\$ (716,242,941)



SECTION 3 – ASSETS

TABLE 3B
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME FOR
ACTUARIAL VALUE OF NET ASSETS
School

Table with 5 columns: Description, 12/31/2019, 12/31/2020, 12/31/2021, 12/31/2022. Rows include Market Value of Assets, Contributions, Benefits paid, Administrative expenses, Assumed Rate of Return, Expected investment income, Expected Value of Assets, Market Value of Assets, and Excess (shortfall) of net investment income.



SECTION 3 – ASSETS

TABLE 3C
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME FOR
ACTUARIAL VALUE OF NET ASSETS
State/School

	Plan Year End			
	12/31/2019	12/31/2020	12/31/2021	12/31/2022
1. Market Value of Assets, beginning of year	\$ 12,386,610,478	\$ 14,333,922,636	\$ 15,532,753,473	\$ 18,027,311,819
2. Contributions during year	1,179,829,233	1,026,454,708	1,540,845,006	1,912,433,546
3. Benefits paid during year	(1,300,357,277)	(1,347,915,582)	(1,421,553,068)	(1,463,131,910)
4. Administrative expenses paid during year	(9,842,308)	(9,334,857)	(13,829,879)	(12,527,952)
5. Assumed Rate of Return	7.75%	7.75%	7.75%	7.00%
6. Expected investment income	955,004,722	1,098,299,843	1,207,798,797	1,276,940,355
7. Expected Value of Assets, end of year	13,211,244,848	15,101,426,748	16,846,014,329	19,741,025,858
8. Market Value of Assets, end of year	14,333,922,636	15,532,753,473	18,027,311,819	16,710,741,366
9. Excess (shortfall) of net investment income	\$ 1,122,677,788	\$ 431,326,725	\$ 1,181,297,490	\$ (3,030,284,492)



SECTION 3 – ASSETS

TABLE 3D
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME FOR
ACTUARIAL VALUE OF NET ASSETS
Local

	Plan Year End			
	12/31/2019	12/31/2020	12/31/2021	12/31/2022
1. Market Value of Assets, beginning of year	\$ 3,752,043,860	\$ 4,323,027,610	\$ 4,699,700,683	\$ 5,326,275,739
2. Contributions during year	282,775,216	278,465,908	296,334,261	308,020,169
3. Benefits paid during year	(341,067,119)	(361,202,201)	(391,862,858)	(414,802,438)
4. Administrative expenses paid during year	(2,995,166)	(2,820,854)	(4,204,415)	(3,709,541)
5. Assumed Rate of Return	7.75%	7.75%	7.75%	7.00%
6. Expected investment income	288,452,837	331,781,160	360,434,258	369,037,495
7. Expected Value of Assets, end of year	3,979,209,628	4,569,251,623	4,960,401,929	5,584,821,424
8. Market Value of Assets, end of year	4,323,027,610	4,699,700,683	5,326,275,739	4,696,616,653
9. Excess (shortfall) of net investment income	\$ 343,817,982	\$ 130,449,060	\$ 365,873,810	\$ (888,204,771)



SECTION 3 – ASSETS

TABLE 3E
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME FOR
ACTUARIAL VALUE OF NET ASSETS
KP&F

	Plan Year End			
	12/31/2019	12/31/2020	12/31/2021	12/31/2022
1. Market Value of Assets, beginning of year	\$ 2,361,673,707	\$ 2,696,650,789	\$ 2,918,249,554	\$ 3,313,453,368
2. Contributions during year	162,824,345	166,043,657	175,589,772	190,918,899
3. Benefits paid during year	(222,025,854)	(230,252,123)	(228,233,187)	(266,154,307)
4. Administrative expenses paid during year	(1,876,174)	(1,846,235)	(2,607,570)	(2,304,282)
5. Assumed Rate of Return	7.75%	7.75%	7.75%	7.00%
6. Expected investment income	180,707,113	206,478,576	224,063,313	229,273,747
7. Expected Value of Assets, end of year	2,481,303,137	2,837,074,664	3,087,061,882	3,465,187,425
8. Market Value of Assets, end of year	2,696,650,789	2,918,249,554	3,313,453,368	2,913,418,901
9. Excess (shortfall) of net investment income	\$ 215,347,652	\$ 81,174,890	\$ 226,391,486	\$ (551,768,524)



SECTION 3 – ASSETS

TABLE 3F
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME FOR
ACTUARIAL VALUE OF NET ASSETS
Judges

	Plan Year End			
	12/31/2019	12/31/2020	12/31/2021	12/31/2022
1. Market Value of Assets, beginning of year	\$ 169,210,144	\$ 189,825,166	\$ 201,931,613	\$ 224,787,235
2. Contributions during year	6,401,381	6,809,463	7,137,556	7,679,406
3. Benefits paid during year	(13,766,149)	(14,650,761)	(14,920,803)	(15,412,058)
4. Administrative expenses paid during year	(133,176)	(122,483)	(178,393)	(155,430)
5. Assumed Rate of Return	7.75%	7.75%	7.75%	7.00%
6. Expected investment income	12,828,662	14,408,612	15,346,943	15,463,693
7. Expected Value of Assets, end of year	174,540,862	196,269,997	209,316,916	232,362,846
8. Market Value of Assets, end of year	189,825,166	201,931,613	224,787,235	195,146,068
9. Excess (shortfall) of net investment income	\$ 15,284,304	\$ 5,661,616	\$ 15,470,319	\$ (37,216,778)



SECTION 3 – ASSETS

TABLE 4
DEVELOPMENT OF ACTUARIAL VALUE OF NET ASSETS

Table with 6 columns: Description, State, School, State/School, Local, Total KPERS. Rows include investment income, deferral of excess, market value, and actuarial value calculations.



SECTION 3 – ASSETS

TABLE 4 (cont.)
DEVELOPMENT OF ACTUARIAL VALUE OF NET ASSETS

Table with 5 columns: Description, Total KPERS, KP&F, Judges, Total. Rows include investment income excess/deferral, market value of assets, and actuarial value of assets.



SECTION 3 – ASSETS

TABLE 5
SCHEDULE OF DEFERRED ACTUARIAL VALUE OF ASSETS EXPERIENCE

Plan Year Ended	Gain/(Loss) Deferred to Future Years	Gain/(Loss) to be Recognized in Plan Year Ending			
		2023	2024	2025	2026
12/31/2019	\$ 339,425,544	\$ 339,425,544			
12/31/2020	259,444,916	129,722,458	129,722,458		
12/31/2021	1,073,419,863	357,806,621	357,806,621	357,806,621	
12/31/2022	(3,605,979,652)	(901,494,913)	(901,494,913)	(901,494,913)	(901,494,913)
Total	\$ (1,933,689,329)	\$ (74,540,290)	\$ (413,965,834)	\$ (543,688,292)	\$ (901,494,913)



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SECTION 4 – SYSTEM LIABILITIES

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date, December 31, 2022. In this section, the discussion will focus on the commitments of the System, which are referred to as its liabilities.

Table 6 contains an analysis of the actuarial present value of all future benefits (PVFB) for contributing members, inactive members, retirees and their beneficiaries. The analysis is provided for each group.

The liabilities summarized in Table 6 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes measures of both benefits already earned and future benefits expected to be earned. For all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and, if an optional benefit is chosen, for the lives of the surviving beneficiaries.

The actuarial assumptions used to determine liabilities are based on the results of the last Actuarial Experience Study and the review of the investment return assumption performed in late 2021/early 2022. This set of assumptions, as shown in Appendix C, was adopted by the Board in January 2020 with the exception of the investment return and interest crediting rate assumptions which were adopted at the May 2022 Board meeting. As a result of lowering the investment return assumption, the interest rate to convert the account balances for KPERS 3 members into monthly income also changed since it is statutorily defined as two percent less than the investment return assumption.

The liabilities reflect the benefit structure in place as of December 31, 2022, as amended by any legislation in the 2023 Session.

Actuarial Liabilities

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to “breakdown” the present value of future benefits into two components:

- (1) that attributable to the past and
- (2) that attributable to the future.

Actuarial terminology calls the part attributable to the past the “past service liability” or the “actuarial liability”. The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the “normal cost”. Table 7 contains the calculation of actuarial liabilities for all groups.



SECTION 4 – SYSTEM LIABILITIES

TABLE 6
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
PRESENT VALUE OF FUTURE BENEFITS (PVFB)
AS OF DECEMBER 31, 2022

Table with 5 columns: Category, State, School, State/School, Local. Rows include Active employees (a-e), Inactive Vested Members, Inactive Nonvested Members, Disabled Members, Retirees, Beneficiaries, Unclaimed Account Reserve, and Total PVFB.



SECTION 4 – SYSTEM LIABILITIES

TABLE 6 (cont.)
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
PRESENT VALUE OF FUTURE BENEFITS (PVFB)
AS OF DECEMBER 31, 2022

Table with 5 columns: Category, Total KPERS, KP&F, Judges, Total. Rows include Active employees (a-e), Inactive Vested Members, Inactive Nonvested Members, Disabled Members, Retirees, Beneficiaries, Unclaimed Account Reserve, and Total PVFB.



SECTION 4 – SYSTEM LIABILITIES

TABLE 7
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
ACTUARIAL LIABILITIES
AS OF DECEMBER 31, 2022

	State	School	State/School	Local
1. Present Value of Future Benefits	\$ 5,878,614,787	\$ 22,328,853,096	\$ 28,207,467,883	\$ 8,221,182,041
2. Present Value of Future Normal Costs for Active Members				
a. Retirement Benefits	\$ 388,573,111	\$ 2,428,152,435	\$ 2,816,725,546	\$ 737,443,859
b. Pre-Retirement Death Benefits	12,423,859	34,240,133	46,663,992	26,540,634
c. Termination Benefits	206,427,713	767,417,689	973,845,402	411,507,646
d. Disability Benefits	22,607,715	57,585,783	80,193,498	26,565,714
e. Total	<u>630,032,398</u>	<u>3,287,396,040</u>	<u>3,917,428,438</u>	<u>1,202,057,853</u>
3. Total Actuarial Liability (1) - (2e)	<u>\$ 5,248,582,389</u>	<u>\$ 19,041,457,056</u>	<u>\$ 24,290,039,445</u>	<u>\$ 7,019,124,188</u>



SECTION 4 – SYSTEM LIABILITIES

TABLE 7 (cont.)
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
ACTUARIAL LIABILITIES
AS OF DECEMBER 31, 2022

Table with 5 columns: Description, Total KPERS, KP&F, Judges, Total. Rows include Present Value of Future Benefits, Present Value of Future Normal Costs for Active Members (a-e), and Total Actuarial Liability (1) - (2e).



SECTION 4 – SYSTEM LIABILITIES

**TABLE 8
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
ACTUARIAL BALANCE SHEET
AS OF DECEMBER 31, 2022**

	State	School	State/School	Local
<u>ASSETS</u>				
Actuarial Value of Assets	\$ 4,022,092,181	\$ 14,007,032,038	\$ 18,029,124,219	\$ 5,066,712,964
Present Value of Future Normal Costs	630,032,398	3,287,396,040	3,917,428,438	1,202,057,853
Unfunded Actuarial Liability	<u>1,226,490,208</u>	<u>5,034,425,018</u>	<u>6,260,915,226</u>	<u>1,952,411,224</u>
Total Net Assets	<u>\$ 5,878,614,787</u>	<u>\$ 22,328,853,096</u>	<u>\$ 28,207,467,883</u>	<u>\$ 8,221,182,041</u>
<u>LIABILITIES</u>				
Present Value of Future Benefits				
Active employees	\$ 2,478,341,492	\$ 11,672,449,689	\$ 14,150,791,181	\$ 4,370,504,739
Inactive Members *	251,255,760	709,394,249	960,650,009	465,547,410
In-pay Members	<u>3,149,017,535</u>	<u>9,947,009,158</u>	<u>13,096,026,693</u>	<u>3,385,129,892</u>
Total Liabilities	<u>\$ 5,878,614,787</u>	<u>\$ 22,328,853,096</u>	<u>\$ 28,207,467,883</u>	<u>\$ 8,221,182,041</u>

*Includes Unclaimed Account Reserves



SECTION 4 – SYSTEM LIABILITIES

TABLE 8 (cont.)
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
ACTUARIAL BALANCE SHEET
AS OF DECEMBER 31, 2022

Table with 5 columns: Description, Total KPERS, KP&F, Judges, Total. Rows include ASSETS (Actuarial Value of Assets, Present Value of Future Normal Costs, Unfunded Actuarial Liability, Total Net Assets) and LIABILITIES (Present Value of Future Benefits: Active employees, Inactive Members, In-pay Members, Total Liabilities).

*Includes Unclaimed Account Reserves



SECTION 4 – SYSTEM LIABILITIES

TABLE 9
ANALYSIS OF ACTUARIAL GAIN OR LOSS

Table with 5 columns: Description, State, School, State/School, Local. Rows include: 1. Expected Actuarial Liability (a-f), 2. Actuarial Liability at 12/31/2022, 3. Actuarial Liability Gain/(Loss) (1f) - (2), 4. Expected Actuarial Value of Assets (a-e), 5. Actuarial Value of Assets as of 12/31/22, 6. Actuarial Value of Assets Gain/(Loss) (5) - (4e), 7. Net Actuarial Gain/(Loss) (3) + (6).



SECTION 4 – SYSTEM LIABILITIES

**TABLE 9 (cont.)
ANALYSIS OF ACTUARIAL GAIN OR LOSS**

	Total KPERS	KP&F	Judges	Total
1. Expected Actuarial Liability				
a. Actuarial liability at 12/31/21	\$ 30,223,549,560	\$ 4,190,420,489	\$ 216,826,355	\$ 34,630,796,404
b. Normal cost during 2022	550,926,143	93,599,146	6,146,305	650,671,594
c. Benefit payments for plan year ending 12/31/22	(1,877,934,348)	(266,154,307)	(15,412,058)	(2,159,500,713)
d. Interest on (a), (b), and (c)	2,089,597,253	290,723,526	15,077,787	2,395,398,566
e. Benefit Provision Changes	0	25,456,744	0	25,456,744
f. Expected actuarial liability as of 12/31/22	\$ 30,986,138,608	\$ 4,334,045,598	\$ 222,638,389	\$ 35,542,822,595
2. Actuarial Liability at 12/31/2022	\$ 31,309,163,633	\$ 4,480,287,951	\$ 226,681,352	\$ 36,016,132,936
3. Actuarial Liability Gain/(Loss) (1f) - (2)	\$ (323,025,025)	\$ (146,242,353)	\$ (4,042,963)	\$ (473,310,341)
4. Expected Actuarial Value of Assets				
a. Actuarial value of assets at 12/31/21	\$ 21,547,371,677	\$ 3,049,754,807	\$ 206,666,420	\$ 24,803,792,904
b. Contributions for plan year ending 12/31/22	2,220,453,715	190,918,899	7,679,406	2,419,052,020
c. Benefit payments and expenses for plan year ending 12/31/22	(1,894,171,841)	(268,458,589)	(15,567,488)	(2,178,197,918)
d. Interest on (a), (b) and (c)	1,519,542,738	210,814,847	14,195,236	1,744,552,821
e. Expected actuarial value of assets as of 12/31/22	\$ 23,393,196,289	\$ 3,183,029,964	\$ 212,973,574	\$ 26,789,199,827
5. Actuarial Value of Assets as of 12/31/22	\$ 23,095,837,183	\$ 3,143,459,342	\$ 210,315,792	\$ 26,449,612,317
6. Actuarial Value of Assets Gain/(Loss) (5) - (4e)	\$ (297,359,106)	\$ (39,570,622)	\$ (2,657,782)	\$ (339,587,510)
7. Net Actuarial Gain/(Loss) (3) + (6)	\$ (620,384,131)	\$ (185,812,975)	\$ (6,700,745)	\$ (812,897,851)



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SECTION 5 – EMPLOYER CONTRIBUTIONS

The previous two sections were devoted to a discussion of the assets and liabilities of the System. A comparison of Tables 4 and 7 indicates that current assets fall short of meeting the present value of future benefits (total liability). This is expected in all but a fully closed fund, where no further contributions are anticipated.

In an active system, there will almost always be a difference between the actuarial value of assets and total liabilities. This deficiency has to be made up by future contributions and investment returns. An actuarial valuation sets out a schedule of future contributions that will deal with this deficiency in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the contributions required to meet the difference between current assets and current liabilities are allocated each year between two elements: (1) the normal cost and (2) the payment on the unfunded actuarial liability.

The term “fully funded” is often applied to a system in which contributions at the normal cost rate are sufficient to pay for the benefits of existing employees as well as for those of new employees. More often than not, systems are not fully funded, either because of past benefit improvements that have not been completely funded and/or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated. Under these circumstances, an unfunded actuarial liability exists.

Description of Rate Components

The actuarial cost method for all three systems is the traditional Entry Age Normal (EAN) – level percent of pay cost method. Under the EAN cost method, the actuarial present value of each member’s projected benefits allocates on a level basis over the member’s compensation between the entry age of the member and the assumed exit ages. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial liability. The unfunded actuarial liability represents the difference between the actuarial liability and the actuarial value of assets as of the valuation date. The unfunded actuarial liability is calculated each year and reflects experience gains/losses.

The contribution rates based on the December 31, 2022 actuarial valuation will be used to determine employer contribution rates to the Kansas Public Employees Retirement System for fiscal years beginning in 2025 (July 1, 2025 to June 30, 2026 for the State and calendar year 2025 for Local employers).

KPERS

The law provides for the calculation of separate employer contribution rates for three groups: State, School and Local (for all other covered employers). Over the past ten years, numerous changes to KPERS funding have occurred which resulted in additional contributions to the School group. Please see the outline of legislative history contained in Section 6 of this report for a detailed discussion.

The total unfunded actuarial liability of the State/School and Local groups as of December 31, 2021 was reset and amortized over a closed 17 year period. In subsequent valuations, new bases due to actuarial gain/losses will be established and amortized over closed 20-year periods.

The unfunded actuarial liability is amortized as a level-percent of payroll using a payroll growth assumption of 3.0%. Therefore, the dollar amount of the annual amortization payment will increase 3.0%



SECTION 5 – EMPLOYER CONTRIBUTIONS

each year. As a result, if all assumptions are met in the future (including a 3.0% payroll growth), the amortization payment will remain level as a percentage of total payroll. If payroll increases less/more than 3.0% each year, the amortization payment will increase/decrease as a percentage of total payroll.

The actuarial contribution rate for KPERS is comprised of the normal cost rate (including administrative expenses) and a contribution toward the unfunded actuarial liability. Local employers who affiliate with KPERS for prior service on or after January 1, 1999 pay an additional employer contribution to finance the unfunded actuarial liability as of their affiliation date.

KP&F

The actuarially determined contribution requirements for employers in KP&F are comprised of:

- (a) a "uniform" rate, determined separately for State and Local employers, which includes the normal cost (and administrative expenses) and an unfunded actuarial liability payment for the entire group, plus
- (b) any payment required to amortize the unfunded past service liability or any 15% excess benefit liability, which is determined separately for each participating employer.

For employers who enter KP&F for future service only, the total cost is the uniform contribution rate.

The total amount of the unfunded actuarial liability as of December 31, 2021 was reset and amortized over 22 years. In subsequent valuations, new bases due to actuarial gain/losses will be established and amortized over closed 20-year periods.

The unfunded actuarial liability is amortized as a level-percent of payroll using a payroll growth assumption of 3.0%. Therefore, the dollar amount of the annual amortization payment will increase 3.0% each year. As a result, if all assumptions are met in the future (including a 3.0% payroll growth), the amortization payment will remain level as a percentage of total payroll. If payroll increases less/more than 3.0% each year, the amortization payment will increase/decrease as a percentage of total payroll.

Judges

The actuarial contribution rate for the Judges is composed of the normal cost rate (including expenses) and a contribution toward the unfunded actuarial liability. The total amount of the unfunded actuarial liability as of December 31, 2021 is amortized over a closed 20-year period. In subsequent valuations, new bases due to actuarial gain/losses will be established and amortized over closed 20-year periods. The unfunded actuarial liability is amortized with payments determined as level-dollar amounts.

Contribution Rate Summary

The normal cost rate for each group is shown in Table 10. The unfunded actuarial liability for each group is shown in Table 11. Tables 12A and 12B project each group's unfunded actuarial liability to the beginning of the fiscal year in which the contribution rates from the December 31, 2022 actuarial valuation will be applied. Tables 13A-F develop the actuarial contribution rates for the unfunded actuarial liability using the projected unfunded actuarial liability amounts from Tables 12A and 12B. The total actuarial contribution rates determined as of December 31, 2022 are presented in Table 14. The contribution rates for local employers who affiliated with KPERS for prior service and are amortizing the payment of that liability over a period of no more than 15 years are shown in Tables 15A and 15B. Table 16 shows the KP&F individual employer contribution rates for fiscal years beginning in 2024 and 2025



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while Tables 17 and 18 show the calculation of the additional contribution rate due to amortization of prior service unfunded actuarial liability for fiscal years beginning in 2025.

The rates shown in this report, which are based on the actuarial assumptions and cost methods described in Appendix C, are applicable for determining employer contribution rates for fiscal years commencing in 2025.



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**TABLE 10
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
NORMAL COST RATE
AS OF DECEMBER 31, 2022**

	State	School	State/School	Local
1. Normal Cost Rate				
a. Retirement Benefits	5.15%	6.60%	6.31%	4.97%
b. Pre-Retirement Death Benefits	0.17%	0.09%	0.11%	0.18%
c. Termination Benefits	2.54%	1.91%	2.03%	2.57%
d. Disability Benefits	0.29%	0.15%	0.18%	0.17%
e. Administrative Expenses	0.18%	0.18%	0.18%	0.18%
f. Total	<u>8.33%</u>	<u>8.93%</u>	<u>8.81%</u>	<u>8.07%</u>



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**TABLE 10 (cont.)
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
NORMAL COST RATE
AS OF DECEMBER 31, 2022**

	KP&F	Judges
1. Normal Cost Rate		
a. Retirement Benefits	12.81%	22.88%
b. Pre-Retirement Death Benefits	0.38%	0.36%
c. Termination Benefits	1.61%	0.00%
d. Disability Benefits	2.58%	0.00%
e. Administrative Expenses	0.18%	0.18%
f. Total	<hr/> 17.56%	<hr/> 23.42%



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**TABLE 11
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
UNFUNDED ACTUARIAL LIABILITY (UAL)
AS OF DECEMBER 31, 2022**

	State	School	State/School	Local	KP&F	Judges
1. Actuarial Liability	\$ 5,248,582,389	\$ 19,041,457,056	\$ 24,290,039,445	\$ 7,019,124,188	\$ 4,480,287,951	\$ 226,681,352
2. Actuarial Value of Assets	<u>4,022,092,181</u>	<u>14,007,032,038</u>	<u>18,029,124,219</u>	<u>5,066,712,964</u>	<u>3,143,459,342</u>	<u>210,315,792</u>
3. Unfunded Actuarial Liability (UAL)	1,226,490,208	5,034,425,018	6,260,915,226	1,952,411,224	1,336,828,609	16,365,560
a. Other local employer UAL*	0	0	0	1,654,330	799,167	0
b. Remaining UAL	1,226,490,208	5,034,425,018	6,260,915,226	1,950,756,894	1,336,029,442	16,365,560

*These amounts are paid directly by the employer and do not enter into the overall unfunded actuarial liability and amortization calculations.



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**TABLE 12A
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
PROJECTED UNFUNDED ACTUARIAL LIABILITY AT JUNE 30, 2025
EMPLOYERS CONTRIBUTING ON JUNE 30 FISCAL YEARS**

	State	School	State/School	Judges
1. Unfunded Actuarial Liability at December 31, 2022	\$1,226,490,208	\$5,034,425,018	\$6,260,915,226	\$16,365,560
2. FY 2023 Expected Contribution Rate*	16.08%	19.11%	19.11%	23.40%
3. Normal Cost Rate	<u>8.33%</u>	<u>8.93%</u>	<u>8.81%</u>	<u>23.42%</u>
4. Contribution Rate Applied to UAL for 2023 [(2) – (3)]	7.75%	10.18%	10.30%	(0.02%)
5. Expected Payroll for January to June, 2023	534,163,024	2,149,808,203	2,683,971,227	16,425,441
6. Statutory Excess State Contributions	0	16,185,140	0	N/A
7. Expected UAL Contribution [(4) * (5)] + (6)	41,397,634	235,035,615	276,449,036	(3,285)
8. Projected UAL at June 30, 2023	\$1,226,587,520	\$4,968,604,756	\$6,195,176,219	\$16,932,008
9. FY 2024 Expected Contribution Rate	15.38%	18.57%	18.57%	22.11%
10. Normal Cost Rate	<u>8.33%</u>	<u>8.93%</u>	<u>8.81%</u>	<u>23.42%</u>
11. Contribution Rate Applied to UAL for 2024 [(9) – (10)]	7.05%	9.64%	9.76%	(1.31%)
12. Expected Payroll for FY 2024	1,084,350,938	4,364,110,652	5,448,461,590	32,850,882
13. Statutory Excess State Contributions	0	34,590,795	0	N/A
14. Expected UAL Contribution [(11) * (12)] + (13)	76,446,741	455,291,062	531,769,851	(430,347)
15. Projected UAL at June 30, 2024	\$1,233,371,523	\$4,845,450,352	\$6,078,771,543	\$18,562,403
16. FY 2025 Expected Contribution Rate	16.66%	17.42%	17.42%	26.97%
17. Normal Cost Rate	<u>8.33%</u>	<u>8.93%</u>	<u>8.81%</u>	<u>23.42%</u>
18. Contribution Rate Applied to UAL for 2025 [(16) – (17)]	8.33%	8.49%	8.61%	3.55%
19. Expected Payroll for FY 2025	1,116,881,466	4,495,033,972	5,611,915,438	32,850,882
20. Statutory Excess State Contributions	0	8,488,299	0	N/A
21. Expected UAL Contribution [(18) * (19)] + (20)	\$93,036,226	\$390,116,683	\$483,185,919	\$1,166,206
22. Projected UAL at June 30, 2025	\$1,223,470,109	\$4,781,092,042	\$6,004,474,150	\$18,655,438

Note: The projected unfunded actuarial liability amount for State/School may not equal the sum of State and School due to rounding. The excess of the State/School statutory contribution rate over the actuarial required contribution rate for the State alone is allocated to the School group.

* The 2021 Legislature passed Senate Bill 159 which revised the State/School employer contribution rate from 13.86% to 13.11% for FY 2023.



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TABLE 12B
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
PROJECTED UNFUNDED ACTUARIAL LIABILITY AT DECEMBER 31, 2024
EMPLOYERS CONTRIBUTING ON DECEMBER 31 FISCAL YEARS

Table with 3 columns: Description, KPERS - Local, and KP&F. Rows include: 1. Unfunded Actuarial Liability at December 31, 2022; 2. FY 2023 Expected Contribution Rate; 3. Normal Cost Rate; 4. Contribution Rate Applied to UAL for 2023 [(2) - (3)]; 5. Expected Payroll for 2023; 6. Expected UAL Contribution (4) * (5); 7. Projected UAL at December 31, 2023; 8. FY 2024 Expected Contribution Rate; 9. Normal Cost Rate; 10. Contribution Rate Applied to UAL for 2024 [(8) - (9)]; 11. Expected Payroll for FY 2024; 12. Expected UAL Contribution (10) * (11); 13. Projected UAL at December 31, 2024.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 13A
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
AMORTIZATION OF THE UNFUNDED ACTUARIAL LIABILITY
STATE

Amortization Base	Original Amount	Remaining Payments	Projected June 30, 2025 Balance	Annual Payment*
2021 UAL Balance**	\$ 1,085,728,314	16	\$ 1,070,635,300	\$ 90,705,807
2022 Experience	152,834,809	20	152,834,809	11,082,712
Total			\$ 1,223,470,109	\$ 101,788,519

* Payment amount reflects mid-year timing.

- 1. Total UAL Amortization Payments \$ 101,788,519
- 2. Projected Payroll for FY 2026 \$ 1,150,387,910
- 3. UAL Amortization Payment Rate 8.85%
(1) / (2)

** The total UAL balance as of 12/31/2021 was re-amortized over a closed, 17-year period. This change was made in conjunction with the change in investment return assumption.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 13B
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
AMORTIZATION OF THE UNFUNDED ACTUARIAL LIABILITY
SCHOOL

Amortization Base	Original Amount	Remaining Payments	Projected June 30, 2025 Balance	Annual Payment*
2021 UAL Balance**	\$ 4,757,383,232	16	\$ 4,691,249,513	\$ 397,449,599
2022 Experience	89,842,529	20	89,842,529	6,514,870
Total			\$ 4,781,092,042	\$ 403,964,469

* Payment amount reflects mid-year timing.

- 1. Total UAL Amortization Payments \$ 403,964,469
- 2. Projected Payroll for FY 2026 \$ 4,629,884,991
- 3. UAL Amortization Payment Rate 8.73%
(1) / (2)

** The total UAL balance as of 12/31/2021 was re-amortized over a closed, 17-year period. This change was made in conjunction with the change in investment return assumption.



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TABLE 13C
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
AMORTIZATION OF THE UNFUNDED ACTUARIAL LIABILITY
STATE/SCHOOL

Amortization Base	Original Amount	Remaining Payments	Projected June 30, 2025 Balance	Annual Payment*
2021 UAL Balance**	\$ 5,843,453,369	16	\$ 5,762,221,884	\$ 488,183,963
2022 Experience	242,252,266	20	242,252,266	17,566,758
Total			\$ 6,004,474,150	\$ 505,750,721

* Payment amount reflects mid-year timing.

Note: Projected UAL contributions and amounts for State/School may not equal the sum of State and School due to rounding.

- 1. Total UAL Amortization Payments \$ 505,750,721
- 2. Projected Payroll for FY 2026 \$ 5,780,272,901
- 3. UAL Amortization Payment Rate 8.75%
(1) / (2)

** The total UAL balance as of 12/31/2021 was re-amortized over a closed, 17-year period. This change was made in conjunction with the change in investment return assumption.



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TABLE 13D
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
AMORTIZATION OF THE UNFUNDED ACTUARIAL LIABILITY

LOCAL

Amortization Base	Original Amount	Remaining Payments	Projected December 31, 2024 Balance	Annual Payment*
2021 UAL Balance**	\$ 1,770,232,584	16	\$ 1,745,624,084	\$ 147,891,855
2022 Experience	190,407,301	20	190,407,301	13,807,256
Total			\$ 1,936,031,385	\$ 161,699,111

* Payment amount reflects mid-year timing.

1. Total UAL Amortization Payments	\$ 161,699,111
2. Projected Payroll for FY 2025	\$ 2,146,286,068
3. UAL Amortization Payment Rate (1) / (2)	7.53%

** The total UAL balance as of 12/31/2021 was re-amortized over a closed, 17-year period. This change was made in conjunction with the change in investment return assumption.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 13E
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
AMORTIZATION OF THE UNFUNDED ACTUARIAL LIABILITY

KP&F

Amortization Base	Original Amount	Remaining Payments	Projected December 31, 2024 Balance	Annual Payment*
2021 UAL Balance**	\$ 1,146,942,441	21	\$ 1,146,388,112	\$ 80,495,806
2022 Experience	179,151,354	20	179,151,354	12,991,038
2022 Benefit Change	30,663,277	20	30,663,277	2,223,527
Total			\$ 1,356,202,743	\$ 95,710,371

* Payment amount reflects mid-year timing.

- 1. Total UAL Amortization Payments \$ 95,710,371
- 2. Projected Payroll for FY 2025 \$ 673,906,354
- 3. UAL Amortization Payment Rate (1) / (2) 14.20%

** The total UAL balance as of 12/31/2021 was re-amortized over a closed, 22-year period. This change was made in conjunction with the change in investment return assumption.



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 13F
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
AMORTIZATION OF THE UNFUNDED ACTUARIAL LIABILITY
JUDGES

Amortization Base	Original Amount	Remaining Payments	Projected June 30, 2025 Balance	Annual Payment*
2021 UAL Balance**	\$ 12,222,716	19	\$ 11,924,568	\$ 1,115,361
2022 Experience	6,730,870	20	6,730,870	614,213
Total			\$ 18,655,438	\$ 1,729,574

* Payment amount reflects mid-year timing.

1. Total UAL Amortization Payments	\$ 1,729,574
2. Projected Payroll for 2023	\$ 32,850,882
3. UAL Amortization Payment Rate (1) / (2)	5.26%

** The total UAL balance as of 12/31/2021 was re-amortized over a closed, 20-year period. This change was made in conjunction with the change in investment return assumption.



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 14
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
ACTUARIAL EMPLOYER CONTRIBUTION RATES
FISCAL YEAR COMMENCING IN 2025**

	Total Normal Cost	Employee Normal Cost	Employer Normal Cost	Unfunded Actuarial Liability	Total Employer Contribution*
State	8.33%	6.00%	2.33%	8.85%	11.18%
Correctional Employees - Age 55	9.23%	6.00%	3.23%	8.85%	12.08%
Correctional Employees - Age 60	9.67%	6.00%	3.67%	8.85%	12.52%
School	8.93%	6.00%	2.93%	8.73%	11.66%
State/School	8.81%	6.00%	2.81%	8.75%	11.56%
Local	8.07%	6.00%	2.07%	7.53%	9.60%
KP&F Uniform Contribution Rate					
State **	17.56%	7.15%	10.41%	14.20%	24.61%
Local **	17.56%	7.15%	10.41%	14.20%	24.61%
Judges	23.42%	5.62%	17.80%	5.26%	23.06%

* Does not include the contribution to the Death and Disability Program.

** The total contribution rate for each employer is equal to the appropriate uniform contribution rate (state or local) plus an additional rate, if applicable, required to amortize the unfunded past service liability, determined separately for each employer. (See Table 15)



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**TABLE 15A
LOCAL KPERS AFFILIATION COST FACTORS
FOR FISCAL YEAR BEGINNING IN 2025**

Employer	Year Affiliated	Projected 2025 Annual Payroll	Projected 1/1/2025 Unfunded Actuarial Liability	Payment on 1/1/2025 Unfunded Liability	Payment on Unfunded Liability as % of Payroll	Total Rate for Years Commencing¹ in 2025
Bourbon County RWD#2	1999	\$319,260	\$97,915	\$12,777	4.00%	13.60%
City of Burden	1999	99,663	13,938	1,812	1.82%	11.42%
City of Longton	1999	78,718	16,880	2,205	2.80%	12.40%
St. Francis Housing Authority	1999	56,127	7,040	920	1.64%	11.24%
Towanda Township	1999	58,492	8,044	1,042	1.78%	11.38%
Bucklin Public Library	2000	16,064	12,722	1,454	9.05%	18.65%
City of Blue Mound	2000	85,777	2,642	320	0.37%	9.97%
City of Linn Valley	2000	169,654	866	115	0.07%	9.67%
Elkhart Cemetery District	2000	35,085	1,510	208	0.59%	10.19%
Ellis Public Library	2000	37,121	4,480	583	1.57%	11.17%
Hamilton County Library	2000	121,470	11,784	1,537	1.27%	10.87%
Hays Housing Authority	2000	48,341	1,453	210	0.43%	10.03%
Haysville Community Library	2000	214,487	178,140	23,202	10.82%	20.42%
Kansas Workers' Risk Coop for Counties	2000	409,687	45,665	5,874	1.43%	11.03%
City of Arcadia	2002	119,594	14,774	1,804	1.51%	11.11%
Lindsborg Community Library	2002	33,872	3,415	401	1.18%	10.78%
Basehor Community Library	2003	471,020	52,260	6,397	1.36%	10.96%
City of Gypsum	2003	90,734	4,427	545	0.60%	10.20%
City of Linwood	2003	135,495	2,199	271	0.20%	9.80%
City of Bentley	2004	136,693	30,840	4,551	3.33%	12.93%
Mulvane Public Library	2004	228,930	11,049	1,632	0.71%	10.31%
The Center for Counseling and Consultation	2004	3,341,574	929,104	137,213	4.11%	13.71%
City of Denison	2005	36,420	16,289	2,406	6.61%	16.21%
Doniphan County RFD #2	2005	93,737	7,394	1,089	1.16%	10.76%
Stanton County Recreation Commission	2005	38,151	20,080	2,962	7.76%	17.36%
Total		\$6,476,166	\$1,494,910	\$211,530		

¹ Basic local employer contribution rates excluding Death and Disability contribution:

FY 2024: 9.26%

FY 2025: 9.60%



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**TABLE 15B
LOCAL KPERS AFFILIATION COST FACTORS - AFFILIATION AFTER 1/1/06
FOR FISCAL YEAR BEGINNING IN 2025**

Effective for affiliations on or after January 1, 2006, the payment on the unfunded actuarial liability due to affiliation for prior service is amortized as a fixed level dollar payment. No adjustment is made to the employer contribution rate for these payments.

Employer	Year Affiliated	Unfunded Actuarial Liability on Jan 1 Following Affiliation	Annual Payment Due Jan 1, 2025 to Amortize Unfunded Liability	Final Payment Year
City of Vermillion	2006	3,950	338	2032
Stockton Recreation Commission	2010	1,245	113	2032



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 16
KP&F
EMPLOYER CONTRIBUTION RATES FOR FISCAL YEARS
COMMENCING IN CALENDAR YEARS 2024 AND 2025**

Employer	Total Rate for Fiscal Year Commencing in 2024	Recommended Total Rate for Fiscal Year Commencing in 2025
Anderson County	23.10 %	24.61 %
Atchinson County	23.10	24.61
Board of Regents Campus Police	23.10	24.61
Cherokee County	23.10	24.61
City of Abilene	23.10	24.61
City of Andover	23.10	24.61
City of Arkansas City	23.10	24.61
City of Atchison	23.10	24.61
City of Augusta	23.10	24.61
City of Baldwin City	23.10	24.61
City of Basehor	23.10	24.61
City of Belleville	23.10	24.61
City of Bonner Springs	23.10	24.61
City of Burden	23.10	24.61
City of Chanute	23.10	24.61
City of Chapman	23.10	24.61
City of Cimarron	23.10	24.61
City of Coffeyville	23.10	24.61
City of Concordia	23.10	24.61
City of Derby	23.10	24.61
City of Dodge City	28.24	29.46
City of Edwardsville Firemen	26.15	27.71
City of Edwardsville Police	24.64	25.95
City of El Dorado	23.10	24.61
City of Emporia	23.10	24.61
City of Erie	23.10	24.61
City of Eudora	23.10	24.61
City of Fairway	23.10	24.61
City of Fort Scott	23.10	24.61
City of Garden City	23.10	24.61
City of Gardner Public Safety Officers	23.10	24.61
City of Garnett	23.10	24.61
City of Girard	23.10	24.61
City of Goddard	23.10	24.61
City of Hays	23.10	24.61
City of Herington	23.10	24.61
City of Hutchinson	23.10	24.61



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 16 (cont.)
KP&F
EMPLOYER CONTRIBUTION RATES FOR FISCAL YEARS
COMMENCING IN CALENDAR YEARS 2024 AND 2025**

Employer	Total Rate for Fiscal Year Commencing in 2024	Recommended Total Rate for Fiscal Year Commencing in 2025
City of Junction City	23.10 %	24.61 %
City of Lake Quivira	23.10	24.61
City of Lansing	23.10	24.61
City of Lawrence	23.10	24.61
City of Leavenworth	23.10	24.61
City of Leawood	23.10	24.61
City of Lenexa	23.10	24.61
City of Liberal Police & Firemen	23.10	24.61
City of Linn Valley	23.10	24.61
City of Louisburg	23.10	24.61
City of Manhattan	23.10	24.61
City of Marion	23.10	24.61
City of McPherson	23.10	24.61
City of Merriam	23.10	24.61
City of Minneola	23.10	24.61
City of Mission	23.10	24.61
City of Moundridge	23.10	24.61
City of Newton	23.10	24.61
City of Newton EMTs	23.10	24.61
City of Olathe	23.10	24.61
City of Oswego	23.10	24.61
City of Ottawa	23.10	24.61
City of Overbrook	23.10	24.61
City of Overland Park	23.10	24.61
City of Paola	23.10	24.61
City of Park City	23.10	24.61
City of Parsons	23.10	24.61
City of Pittsburg	23.10	24.61
City of Roeland Park	23.10	24.61
City of Rossville	23.10	24.61
City of Salina	23.10	24.61
City of Scott City	23.10	24.61
City of Shawnee	23.10	24.61
City of Spring Hill	23.10	24.61
City of Topeka	23.10	24.61
City of Valley Center	23.10	24.61
City of Victoria	23.10	24.61



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 16 (cont.)
KP&F
EMPLOYER CONTRIBUTION RATES FOR FISCAL YEARS
COMMENCING IN CALENDAR YEARS 2024 AND 2025**

Employer	Total Rate for Fiscal Year Commencing in 2024	Recommended Total Rate for Fiscal Year Commencing in 2025
City of Wakefield	23.10 %	24.61 %
City of Wellington	23.10	24.61
City of Westwood	23.10	24.61
City of Winfield	23.10	24.61
City of Winfield (EMS)	23.10	24.61
Clark County	23.10	24.61
Cowley County Sheriff's Dept	23.10	24.61
Crawford County	23.10	24.61
Dickinson County	23.10	24.61
Douglas County Law Enforcement	23.10	24.61
Ellis County	23.10	24.61
Fairmount Township Fire District	23.10	24.61
Ford County	23.10	24.61
Franklin County Sheriff's Dept	23.10	24.61
Gray County Sheriff's Dept.	23.10	24.61
Harvey County Sheriff's Dept.	23.10	24.61
Haskell County	23.10	24.61
Jefferson County	23.10	24.61
Johnson Co. Fire District No. 2	23.10	24.61
Johnson County Fire Dept.	23.10	24.61
Johnson County Fire No. 1	23.10	24.61
Johnson County Fire No. 2	23.10	24.61
Johnson County Park Commission	23.10	24.61
Johnson County Sheriff's Dept.	23.10	24.61
Kansas Bureau of Investigation	23.10	24.61
Kansas Highway Patrol	23.10	24.61
Kearny County	23.10	24.61
Labette County Sheriff's Dept.	24.63	26.16
Leavenworth County	23.10	24.61
Leavenworth County (EMS)	23.10	24.61
Leavenworth County Fire District #1	23.10	24.61
McPherson County Rural Fire District #9	23.10	24.61
Miami County	23.10	24.61
Neosho County	23.10	24.61
Northwest Consolidated Fire District	23.10	24.61
Ottawa County	23.10	24.61
Pottawatomie County	23.10	24.61



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 16 (cont.)
KP&F
EMPLOYER CONTRIBUTION RATES FOR FISCAL YEARS
COMMENCING IN CALENDAR YEARS 2024 AND 2025**

Employer	Total Rate for Fiscal Year Commencing in 2024	Recommended Total Rate for Fiscal Year Commencing in 2025
Pottawatomie County (EMT)	23.10 %	24.61 %
Reno County Sheriff's Dept.	23.10	24.61
Republic County	23.10	24.61
Riley County	23.10	24.61
Riley County Law Enforcement	23.10	24.61
Russell County	23.10	24.61
Sedgwick County EMT's	23.10	24.61
Sedgwick County Fire No. 1	23.10	24.61
Sedgwick County Sheriff's Dept.	23.10	24.61
Seward County	23.10	24.61
Shawnee County Sheriff's Dept.	23.10	24.61
Shawnee Heights Fire District	23.10	24.61
Soldier Township	23.10	24.61
State Fire Marshall	23.10	24.61
Sumner County Sheriff's Dept.	23.10	24.61
Unified Gov't of Wyandotte County	23.10	24.61



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 17A
KP&F EMPLOYER ADDITIONAL CONTRIBUTION RATES
PRIOR SERVICE LIABILITY
FOR FISCAL YEARS BEGINNING IN 2025**

Employer		1/1/2023 Unfunded Prior Service Liability		Payment on Unfunded Liability
City of Dodge City	\$	204,900	\$	212,938
City of Edwardsville Firemen		281,649		37,963
City of Edwardsville Police		197,002		18,952
Labette County Sheriff's Dept.		<u>115,616</u>		<u>16,582</u>
Total	\$	799,167	\$	286,435



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 17B
KP&F EMPLOYER ADDITIONAL CONTRIBUTION RATES
PRIOR SERVICE LIABILITY - AFFILIATION AFTER 1/1/06
FOR FISCAL YEAR BEGINNING IN 2025**

Effective for affiliations on or after January 1, 2006, the payment on the unfunded actuarial liability due to affiliation for prior service is amortized as a fixed level dollar payment. No adjustment is made to the employer contribution rate for these payments.

Employer	Year Affiliated	Unfunded Actuarial Liability on Jan 1 Following Affiliation	Annual Payment Due Jan 1, 2024 to Amortize Unfunded Liability	Final Payment Year
None				

Note: Only employers with remaining obligations as of the valuation date are shown.



SECTION 5 – EMPLOYER CONTRIBUTIONS

**TABLE 18
KP&F EMPLOYER ADDITIONAL CONTRIBUTION RATES
FOR FISCAL YEARS BEGINNING IN 2025**

Employer	Number of Employees	Total Estimated 2025 Payroll	Payment on Unfunded Liability (Table 17A)	As Percent of Payroll
City of Dodge City	66	4,387,942	\$212,938	4.85 %
City of Edwardsville Firemen	15	1,223,941	37,963	3.10
City of Edwardsville Police	18	1,415,643	18,952	1.34
Lafayette County Sheriff's Dept.	<u>18</u>	<u>1,072,487</u>	<u>16,582</u>	1.55
Total	117	\$8,100,013	\$286,435	



SECTION 6

HISTORICAL FUNDING AND OTHER INFORMATION

Legislative History

Over the last two decades, a comprehensive plan has been developed to address the long-term funding of KPERS and significant changes have occurred. HB 2014, which was passed by the 2003 Legislature, increased the statutory cap on the State/School employer contribution rate from 0.20% to 0.40% in FY 2006, 0.50% in FY 2007 and 0.60% in FY 2008 and beyond. It also authorized the issuance of up to \$500 million in pension obligation bonds (POBs). The POBs were sold and proceeds of \$440.2 million were received on March 10, 2004. The debt service payments on the bonds are paid by the State in addition to the regular KPERS employer contribution rate.

The 2004 Legislature passed SB 520, which continued to address issues related to the long-term funding of the System. It gave the KPERS Board of Trustees the authority to establish the actuarial cost method and amortization method/period. With this authority, the Board changed both the actuarial cost method and the asset valuation method with the December 31, 2003 actuarial valuation. SB 520 also increased the statutory cap for Local employers from 0.15% to 0.40% in FY 2006, 0.50% in FY 2007 and 0.60% in FY 2008 and beyond.

The 2007 Legislature passed SB 362 which created a new benefit structure for members first employed on or after July 1, 2009 (KPERS 2). The change was made partially due to long-term funding considerations, but also in response to demographic changes in the membership.

The 2011 Legislature passed Senate Substitute for House Bill 2194 (Sub HB 2194). The intent of this law was to strengthen KPERS' long-term funding and improve the sustainability of the system. The bill contained significant changes for both KPERS employers and current and future members. In addition, Sub HB 2194 established a 13 member KPERS Study Commission to study alternative plan designs during the last half of 2011 and make a recommendation for KPERS plan design that would provide for the long term sustainability of the System. The Commission report was due to the Legislature by January 6, 2012. Sub HB 2194 required that the report recommendations be voted on by the 2012 Legislature for the other provisions of Senate Substitute for HB 2194 to become effective. The 2012 Legislature did not move the Study Commission recommendation forward, but some of the other provisions were included in the bill that was ultimately passed in 2012, Senate Sub for House Bill 2333.

The 2012 Legislature passed Sub House Bill 2333, affecting new hires, current members and employers. The changes were made to improve KPERS' long-term sustainability. The basic provisions of Sub House Bill 2333, as amended by House Bill 2213 in 2013, included:

- Increased the statutory cap on employer contribution rates to 0.9% in FY 2014, 1.0% in FY 2015, 1.1% in FY 2016 and 1.2% in FY 2017 and beyond.
- Contingent upon IRS approval, established an election by KPERS 1 members between different contribution rate and benefit levels. The legislation provided that, if the IRS rejected or did not take action to approve the election, KPERS 1 members would default to an increase in their employee contributions to 5% of compensation effective January 1, 2014, and 6% effective January 1, 2015, with an increase in the benefit multiplier to 1.85% beginning January 1, 2014, for future years of service only. Subsequently, the IRS issued a private letter ruling stating that the election granted to KPERS 1 members under 2012 HB 2333 was impermissible.



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

- For KPERS 2 members retiring after July 1, 2012, the cost-of-living adjustment (COLA) was eliminated, but members received a 1.85% multiplier for all years of service.
- Created a Cash Balance Plan for new hires beginning January 1, 2015. A cash balance plan is a type of defined benefit plan that includes some elements of a defined contribution plan and shares risk between the employer and employee. Each member has a hypothetical account that is credited with employee contributions, employer pay credits and interest credits. At retirement, the account balance is annuitized to create a guaranteed monthly benefit payable for the member's lifetime. Up to 30% of the account value at retirement may be paid as a lump sum.
- Beginning in FY 2014, provided for the state to make additional contributions to help pay down KPERS' unfunded actuarial liability until the State/School group reaches a funded ratio of at least 80%. The revenue was to come from the Expanded Lottery Act Revenues Fund (ELARF). However, for FY 2014 through 2017, the ELARF funds were appropriated as a partial funding source to meet the statutory contribution requirements for the School group rather than contributed in addition to the statutory contributions. Therefore, no additional funding of the unfunded actuarial liability has occurred. As a result, projections assume there will not be any additional payments to the unfunded actuarial liability from the ELARF funds.
- If the State of Kansas sells surplus real estate, 80% of the proceeds is to be used to pay down KPERS' unfunded actuarial liability until the System reaches an 80% funded ratio. However, 2016 SB 249 suspended this provision with respect to any sales of surplus real estate during FY 2017 (subsequently removed by the 2022 legislature).

The 2014 Legislature passed HB 2533 which made changes to the KPERS 3 benefit structure, generally decreasing the portion of the benefit that is guaranteed, thereby increasing the risk-sharing portion of the benefit. The changes in House Bill 2533 were designed to further improve KPERS long term funding and to better manage investment risk.

The 2015 Legislature passed SB 4 which revised the State/School employer contribution rate from 11.27% to 8.65% for the last half of FY 2015 to correspond with the Governor's allotment. In addition, 2015 SB 228 provided for bonds to be issued to improve the funded status of the State/School group and also reduced the previously certified employer contribution rates for FY 2016 and 2017. The following provisions were included in SB 228:

- Net proceeds of up to \$1.0 billion from bonds issued by the state of Kansas were to be deposited into the KPERS trust fund for the State/School group, subject to certain criteria. The bonds had to be issued at an interest rate no greater than 5.0% and approved by the State Finance Council (approval received July 2, 2015).
- Revised the previously certified State/School employer contribution rate from 12.37% to 10.91% for fiscal year 2016 and from 13.57% to 10.81% for fiscal year 2017. The statutory cap of 1.2% per year still applied to employer contribution rates in fiscal year 2018 and beyond.

The 2015 Legislature also passed House Bill 2095 that contained changes to the working after retirement provisions and implemented a pilot program in KP&F for a Deferred Option Retirement Plan for the Kansas Highway Patrol. Neither of these provisions had a significant impact on the long-term funding of the System.

The 2016 Legislature passed House Sub for SB 168 which revised the rules pertaining to working after retirement. The bill also made technical and clarifying amendments to statutes related to death and disability contributions, KPERS 3 members, and the Deferred Retirement Option Program (DROP) for certain members of KP&F. None of these provisions had an impact on the December 31, 2015 valuation



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

results. The 2016 Legislature also passed House Sub for SB 161 which provided for the delay of up to \$100 million in State and School contributions for fiscal year 2016. House Sub for SB 249 provided that the delayed contributions would be repaid in full, with interest at 8%, by June 30, 2018. The Governor used this allotment authority to delay payments of \$97.4 million for the State/School group and KP&F State contributions during the final quarter of FY 2016. However, S Sub for Sub HB 2052, passed in the 2017 session, provided that the repayment of these contributions would not be paid (subsequent legislation passed by the 2019 Legislature repaid these delayed contributions).

The 2017 Legislature passed several bills that impacted the provisions and funding of KPERS:

- Senate Substitute for Substitute HB 2052 (S Sub for Sub HB 2052) provided that a portion of the contributions for the School group for FY 2017 would be delayed so the total State/School contribution was \$64.13 million less than the scheduled statutory contributions. The delayed employer contributions for fiscal year 2017 are repaid in level-dollar annual installments of \$6.4 million over twenty years beginning in fiscal year 2018. These payments are determined as a contribution rate for School employers to be paid in addition to the statutory State/School contribution rate. Further, S Sub for Sub HB 2052 provided that the repayment of the contribution reduction from FY 2016 with interest (\$115 million), scheduled in FY 2018, would not be paid (subsequent legislation passed by the 2019 Legislature repaid these delayed contributions).
- Senate Substitute for HB 2002 contained KPERS funding provisions for FY 2018 and FY 2019, including the following:
 - FY 2018: The contribution for the State/School group for fiscal year 2018 was made at the scheduled statutory rate of 12.01%. In addition, the first installment of \$6.4 million on the 20-year amortization of the delayed contributions for FY 2017 was included.
 - FY 2019: A portion of the employer contributions for School employers within the State/School group for fiscal year 2019 were delayed so the total employer contribution was \$420 million, including the second installment of \$6.4 million on the delayed contribution for FY 2017. This resulted in an expected delay of \$194 million to be repaid by the School group, as a level dollar amount over 20 years beginning in FY 2020.
 - FY 2020: The current statutory cap of 1.2% per year applied in determining the statutory contribution rate for the State/School group for FY 2020. The certified statutory rate from FY 2019 of 13.21%, without inclusion of the \$6.4 million amortization of the delayed contributions in FY 2017 and \$19.4 million amortization of the delayed contributions in FY 2019, was increased by 1.2%, resulting in a statutory contribution rate for FY 2020 of 14.41%. The current statutory cap of 1.2% per year applies for all subsequent years.
- SB 205 changed the duty-related death benefit for KP&F members to the greater of 50% of Final Average Salary and the member's accrued retirement benefit under the 100% joint and survivor option, payable to the member's spouse. Including any benefits that may be due to child beneficiaries, the total monthly benefits may not exceed 90% of the member's Final Average Salary. Prior to this this bill, the duty-related death benefit for a KP&F member was 50% of Final Average Salary, and the maximum available to the family was 75% of the member's Final Average Salary.
- House Substitute for SB 21 included changes to the working after retirement rules for members who retire on or after January 1, 2018. The key provisions of the bill were to lengthen the waiting period for KPERS members to return to work from 60 days to 180 days for members who



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

retire before attaining age 62, remove the earnings limitation for all retirees, and establish a single employer contribution schedule for all retirees.

The 2018 Legislature passed House Substitute for Senate Bill 109 that provided for the following additional funding to the KPERS School group:

- An additional payment of \$82 million in July 2018 (received by KPERS).
- A contingent additional payment of up to \$56 million to be paid in FY 2018, if actual FY 2018 receipts exceed the consensus revenue estimates (full amount received in June, 2018).
- A contingent additional payment of up to \$56 million to be paid in FY 2019, if actual FY 2019 receipts exceed the consensus revenue estimates (this payment was changed by the 2019 Legislature to a transfer of \$51 million in FY 2020 which was received by KPERS on July 1, 2019).

The 2019 Legislature passed two pieces of legislation that impacted the contributions to KPERS. Senate Bill 9 provided for a transfer of \$115 million from the State General Fund to KPERS in March, 2019. This payment covered the \$97 million in missed KPERS School contributions for FY 2016 plus interest. The additional contribution lowered the State/School actuarial contribution rate by 0.29%. The 2019 Legislature also passed House Substitute for Senate Bill 25. This legislation repealed the actions of the 2018 Legislature which provided for a contingent payment of up to \$56 million in FY 2019, if actual FY 2019 receipts exceeded the consensus revenue estimates. Instead, this legislation directly transferred \$51 million to the KPERS Trust Fund in FY 2020 (received by KPERS on July 1, 2019). The net reduction of \$5 million did not have a significant impact on the valuation results.

The 2021 Legislature passed HB 2405, which provided for bonds to be issued to improve the funded status of the School group. As a result, net proceeds of up to \$500 million from bonds issued by the state of Kansas are to be deposited into the KPERS trust fund for the School group, subject to certain criteria. The bonds must be issued at an interest rate no greater than 4.3% and approved by the State Finance Council. Due to the passage of HB 2405, SB 159, which was the 2021 legislative session's omnibus budget bill, included a provision to reduce the previously certified State/School employer contribution rates from 14.09% to 13.33% for FY 2022 and from 13.86% to 13.11% for FY 2023.

The 2022 legislature passed Senate Bill 421, which provided for additional contributions to KPERS during 2022, totaling \$1.125 billion in four payments. The additional contributions provided in SB 421 are to be deposited into the KPERS trust fund for the School group (two received in May and June of 2022 and two additional contributions to be paid in August and December of 2022). SB 421 reflects the continued efforts of the Kansas Legislature and Governors in recent years to make incremental progress toward a stronger financial position.

The Board utilized re-amortization of the December 31, 2021 unfunded actuarial liability to help mitigate the impact of the assumption change on the employer contribution rates. The amortization periods vary for each system and were selected to meet the funding goals of each system. In subsequent valuations, the amortization policy will revert to the layered amortization methodology with new bases amortized over 20 years. While all of the groups (State/School, Local, KP&F, and Judges) are projected to reach a funded ratio of 100%, the actual funding progress will be heavily dependent on the actual investment experience of the System in future years, the continuation of the current statutory funding policy for the State/School group, and actual contributions at the statutory rate. Any material extension of the amortization periods will delay funding progress by reducing contributions in the short term and increasing them over the long term.



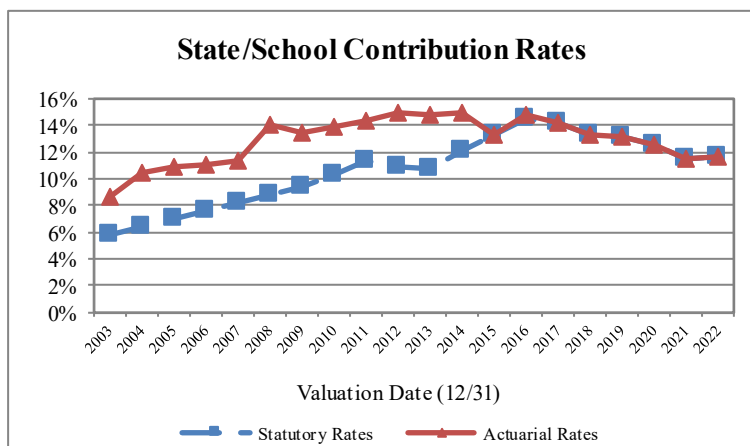
SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

The 2023 legislature passed House Bill 2196, which expanded the KP&F DROP to all KP&F employers as of April 27, 2023. Prior to this change, only members employed by the Kansas Highway Patrol and Kansas Bureau of Investigation were eligible for DROP (about 6% of the KP&F active population).

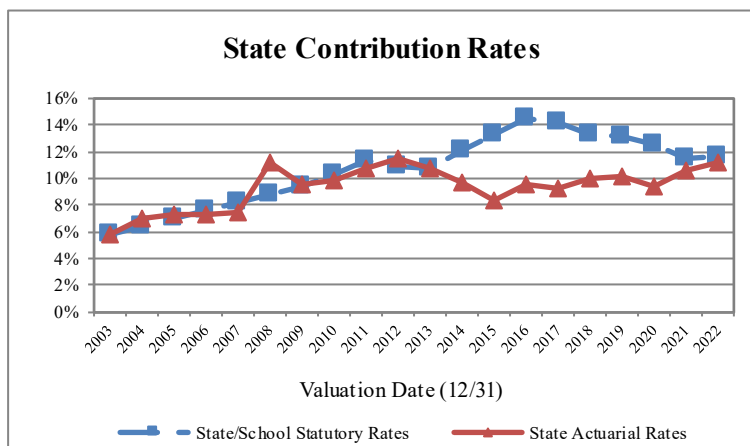
Historical Contribution Rates

Historical contribution rates for each group are shown on the following pages. Please note that prior to the December 31, 2003 valuation, one contribution rate was developed for the State and School together as one group. Legislation passed in 2004 split the actuarial valuations into two separate groups, although the statutory contribution rate has still been determined on a combined basis. By statute, any excess of the statutory contribution over the actuarial required contribution for the State is allocated to the School group.

Significant changes to funding methods occurred in 2003, and the System received bond proceeds in 2004, 2015 and 2021. Also, additional contributions of \$1.125 billion were contributed during 2022 for the School group. Actuarial assumptions were changed in the 2004, 2007, 2010, 2013, 2016, 2019 and 2021 valuations. These changes impact the comparability of contribution rates between various valuation dates.



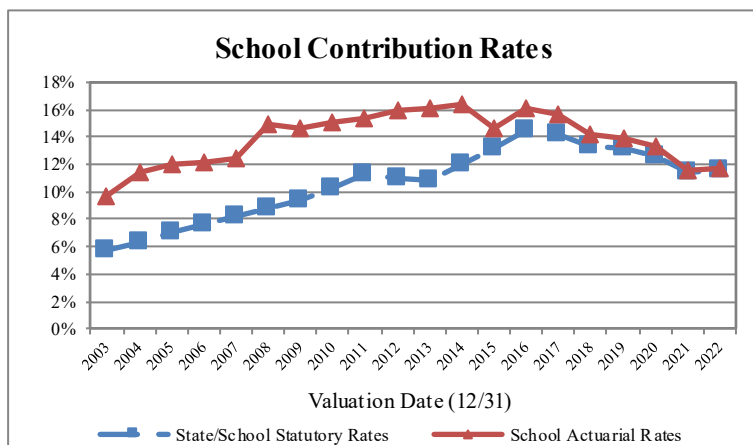
Numerous factors have contributed to the increase in the ARC rate for the State/School group over much of this period including investment experience, changes in actuarial assumptions, and contributions significantly below the actuarial rate. Additional contributions made to the School group during 2022 significantly helped to offset the negative liability and investment experience during 2022, so that the ARC rate increased only slightly.



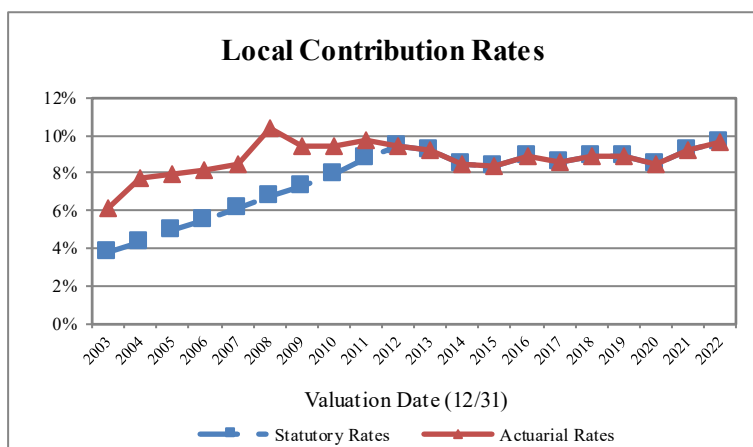
The split of the State group into a separate group with the 2003 valuation, coupled with the bond issue, lowered the State ARC rate. The State reached the full ARC rate in the 2010 valuation and has remained at ARC except for the recertification of the statutory contribution rate for FY 2017 from 12.37% to 10.91%. In this valuation, the State's ARC rate increased to 11.18%, due to negative liability and investment experience during 2022.



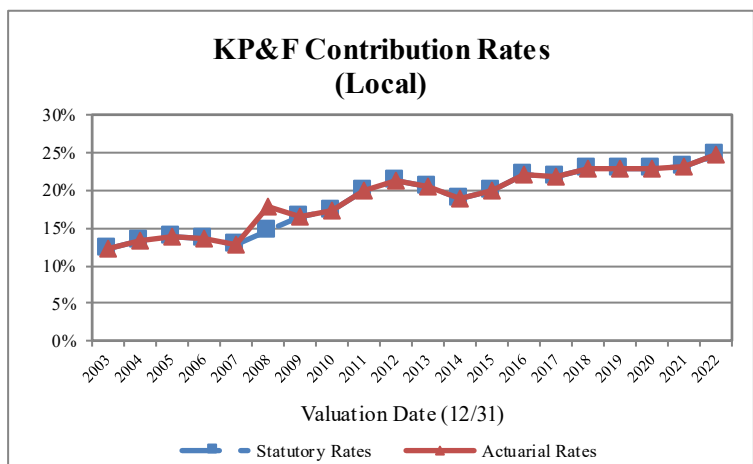
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Due to investment experience, changes in actuarial assumptions, and the magnitude of the difference between the actuarial and statutory contribution rates, the ARC rate increased during the early part of this period. Increases to the statutory contribution rate, contribution sharing from the State group and additional contributions have helped to stabilize the ARC rate.



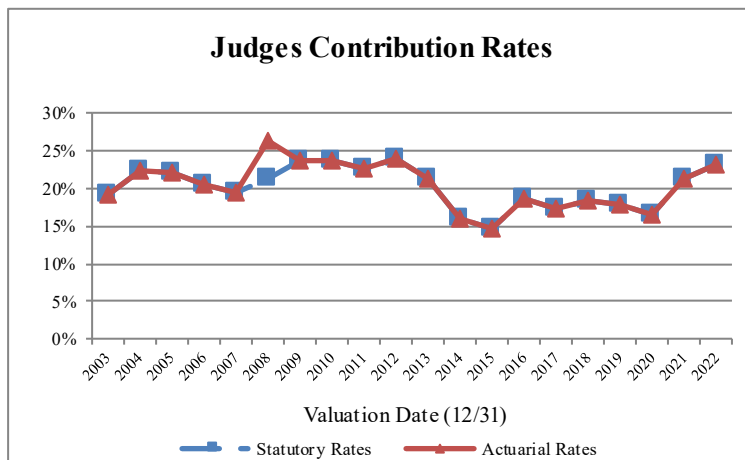
The Local contribution rate has also been impacted by changes in actuarial assumptions and methods as well as investment performance. With the significant changes in 2012 Sub House Bill 2333 and favorable investment returns, the statutory contribution rate was equal to the ARC rate in the 2012 valuation. In this valuation, the Local group's ARC rate increased to 9.60%, due to the negative investment experience during 2022.



Investment experience in 2008, 2011, 2018 and 2022 resulted in higher contribution rates in the latter part of the period. The assumption changes reflected in the 2016 valuation also increased the contribution rate. Favorable investment experience during 2021 and re-amortization of the increase in the unfunded actuarial liability due to the change in assumptions resulted in a small increase in the ARC rate for the KP&F System.



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION



Investment experience in 2008, 2011 and 2022 resulted in higher contribution rates during this period. The assumption changes reflected in the 2016 valuation increased the contribution rate, but assumption changes in the 2019 valuation decreased the contribution rate. Favorable investment experience during 2021 and re-amortization of the unfunded actuarial liability were insufficient to fully mitigate the impact of the assumption change and the contribution rate increased.

Historical Funding Information

The actuarial liability is a measure intended to help the reader assess:

- (i) a retirement system’s funded status on a “going concern” basis, and
- (ii) progress being made toward accumulating the assets needed to pay benefits as due.

Allocation of the actuarial present value of projected benefits between past and future service was based on service using the Entry Age Normal actuarial cost method. Assumptions, including projected pay increases, were the same as used to determine the System's level percent of payroll annual required contribution between entry age and assumed exit age. Entry age was established by subtracting credited service from current age on the valuation date. The Entry Age Normal actuarial liability was determined as part of an actuarial valuation of the System as of December 31, 2022. The actuarial assumptions used in determining the actuarial liability can be found in Appendix C.



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

TABLE 19
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
HISTORICAL FUNDING INFORMATION
(All Groups Combined)

Schedule of Funding Progress
(\$ in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Liability (AL) (b)	Unfunded AL (UAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAL as a Percent of Covered Payroll ((b-a)/c)
12/31/2008	\$11,827,619	\$20,106,787	\$8,279,168	59%	\$6,226,526	133%
12/31/2009	13,461,221	21,138,206	7,676,985	64%	6,532,496	118%
12/31/2010	13,589,658	21,853,783	8,264,125	62%	6,494,048	127%
12/31/2011	13,379,020	22,607,170	9,228,150	59%	6,401,462	144%
12/31/2012	13,278,490	23,531,423	10,252,933	56%	6,498,962	158%
12/31/2013	14,562,765	24,328,670	9,765,906	60%	6,509,809	150%
12/31/2014	15,662,010	25,130,467	9,468,457	62%	6,560,105	144%
12/31/2015	17,408,578	25,947,781	8,539,203	67%	6,603,613	129%
12/31/2016	18,256,373	27,317,754	9,061,381	67%	6,650,451	136%
12/31/2017	19,246,613	28,153,827	8,907,214	68%	6,744,301	132%
12/31/2018	19,898,330	29,100,136	9,201,807	68%	7,048,621	131%
12/31/2019	20,975,535	29,982,337	9,006,801	70%	7,336,004	123%
12/31/2020	22,422,299	30,910,302	8,488,003	73%	7,505,899	113%
12/31/2021	24,803,793	34,630,796	9,827,004	72%	7,672,392	128%
12/31/2022	26,449,612	36,016,133	9,566,521	73%	8,059,095	119%



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

**TABLE 20
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
HISTORICAL FUNDING INFORMATION
(All Groups Combined)**

Short Term Solvency Test

Actuarial Valuation Date	Member Contributions (A)	Retirants and Beneficiaries (B)	Active Member Employer Financed Portion (C)	Actuarial Value of Assets	Portions of Accrued Liabilities Covered by Assets		
					(A)	(B)	(C)
12/31/2013	\$5,636,937,795	\$11,298,180,557	\$7,393,551,786	\$14,562,764,625	100%	79%	0%
12/31/2014	5,791,313,287	12,361,327,805	6,977,825,595	15,662,009,783	100%	80%	0%
12/31/2015	5,942,762,790	13,095,276,871	6,909,740,897	17,408,577,508	100%	88%	0%
12/31/2016	6,008,633,568	14,095,278,126	7,213,842,679	18,256,373,273	100%	87%	0%
12/31/2017	6,008,405,879	14,751,711,502	7,393,709,608	19,246,613,272	100%	90%	0%
12/31/2018	6,132,527,315	15,401,874,720	7,565,734,390	19,898,329,527	100%	89%	0%
12/31/2019	6,298,997,993	15,982,142,480	7,701,196,138	20,975,535,342	100%	92%	0%
12/31/2020	6,440,728,342	16,664,329,950	7,805,243,895	22,422,299,116	100%	96%	0%
12/31/2021	6,558,938,055	18,409,538,578	9,662,319,771	24,803,792,904	100%	99%	0%
12/31/2022	6,747,562,596	19,137,308,347	10,131,261,993	26,449,612,317	100%	100%	6%



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

TABLE 21
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
HISTORICAL FUNDING INFORMATION
(All Groups Combined)

Schedule of Employer Contributions

For the Fiscal Year Ended June 30

Table with 3 columns: Year, Actuarial Required Contribution, and Percentage Contributed. Rows range from 2003 to 2022.

This information is as reported by KPERS. Cavanaugh Macdonald Consulting has relied on the accuracy of the numbers as provided and has not verified them.

* Includes the long-term receivable contribution of \$97.4 million for the State/School group which was subsequently paid in FY 2019, with interest (2019 SB 9).



SECTION 6 – HISTORICAL LEGISLATION, FUNDING AND OTHER INFORMATION

TABLE 22
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
HISTORICAL FUNDING INFORMATION

Historical Contribution Rates

Table with 7 columns: Valuation Date, Actuarial, State/School Statutory, Local Actuarial, Local Statutory, KP&F*, Judges*. Rows show data from 12/31/2000 to 12/31/2022.

* KP&F and Judges contribute the full actuarial contribution rate.

(1) Actuarial cost method changed to Entry Age Normal for valuations on or after 12/31/2003.

(2) Recertified from 9.97% after passage of Sub HB 2333 in the 2012 session.

(3) 11.27% for the first half of the fiscal year. Reduced by the governor's allotment and SB 4 to 8.65% for the second half of the fiscal year.

(4) Recertified from 12.37% to 10.91% and 13.57% to 10.81% after passage of SB 228 in the 2015 session.

(5) Although the rates were not revised, the full contribution amounts were not made.

(6) First actuarial valuation where the actuarial and the statutory contribution rate are equal (i.e., the ARC date).

(7) Recertified from 14.09% to 13.33% for FY 2022 and from 13.86% to 13.11% for FY 2023 after passage of SB 159 in the 2021 session.



SECTION 6 – ACCOUNTING AND OTHER INFORMATION

TABLE 23
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
PROJECTED BENEFIT PAYMENTS

Table with 8 columns: Year, State, School, Local, Total KPERS, KP&F, Judges, Total. Rows represent years from 2023 to 2047.

Note: Cash flows are the expected future non-discounted payments to current members. These numbers exclude refund payouts to current non-vested inactive and assume future retirees elect the normal form of payment and future withdrawals elect refunds according to valuation assumptions.



SECTION 7

RISK CONSIDERATIONS

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the December 31, 2018 actuarial valuation for the Kansas Public Employees Retirement System (KPERs).

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can simply be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for expected future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates. There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return, salary increases, and price inflation;
- demographic risks, such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be higher than expected due to population changes or other factors (note ASOP 51 does not require the actuary to opine on the willingness or ability of the plan sponsor/employer to pay the contribution rate); and
- external risks, such as the regulatory and political environment (which are not included in the risks to be assessed under ASOP 51).

Impact of Funding Policy

One of the most important factors in the funding of any retirement system is consistently making contributions that are at least equal to the actuarial required contribution rate. With respect to this practice, there is a significant difference in the funding policy for KPERs (State/School and Local) and KP&F and Judges. KP&F and Judges have historically contributed the full actuarial contribution rate. However, there is a long history of contributing less than the full actuarial contribution rate for KPERs, particularly the School group.

The Kansas School Retirement System (KSRS) was created by the Kansas Legislature in 1940 and provided for a service annuity and a savings annuity (funded by employee contributions). The service annuity was not actuarially funded in advance, but rather was funded by general appropriations from the State General Fund for the amount necessary to fund the benefits each year (pay as you go). The



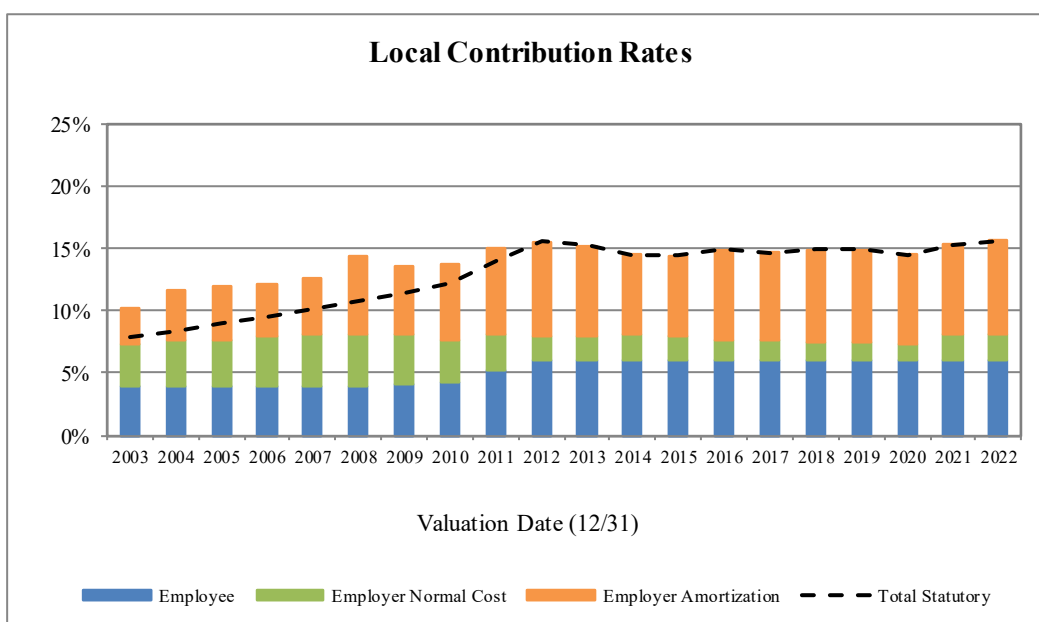
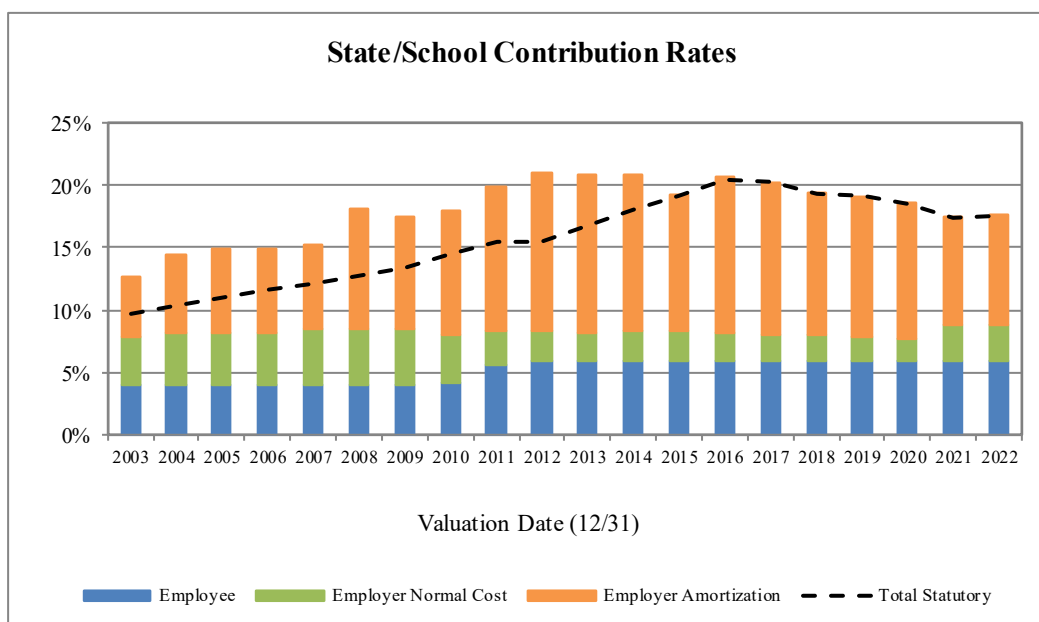
SECTION 7 – RISK CONSIDERATIONS

Legislature explored options and eventually decided to merge KSRS into KPERS on January 1, 1971. At that time, any KSRS members who were not retired became KPERS members, with the provision for benefits on their years of service in the KSRS. Any KSRS member who was retired was not made a KPERS member at that time. In lieu of employer contributions in 1970, the State Permanent School Fund was abolished and all proceeds were transferred to the KPERS Trust Fund. Employer contributions for 1971 were set at 5.05% (4.55% Pension and 0.50% death and disability). Beginning in 1973, School group employer contributions were certified by the Board of Trustees and paid from the State General Fund. In 1972, a bill was passed to fund the remaining unfunded actuarial liability of \$68.4 million over eleven years with level payments of \$5.0 million per year starting in July, 1973. Due to increases in the unfunded actuarial liability from post-retirement benefit adjustments, the State contribution amount was increased to \$10 million in 1973 which was paid from FY 1974 through FY 1984 (11 total payments). The 1984 Legislature made the remaining KSRS retirees special KPERS members and rolled the remaining unfunded actuarial liability into the KPERS unfunded actuarial liability. The remaining KSRS unfunded actuarial liability at that time was estimated to be \$22.3 million (June, 1983). Rather than make the final two payments on the KSRS unfunded actuarial liability, the Legislature amortized the remaining \$22.3 million over 27 years, the years remaining on the KPERS unfunded actuarial liability in 1984. Since the State funds the contributions for both the State and School group, one valuation was performed to set the contribution rate for the combined State/School group. Legislation passed in 2004 (effective with the December 31, 2003 valuation) split the actuarial valuation into two separate groups, although the statutory contribution rate has continued to be determined on a combined basis. By statute, any excess of the statutory contribution over the actuarial required contribution for the State group is allocated to fund the School group.

Unlike KP&F and Judges, the State, School and Local employers do not necessarily contribute the full actuarial contribution rate. Due to legislation passed in 1993, the employer contribution rates certified by the Board may not increase over the prior year by more than the statutory cap. The statutory cap has changed over time but is currently set at 1.20%. Due to this cap, the statutory contribution rate was below the actuarial contribution for many years (25 years for the State/School group and 21 for the Local group). In the December 31, 2015 valuation, the statutory rate for the Local group was equal to the actuarial contribution rate and in the 2017 valuation, the statutory rate for the State/School group is equal to the actuarial contribution rate. The following graphs show the contribution rates for the State/School and Local groups over the last 20 years. Note these are the rates developed in the valuations which apply to later fiscal years.



SECTION 7 – RISK CONSIDERATIONS



Over the last two decades, there have been multiple efforts to address the long-term funding of KPERS and some significant changes have occurred. As was discussed earlier, the statutory cap, which was 0.10% for State/School and 0.05% for Local when established in 1993, has been increased several times and is currently 1.20% for all groups. In addition, the Legislature approved the issuance of bonds in 2004, 2015 and 2021, resulting in total proceeds of about \$1.9 billion contributed to the KPERS trust fund so far. Different benefit structures with lower costs were created for members hired after July 1, 2009 (KPERS 2) and then again for members hired after January 1, 2015 (KPERS 3). The plan design for KPERS 3 members is intended to share the pre-retirement investment risk directly with the members by



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adjusting the interest crediting rate when actual investment experience is different than expected, thereby effectively lowering the benefits to be paid to members. Over the very long term, this change in the benefit structure will reduce some of the investment risk for KPERs.

However, in more recent years, there have been times when the Legislature and Governor have not paid the full statutory contribution rate (which was already lower than the actuarial contribution rate). In 2015, SB 4 reset the previously certified employer contribution rate for the State/School group for the last half of FY 2015 from 11.27% to 8.65%. In addition, 2015 SB 228 lowered the statutory rates for the State/School group from 12.37% to 10.91% for FY 2016 and 13.57% to 10.81% for FY 2017, to reflect the impact of the bond proceeds on the current year's contribution rates.

The 2016 Legislature passed legislation to permit a delay of contributions of up to \$100 million in State and School contributions for fiscal year 2016, but provided that the delayed contributions would be repaid in full, with interest at 8.00%, by June 30, 2018. The Governor used this allotment authority to delay payments of \$97.4 million in State/School group and KP&F State contributions during the final quarter of FY 2016. Legislation in the 2017 session then provided that the repayment of these contributions would not be paid (subsequent legislation passed by the 2019 Legislature repaid these delayed contributions).

The 2017 Legislature passed bills that provided for a delay of \$64.13 million of the total FY 2017 State/School statutory contributions. The delayed employer contributions for fiscal year 2017 are repaid in level-dollar annual installments of \$6.4 million over twenty years beginning in fiscal year 2018. A portion of the employer contributions for School employers within the State/School group for fiscal year 2019 (\$194 million) were also delayed with repayment by the School group, as a level dollar amount over 20 years beginning in FY 2020.

The 2018 and 2019 Legislatures passed bills to contribute additional funding to the KPERs School group:

- \$82 million in July 2018 (received July 2018)
- \$56 million in FY 2018 (received June 2018)
- \$51 million in FY 2020 (received July 2019)

In addition, the 2019 Legislature passed Senate Bill 9 which provided for a transfer of \$115 million from the State General Fund to KPERs in March, 2019. This payment covers the \$97 million in missed KPERs School contributions for FY 2016 plus interest.

The 2021 Legislature passed House Bill 2405, which provided for bonds to be issued to improve the funded status of the School group. As a result, net proceeds of up to \$500 million from bonds issued by the state of Kansas are to be deposited into the KPERs trust fund for the School group, subject to certain criteria. Due to the passage of House Bill 2405, Senate Bill 159, which was the 2021 legislative session's omnibus budget bill, included a provision to reduce the previously certified employer contribution rates for FY 2022 and FY 2023. As a result, the previously certified State/School employer contribution rate changed from 14.09% to 13.33% for FY 2022 and from 13.86% to 13.11% for FY 2023 to reflect the projected impact of the bond proceeds on the employer contribution rates.

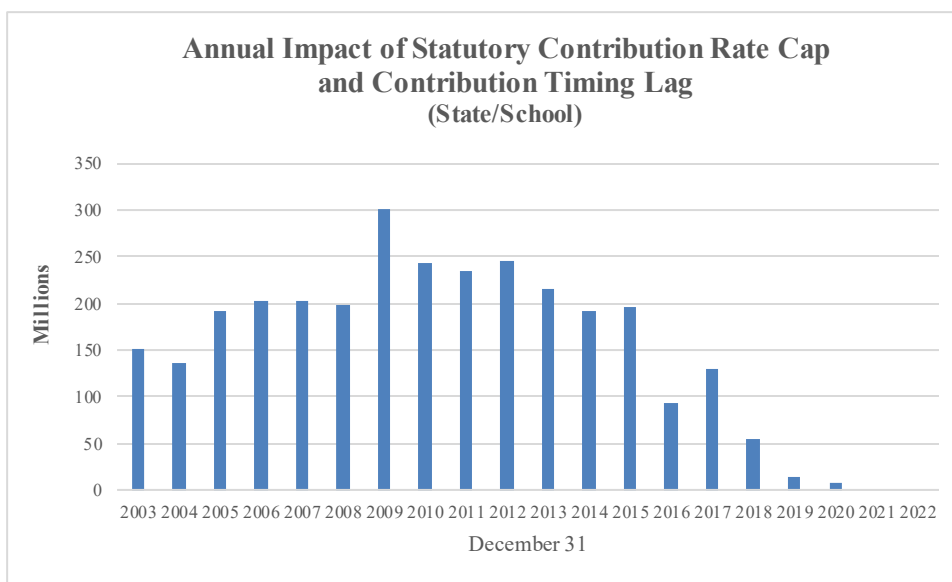
The 2022 Legislature passed Senate Bill 421 which provided for additional contributions, totaling \$1.125 billion in four payments, to be deposited into the KPERs trust fund for the School group. The total amount included \$253.9 million for repayment of the delayed contributions from FY 2017 and FY 2019 in the first payment with additional contributions totaling \$871.1 million. A payment of \$553.9 million was received on May 19, 2022 and a second payment of \$300 million was received by KPERs on June 1,



SECTION 7 – RISK CONSIDERATIONS

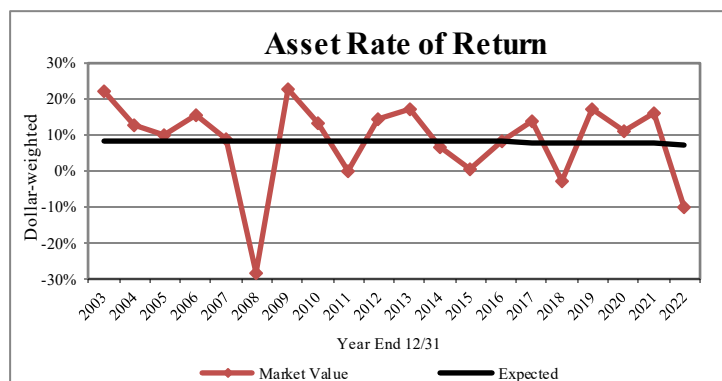
2022. An additional payment of \$146.1 million was paid on August 1, 2022 and the last payment of \$125 million was paid on December 1, 2022.

While there has been significant activity over the last 20 years by the Legislature to address the funding of the State/School group, contributions have been significantly less than the full actuarial rate since 1994. The contribution shortfall results in an increase in the actual unfunded actuarial liability compared to that expected, based on the actuarial funding policy. Note that the contribution shortfall was eliminated in calendar year 2021. The following graph shows the shortfall between the actuarial and statutory contributions over the last 20 years.



Other Risk Factors

The most significant risk factor for KPERS is investment return because of the volatility of returns and the size of plan assets compared to payroll (see Table 24). A perusal of historical returns over 20 years reveals that the actual return each year is rarely close to the expected return for the same period. This is to be expected, given the underlying capital market assumptions and the System’s asset allocation.





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A key demographic risk for all retirement systems, including the Kansas Public Employees Retirement System, is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with Covid-19. This kind of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.

Finally, the unfunded actuarial liability is amortized as a level percentage of payroll for all groups, except for the Judges group. The underlying assumption used in developing the payment schedule assumes an increasing payroll over time which is dependent on a stable employment level, i.e., active member count remains the same. When payroll does not grow as expected, the unfunded actuarial liability contribution rate will be higher than expected even if the dollar amount of the payment is the same as scheduled. With the statutory employer contribution cap for the State/School and Local groups, stagnant growth in covered payroll together with investment returns far below the expected return, could create a situation in the future where the statutory contribution rate is less than the actuarial contribution rate.

Many of the public retirement systems were created shortly after the end of World War II. Although KPERs (established in 1962) is younger than many of its peers, it has still been in existence for more than fifty years. In addition, the merger of KSRS into KPERs impacted the demographics of the System. In general, the aging of the population, including the retirement of the baby boomers, along with earlier retirement eligibility has created a shift in the demographics of most retirement systems. This change is not unexpected and has, in fact, been anticipated in the funding of the retirement systems. Even though it was anticipated, the demographic shift and maturing of the plans have increased the risk associated with funding the system. The following exhibits summarize certain historical information that indicates how certain key risk metrics have changed over time due to the maturing of the retirement system.



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**TABLE 24
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
ASSET VOLATILITY RATIOS**

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan’s contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Group	Market Value of Assets	Covered Payroll	Asset Volatility Ratio	Increase in ARC with a Return 10% Lower than Assumed*
Local	4,696,616,653	2,023,080,468	2.32	1.68%
State/School	16,710,741,366	5,367,942,452	3.11	2.26%
KP&F	2,913,418,901	635,221,373	4.59	3.33%
Judges	195,146,068	32,850,882	5.94	4.31%

*The impact of asset smoothing is not reflected in the impact on the Actuarial Required Contribution Rate (ARC).

	Asset Volatility Ratio	Increase in ARC with a Return 10% Lower than Assumed*
	1.00	0.73%
	2.00	1.45%
Local ->	2.32	1.68%
	3.00	2.18%
State/School ->	3.11	2.26%
	4.00	2.90%
KP&F ->	4.59	3.33%
	5.00	3.63%
Judges ->	5.94	4.31%
	6.00	4.35%
	7.00	5.08%

The assets for the State/School group at December 31, 2022 are 311% of payroll, so underperforming the investment return assumption by 10.00% (i.e., earn -3.00% for one year) is equivalent to an actuarial loss of 31.1% of payroll. The impact on the employer contribution rate varies by group because of the difference in the Asset Volatility Ratio. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the unfunded actuarial liability, this exhibit illustrates the contribution risk associated with volatile investment returns.

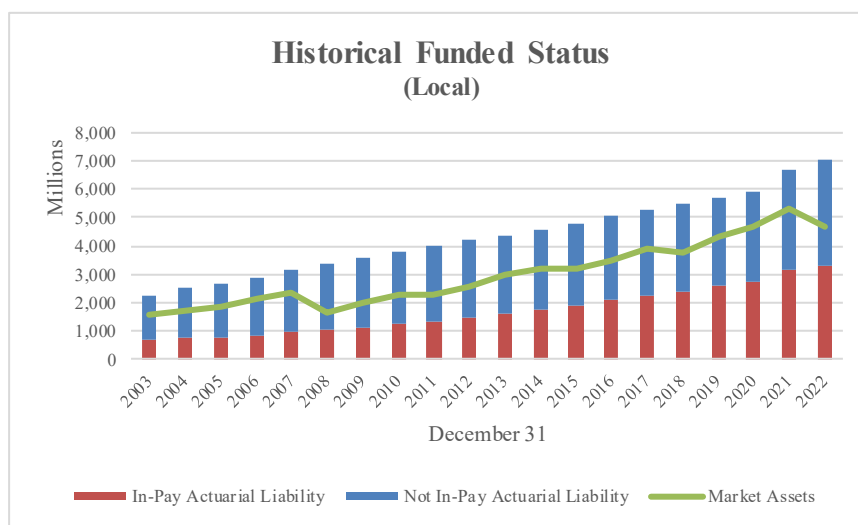
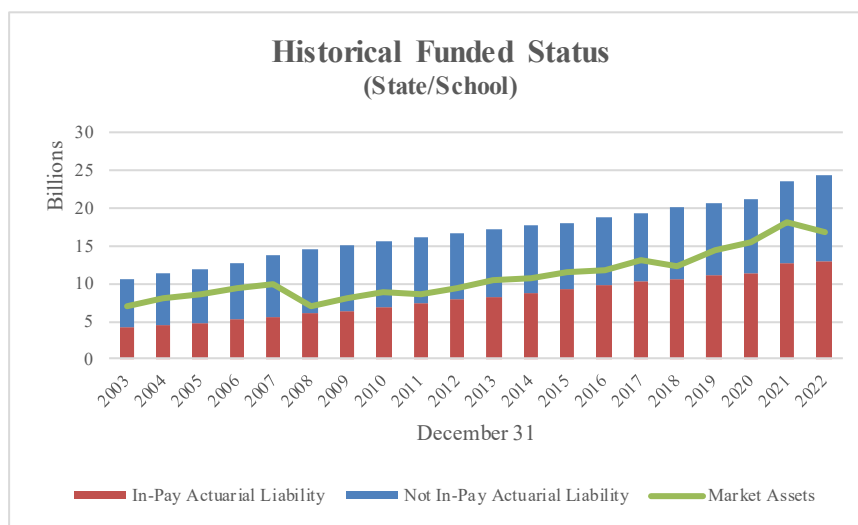


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TABLE 25
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
HISTORICAL FUNDED STATUS

Another key measurement is whether, and by how much, the current market value of assets exceeds the liability for current retirees and beneficiaries (in-pay members). This also provides an indication of the maturity of the retirement system.

The general trend line of the market value of assets is similar for both the State/School and Local groups, but the assets of the Local group have been well above the liability for in-pay members in all years while that has not been the case for the State/School group.

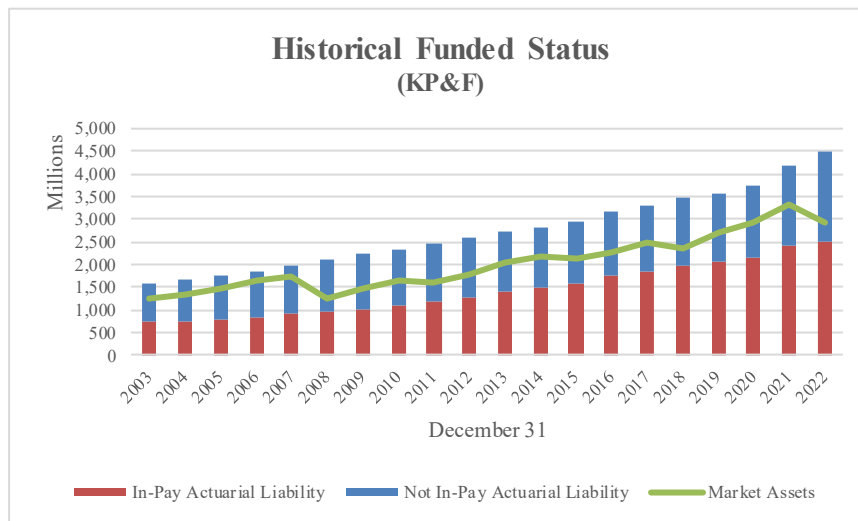




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TABLE 25 (cont.)
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
HISTORICAL FUNDED STATUS

The fact that the Kansas Police and Fire (KP&F) system has been funded with contributions equal to the full actuarial rate has contributed to the fact the market value of assets has historically been higher than the inactive liability. KP&F is currently about 65% funded on a market value basis.



The Judges System has also been funded with contributions equal to the actuarial contribution rate. The funded status of the system declined due to the Great Recession in 2008 and 2009, but has since recovered. Due to the negative investment experience during CY 2022, the funded ratio has dropped and is currently about 86% on a market value basis.

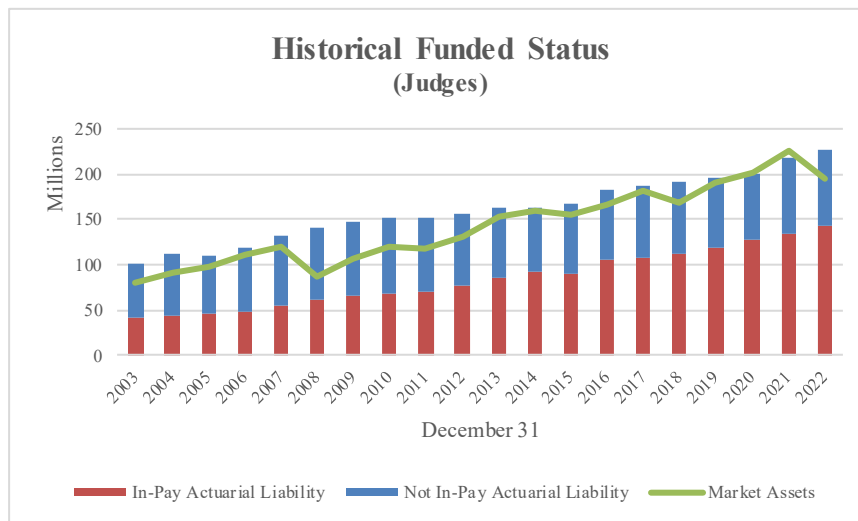
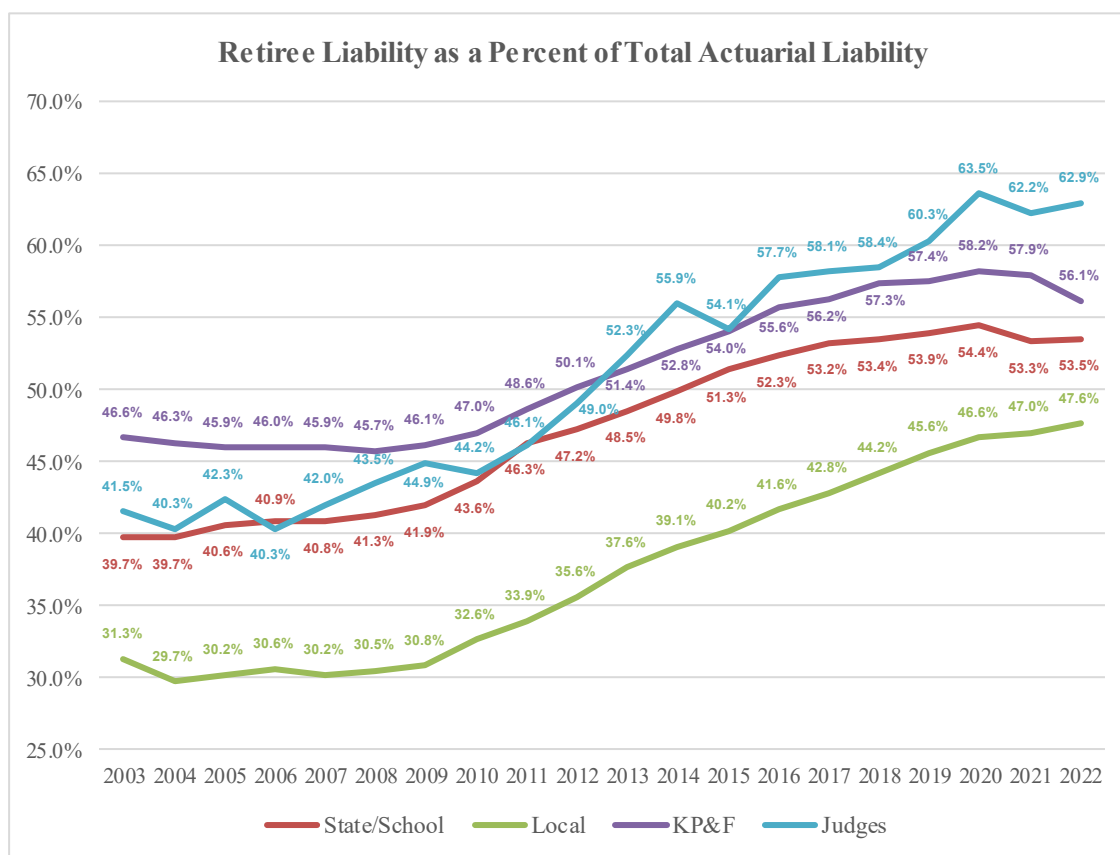




TABLE 26
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
LIABILITY MATURITY MEASUREMENTS

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in a growing percentage of retiree liability. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll to spread costs over.



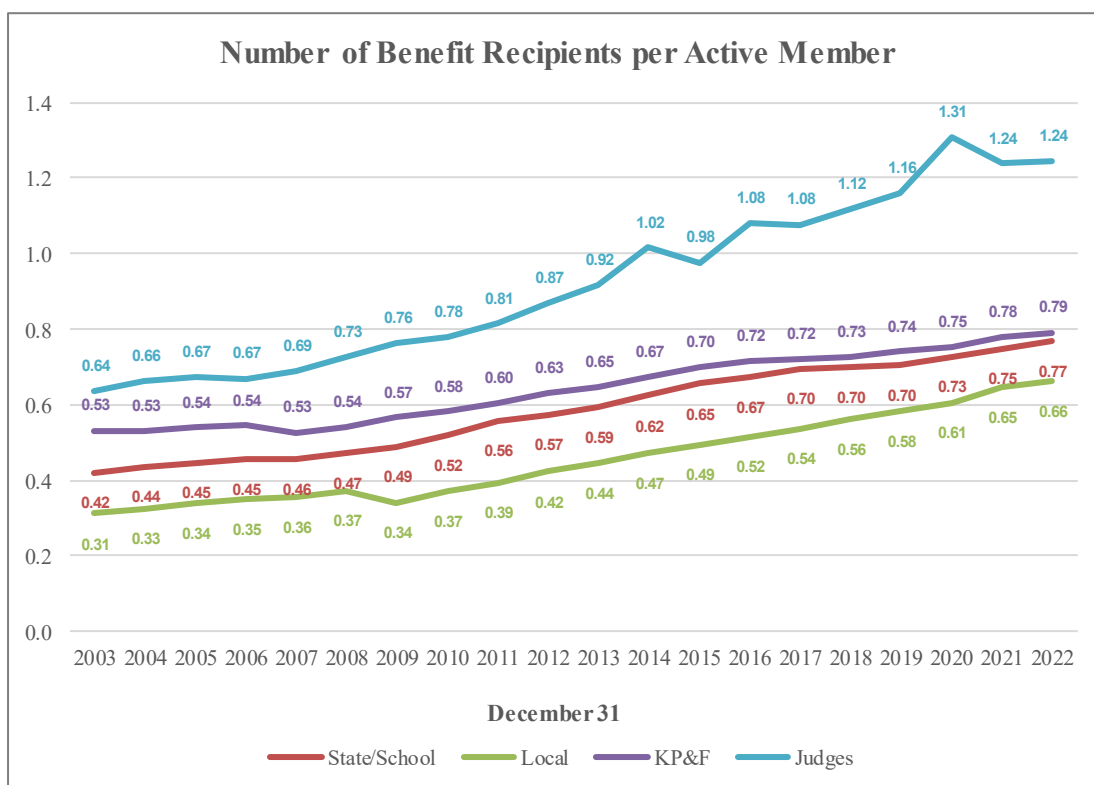
As the graph above illustrates, the relative percentage of total liability attributable to retirees has varied over time and different patterns exist for the different groups. However, for all groups, the trend has been an increase in the percentage over the last 20 years, indicating retirees are a growing portion of the membership of the System.



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TABLE 27
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
NUMBER OF BENEFIT RECIPIENTS PER ACTIVE MEMBER

In the past 20 years, KPERS has become more mature, as indicated by a continual increase in the ratio of benefit recipients (retirees and beneficiaries) to active members, shown in the graph below. The increase in the ratio is significant from a funding perspective because any increase in the unfunded actuarial liability due to unfavorable future investment or non-investment experience for a larger group of non-active members has to be amortized and funded using the payroll of a smaller group of active members.



There has been a general increasing trend of benefit recipients to active members over the last 20 years, indicating a maturation of the systems. The increase has been more dramatic for the Judges system due to the size and demographics of the group.



TABLE 28

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
SCENARIO TESTING - STATE/SCHOOL GROUP**

KPERS is subject to various risks that may impact the funded status and employer contribution rates. As past experience has demonstrated, investment performance is one of the most impactful risks. Any variance in actual experience, including but not limited to members living longer or shorter than expected, future salary increases more or less than assumed, and members leaving active employment earlier or later than assumed will also impact the liabilities and contribution rates. It is because of these possible, and often likely, annual variances from expectations that an actuarial valuation is performed annually to assess and measure the variances and update the employer contribution rates.

To measure the investment risk, a “Scenario Test” is included to study the change in funded status and employer contribution rates if KPERS were to earn market returns higher or lower than 7.00% in the first year following the December 31, 2022 valuation (calendar year 2023) and then earn the assumed return in all other years. This section of the valuation report contains three deterministic projections of actuarial valuation results to illustrate the impact of variance in the investment return for a single year. The projections assume the actual return on assets for the year ending December 31, 2023 will be as follows:

- Scenario 1: 7.00% return in all years (the current assumption)
- Scenario 2: 0.00% return in CY 2023, then 7.00% thereafter
- Scenario 3: 14.00% return in CY 2023, then 7.00% thereafter

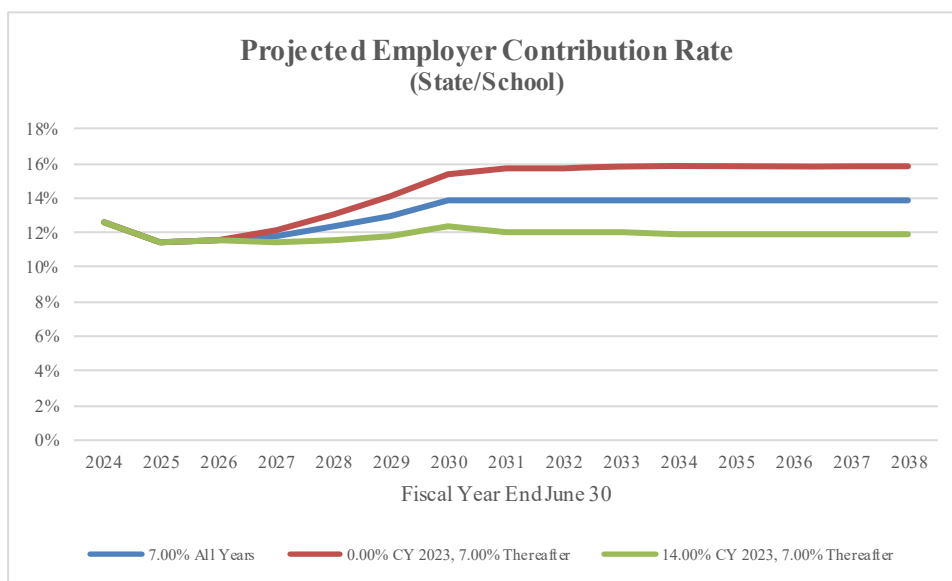
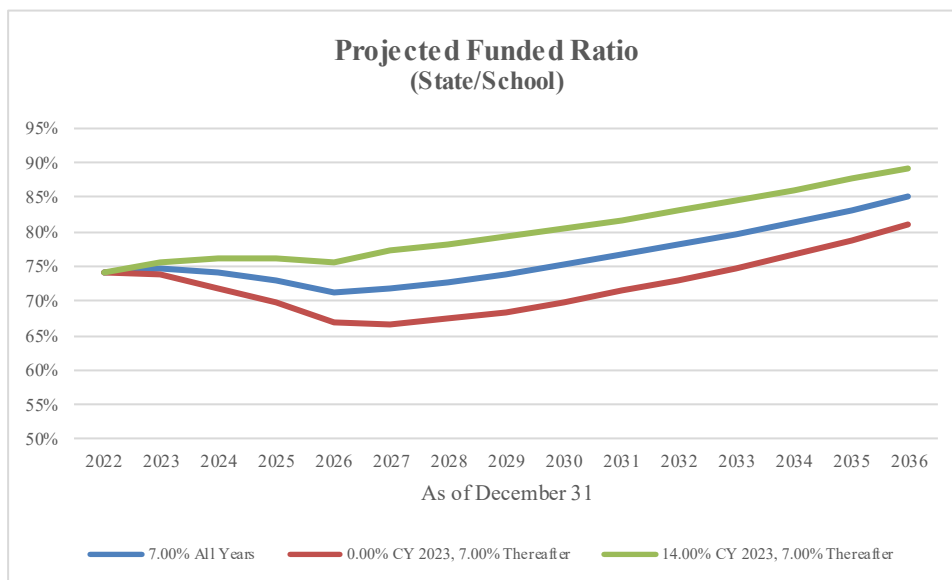
Impact on the Future Valuation Results

The following graphs show the impact of each scenario on the State/School funded ratio and the State/School employer contribution rate. The blue line reflects the expected path for the funded ratio if all assumptions are met in the future, including the 7.00% assumed rate of return. The funded ratio declines steadily as deferred asset losses are realized and then improves as the System is expected to contribute the full actuarial contribution rate until reaching 85% in 2036. If the actual investment return for calendar year 2023 is 0%, followed by returns of 7.00% in all subsequent years, the funded ratio would decrease to around 66% in 2027 as the deferred asset experience flows through the asset smoothing method and then steadily increase (red line). Under the third scenario (green line), the return for calendar year 2023 is 14.00%, followed by 7.00%, and the funded ratio increases steadily, reaching 89% by 2036. The purpose of the scenario testing is to illustrate the long-term impact of one year where the investment return is significantly better or worse than expected.

Similarly, for the State/School employer contribution rate, the blue line indicates the projection of the employer contribution rate, if all assumptions are met, which increases to around 14% once the deferred investment experience works through the asset smoothing method. If the return in calendar year 2023 is 0.00% (red line), the employer contribution rate increases more to around 16% as the investment experience is recognized in the actuarial value of assets and then remains at that level for the remainder of the period. Under the third scenario (green line), where the return in calendar year 2023 is 14.00%, the employer contribution rate decreases to around 12%.



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SECTION 7 – RISK CONSIDERATIONS

**TABLE 29A
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
COMPARISON OF VALUATION RESULTS UNDER ALTERNATE
INVESTMENT RETURN ASSUMPTIONS**

**STATE/SCHOOL
(\$ in millions)**

This exhibit compares the key December 31, 2022 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions, including PLSO factors, annuity factors and interest crediting rate, are unchanged for purposes of this analysis.

Investment Return Assumption	6.50%	6.75%	7.00%	7.25%	7.50%
Actuarial Liability	\$25,673	\$24,966	\$24,290	\$23,643	\$23,023
Actuarial Value of Assets	18,029	18,029	18,029	18,029	18,029
Unfunded Actuarial Liability (UAL)	\$7,644	\$6,937	\$6,261	\$5,614	\$4,994
Funded Ratio	70.2%	72.2%	74.2%	76.3%	78.3%
Contribution Rates					
- Total Normal Cost Rate	9.88%	9.33%	8.81%	8.33%	7.88%
- Member Contribution Rate	(6.00%)	(6.00%)	(6.00%)	(6.00%)	(6.00%)
- Employer Normal Cost Rate	3.88%	3.33%	2.81%	2.33%	1.88%
- Amortization of the UAL	10.22%	9.49%	8.75%	8.00%	7.24%
Actuarial Contribution Rate	14.10%	12.82%	11.56%	10.33%	9.12%
Statutory Employer Contribution Rate*	12.62%	12.62%	11.56%	10.33%	9.12%

Note: Totals may not add due to rounding. The change in the UAL due to different investment return assumption is amortized over a 25-year period.

*Employer contribution rates may be impacted by the statutory cap.



SECTION 7 – RISK CONSIDERATIONS

TABLE 29B
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
COMPARISON OF VALUATION RESULTS UNDER ALTERNATE
INVESTMENT RETURN ASSUMPTIONS

LOCAL
(\$ in millions)

This exhibit compares the key December 31, 2022 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions, including PLSO factors, annuity factors and interest crediting rate, are unchanged for purposes of this analysis.

Investment Return Assumption	6.50%	6.75%	7.00%	7.25%	7.50%
Actuarial Liability	\$7,427	\$7,219	\$7,019	\$6,828	\$6,646
Actuarial Value of Assets	5,067	5,067	5,067	5,067	5,067
Unfunded Actuarial Liability (UAL)	\$2,360	\$2,152	\$1,952	\$1,762	\$1,579
Funded Ratio	68.2%	70.2%	72.2%	74.2%	76.2%
Contribution Rates					
- Total Normal Cost Rate	8.95%	8.50%	8.07%	7.67%	7.30%
- Member Contribution Rate	(6.00%)	(6.00%)	(6.00%)	(6.00%)	(6.00%)
- Employer Normal Cost Rate	2.95%	2.50%	2.07%	1.67%	1.30%
- Amortization of the UAL	8.62%	8.08%	7.53%	6.98%	6.42%
Actuarial Contribution Rate	11.57%	10.58%	9.60%	8.65%	7.72%
Statutory Employer Contribution Rate*	10.46%	10.46%	9.60%	8.65%	7.72%

Note: Totals may not add due to rounding. The change in the UAL due to different investment return assumption is amortized over a 25-year period.

*Employer contribution rates may be impacted by the statutory cap.



SECTION 7 – RISK CONSIDERATIONS

**TABLE 29C
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
COMPARISON OF VALUATION RESULTS UNDER ALTERNATE
INVESTMENT RETURN ASSUMPTIONS**

**KP&F
(\$ in millions)**

This exhibit compares the key December 31, 2022 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below.

Investment Return Assumption	6.50%	6.75%	7.00%	7.25%	7.50%
Actuarial Liability	\$4,733	\$4,604	\$4,480	\$4,362	\$4,249
Actuarial Value of Assets	3,143	3,143	3,143	3,143	3,143
Unfunded Actuarial Liability (UAL)	\$1,590	\$1,460	\$1,337	\$1,219	\$1,106
Funded Ratio	66.4%	68.3%	70.2%	72.1%	74.0%
Contribution Rates					
- Total Normal Cost Rate	19.51%	18.50%	17.56%	16.67%	15.84%
- Member Contribution Rate	(7.15%)	(7.15%)	(7.15%)	(7.15%)	(7.15%)
- Employer Normal Cost Rate	12.36%	11.35%	10.41%	9.52%	8.69%
- Amortization of the UAL	16.27%	15.24%	14.20%	13.15%	12.09%
Actuarial Contribution Rate	28.63%	26.59%	24.61%	22.67%	20.78%
Statutory Employer Contribution Rate	28.63%	26.59%	24.61%	22.67%	20.78%

Note: Totals may not add due to rounding. The change in the UAL due to different investment return assumption is amortized over a 25-year period.



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TABLE 29D
KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
COMPARISON OF VALUATION RESULTS UNDER ALTERNATE
INVESTMENT RETURN ASSUMPTIONS

JUDGES

This exhibit compares the key December 31, 2022 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below.

Table with 6 columns: Investment Return Assumption, 6.50%, 6.75%, 7.00%, 7.25%, 7.50%. Rows include Actuarial Liability, Actuarial Value of Assets, Unfunded Actuarial Liability (UAL), Funded Ratio, Contribution Rates (Total Normal Cost Rate, Member Contribution Rate, Employer Normal Cost Rate, Amortization of the UAL), Actuarial Contribution Rate, and Statutory Employer Contribution Rate.

Note: The change in the UAL due to different investment return assumption is amortized over a 25-year period.



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APPENDIX A - SUMMARY OF MEMBERSHIP DATA

HISTORICAL SUMMARY OF MEMBERS

The following tables display selected historical data for KPERS, KP&F and Judges as available.

KPERS

Valuation		Active Members						Number			Act/Ret Ratio
		Average						Deferred Disabled*	Inactives	Retired	
Date December 31	Total Count	Number	Age	Entry Age	Service	Annual Pay (\$)	Pay Increase				
2003	237,123	141,401	45.0	34.4	10.6	32,111	1.5%	2,933	37,280	55,509	2.55
2004	238,375	140,779	45.3	34.4	10.8	32,937	2.6%	3,004	37,191	57,401	2.45
2005	241,684	142,047	45.3	34.4	10.9	33,724	2.4%	3,099	37,015	59,523	2.39
2006	245,555	144,227	45.4	34.6	10.8	35,284	4.6%	3,007	36,513	61,808	2.33
2007	249,624	146,406	45.5	34.7	10.8	36,924	4.6%	2,911	37,140	63,167	2.32
2008	255,427	148,569	45.6	34.7	10.9	38,087	3.1%	2,823	37,567	66,468	2.24
2009	264,280	153,386	45.4	34.7	10.7	38,749	1.7%	2,781	39,212	68,901	2.23
2010	265,477	150,482	45.6	34.9	10.7	40,109	3.5%	2,749	40,122	72,124	2.09
2011	267,713	147,647	45.6	34.4	11.2	40,166	0.1%	2,711	41,358	75,997	1.94
2012	272,561	148,605	45.5	34.3	11.2	40,522	0.9%	2,575	41,991	79,390	1.87
2013	275,983	147,957	45.5	34.2	11.3	40,684	0.4%	2,436	43,660	81,930	1.81
2014	281,172	146,746	45.4	34.2	11.2	41,367	1.7%	2,340	46,503	85,583	1.71
2015	284,912	144,669	45.4	34.2	11.2	42,149	1.9%	2,210	49,488	88,545	1.63
2016	290,025	144,564	45.4	34.2	11.2	42,460	0.7%	2,051	52,140	91,270	1.58
2017	296,383	143,947	45.3	34.2	11.1	43,128	1.6%	1,904	56,402	94,130	1.53
2018	302,735	146,104	45.1	34.1	11.0	44,404	3.0%	1,771	58,008	96,852	1.51
2019	309,154	148,199	45.0	34.2	10.8	45,563	2.6%	1,650	59,746	99,559	1.49
2020	310,298	145,880	45.0	34.1	10.9	47,346	3.9%	1,566	61,211	101,641	1.44
2021	316,372	144,251	44.9	34.1	10.8	48,963	3.4%	1,482	66,427	104,212	1.38
2022	323,422	143,849	44.9	34.2	10.7	51,381	4.9%	1,367	71,731	106,475	1.35

*Prior to 2003, deferred disabled members were included in the Inactives count.



APPENDIX A - SUMMARY OF MEMBERSHIP DATA

**HISTORICAL SUMMARY OF MEMBERS
(continued)**

KP&F

Valuation		Active Members						Number			Act/Ret Ratio
		Average		Entry Age	Service	Annual Pay (\$)	Pay Increase	Deferred Disabled*	Inactives	Retired	
Date December 31	Total Count	Number	Age								Age
2003	11,007	6,464	38.8	27.9	11.0	49,017	3.0%		1,087	3,456	1.87
2004	11,528	6,721	38.9	28.0	11.0	51,014	4.1%	187	1,062	3,558	1.89
2005	11,719	6,772	38.9	27.9	11.0	52,222	2.4%	194	1,099	3,654	1.85
2006	12,070	6,965	39.0	28.1	11.0	53,939	3.3%	186	1,134	3,785	1.84
2007	12,210	7,137	39.1	28.1	11.0	56,068	3.9%	175	1,143	3,755	1.90
2008	12,499	7,242	39.1	28.0	11.1	57,800	3.1%	173	1,175	3,909	1.85
2009	12,556	7,179	39.5	28.1	11.4	60,287	4.3%	181	1,136	4,060	1.77
2010	12,691	7,173	39.6	28.2	11.4	61,805	2.5%	181	1,169	4,168	1.72
2011	12,863	7,143	39.6	27.9	11.7	61,907	0.2%	197	1,208	4,315	1.66
2012	13,109	7,187	39.5	27.8	11.7	62,489	0.9%	203	1,194	4,525	1.59
2013	13,276	7,224	39.6	27.8	11.8	63,928	2.3%	208	1,174	4,670	1.55
2014	13,463	7,204	39.7	27.8	11.9	64,156	0.4%	210	1,196	4,853	1.48
2015	13,762	7,244	39.5	27.8	11.7	65,925	2.8%	210	1,243	5,065	1.43
2016	14,090	7,303	39.3	27.7	11.6	66,441	0.8%	204	1,351	5,232	1.40
2017	14,533	7,481	39.1	27.8	11.3	67,875	2.2%	200	1,454	5,398	1.39
2018	15,001	7,695	38.8	27.8	11.0	69,184	1.9%	192	1,519	5,595	1.38
2019	15,412	7,797	38.8	27.9	10.9	71,122	2.8%	192	1,660	5,763	1.35
2020	15,732	7,835	38.7	27.8	10.9	72,831	2.4%	184	1,823	5,890	1.33
2021	16,138	7,779	38.7	27.9	10.8	74,451	2.2%	197	2,107	6,055	1.28
2022	16,607	7,868	38.6	27.8	10.8	80,735	8.4%	203	2,312	6,224	1.26

*Prior to 2003, deferred disabled members were included in the Inactives count.



APPENDIX A - SUMMARY OF MEMBERSHIP DATA

**HISTORICAL SUMMARY OF MEMBERS
(continued)**

JUDGES

Valuation		Active Members						Number		Act/Ret Ratio
		Average						Inactives	Retired	
Date December 31	Total Count	Number	Age	Entry Age	Service	Annual Pay (\$)	Pay Increase			
2003	424	250	55.1	43.8	11.3	86,770	0.8%	15	159	1.56
2004	435	251	55.5	43.9	11.6	88,761	2.3%	18	166	1.51
2005	444	254	55.7	44.1	11.6	90,585	2.1%	19	171	1.47
2006	447	257	56.2	44.2	11.9	96,743	6.8%	18	172	1.49
2007	455	261	56.6	44.8	11.8	101,732	5.2%	14	180	1.45
2008	463	262	57.1	45.2	11.9	104,159	2.4%	11	190	1.38
2009	483	266	57.1	45.6	11.5	105,709	1.5%	14	203	1.31
2010	480	264	57.8	45.7	12.1	107,019	1.2%	10	206	1.28
2011	486	264	58.1	45.5	12.6	109,387	2.2%	7	215	1.23
2012	494	261	58.3	46.0	12.3	107,584	(1.6)%	6	227	1.15
2013	514	265	57.8	46.1	11.7	107,364	(0.2)%	6	243	1.09
2014	516	253	58.2	46.3	11.9	108,411	1.0%	6	257	0.98
2015	526	262	58.4	46.4	12.0	108,166	(0.2)%	8	256	1.02
2016	533	252	58.1	46.5	11.6	107,633	(0.5)%	9	272	0.93
2017	544	259	58.0	46.6	11.4	109,391	1.6%	6	279	0.93
2018	547	256	58.5	46.8	11.7	111,465	1.9%	5	286	0.90
2019	564	257	58.1	47.0	11.1	113,100	1.5%	9	298	0.86
2020	572	244	57.4	46.9	10.5	116,687	3.2%	9	319	0.76
2021	588	258	57.2	47.1	10.1	117,282	0.5%	11	319	0.81
2022	608	267	56.5	47.3	9.2	123,037	4.9%	9	332	0.80



APPENDIX A - SUMMARY OF MEMBERSHIP DATA

SUMMARY OF DATA FILE RECONCILIATION

The following table reconciles the data Cavanaugh Macdonald Consulting received from KPERS to the final membership counts used in the valuation.

Records on the in-pay data file	132,634
Removed deaths prior to 12/31/2022	(18,530)
Records removed because the member has received all benefits or is not eligible for KPERS benefits	(1,713)
Added new retirees from supplemental file	<u>640</u>
Records used in the valuation	113,031
Records on the not-in-pay data file	261,850
Missing records added	3
Records removed because the member has received all benefits or is not eligible for KPERS benefits	(28,092)
Records removed because the member began receiving benefits	<u>(6,155)</u>
Records used in the valuation	227,606

These records are allocated as follows:

	State	School	Local	KP&F	Judges
Active members*	19,993	87,207	36,649	7,868	267
Inactive vested members	5,049	16,386	8,484	291	9
Inactive nonvested members	5,473	21,918	14,421	2,021	0
Deferred disabled members	<u>401</u>	<u>567</u>	<u>399</u>	<u>203</u>	<u>0</u>
Total	30,916	126,078	59,953	10,383	276
Retirees and beneficiaries	21,443	60,782	24,250	6,224	332
GRAND TOTAL	52,359	186,860	84,203	16,607	608

* For KP&F, includes 44 current DROP participants.



APPENDIX A – SUMMARY OF MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM ACTIVE MEMBER DATA

	12/31/2022	12/31/2021	Change
State			
Number	19,993	19,917	0.4%
KPERs 1	6,825	7,556	(9.7%)
KPERs 2	3,906	3,927	(0.5%)
KPERs 3	9,262	8,434	9.8%
Average Current Age	45.85	46.13	(0.6%)
Average Service	11.17	11.49	(2.8%)
Average Pay	\$53,435	\$49,522	7.9%
School			
Number	87,207	87,898	(0.8%)
KPERs 1	28,637	31,243	(8.3%)
KPERs 2	14,587	15,653	(6.8%)
KPERs 3	43,983	41,002	7.3%
Average Current Age	44.54	44.48	0.1%
Average Service	10.98	11.00	(0.2%)
Average Pay	\$49,304	\$47,462	3.9%
State/School			
Number	107,200	107,815	(0.6%)
KPERs 1	35,462	38,799	(8.6%)
KPERs 2	18,493	19,580	(5.6%)
KPERs 3	53,245	49,436	7.7%
Average Current Age	44.78	44.78	0.0%
Average Service	11.02	11.09	(0.6%)
Average Pay	\$50,074	\$47,843	4.7%
Local			
Number	36,649	36,436	0.6%
KPERs 1	11,038	12,154	(9.2%)
KPERs 2	5,299	5,768	(8.1%)
KPERs 3	20,312	18,514	9.7%
Average Current Age	45.11	45.24	(0.3%)
Average Service	9.92	10.10	(1.8%)
Average Pay	\$55,202	\$52,278	5.6%



APPENDIX A – SUMMARY OF MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM ACTIVE MEMBER DATA

	12/31/2022	12/31/2021	Change
KPERS Total			
Number	143,849	144,251	(0.3%)
KPERS 1	46,500	50,953	(8.7%)
KPERS 2	23,792	25,348	(6.1%)
KPERS 3	73,557	67,950	8.3%
Average Current Age	44.87	44.90	(0.1%)
Average Service	10.74	10.84	(0.9%)
Average Pay	\$51,381	\$48,963	4.9%
KP&F			
Number	7,868	7,779	1.1%
Tier 1	12	17	(29.4%)
Tier 2	7,812	7,710	1.3%
DROP	44	52	(15.4%)
Average Current Age	38.61	38.69	(0.2%)
Average Service	10.76	10.84	(0.7%)
Average Pay	\$80,735	\$74,451	8.4%
Judges			
Number	267	258	3.5%
Average Current Age	56.48	57.21	(1.3%)
Average Service	9.23	10.06	(8.3%)
Average Pay	\$123,037	\$117,282	4.9%
System Total			
Number	151,984	152,288	(0.2%)
Average Current Age	44.56	44.60	(0.1%)
Average Service	10.73	10.84	(1.0%)
Average Pay	\$53,026	\$50,381	5.2%



APPENDIX A – SUMMARY OF MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
INACTIVE MEMBER DATA

	12/31/2022	12/31/2021	Change
State			
Inactive Vested	5,049	4,709	7.2%
Inactive Nonvested	5,473	5,271	3.8%
Deferred Disabled	401	440	(8.9%)
School			
Inactive Vested	16,386	14,927	9.8%
Inactive Nonvested	21,918	20,140	8.8%
Deferred Disabled	567	605	(6.3%)
Local			
Inactive Vested	8,484	7,944	6.8%
Inactive Nonvested	14,421	13,436	7.3%
Deferred Disabled	399	437	(8.7%)
KPERS Total			
Inactive Vested	29,919	27,580	8.5%
Inactive Nonvested	41,812	38,847	7.6%
Deferred Disabled	1,367	1,482	(7.8%)
KP&F			
Inactive Vested	291	270	7.8%
Inactive Nonvested	2,021	1,837	10.0%
Deferred Disabled	203	197	3.0%
Judges			
Inactive Vested	9	11	(18.2%)
Inactive Nonvested	0	0	0.0%
Deferred Disabled	0	0	0.0%
System Total			
Inactive Vested	30,219	27,861	8.5%
Inactive Nonvested	43,833	40,684	7.7%
Deferred Disabled	1,570	1,679	(6.5%)



APPENDIX A – SUMMARY OF MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM RETIREE MEMBER DATA

	12/31/2022	12/31/2021	Change
State			
Number	19,280	19,136	0.8%
Average Benefit	\$16,305	\$15,995	1.9%
Average Age	73.03	72.82	0.3%
School			
Number	57,379	56,146	2.2%
Average Benefit	\$17,159	\$16,830	2.0%
Average Age	73.18	72.98	0.3%
Local			
Number	21,845	21,231	2.9%
Average Benefit	\$15,014	\$14,508	3.5%
Average Age	72.44	72.30	0.2%
KPERS Total			
Number	98,504	96,513	2.1%
Average Benefit	\$16,516	\$16,154	2.2%
Average Age	72.99	72.80	0.3%
KP&F			
Number	5,184	5,041	2.8%
Average Benefit	\$40,760	\$40,177	1.5%
Average Age	65.69	65.58	0.2%
Judges			
Number	260	248	4.8%
Average Benefit	\$48,027	\$47,501	1.1%
Average Age	74.85	75.33	(0.6%)
System Total			
Number	103,948	101,802	2.1%
Average Benefit	\$17,804	\$17,420	2.2%
Average Age	72.63	72.45	0.2%



APPENDIX A – SUMMARY OF MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM BENEFICIARY MEMBER DATA

	12/31/2022	12/31/2021	Change
State			
Number	2,163	2,109	2.6%
Average Benefit	\$10,153	\$9,913	2.4%
Average Age	76.64	76.72	(0.1%)
School			
Number	3,403	3,275	3.9%
Average Benefit	\$10,164	\$10,054	1.1%
Average Age	77.17	77.08	0.1%
Local			
Number	2,405	2,315	3.9%
Average Benefit	\$8,566	\$8,322	2.9%
Average Age	75.64	75.70	(0.1%)
KPERS Total			
Number	7,971	7,699	3.5%
Average Benefit	\$9,679	\$9,495	1.9%
Average Age	76.56	76.57	(0.0%)
KP&F			
Number	1,040	1,014	2.6%
Average Benefit	\$19,245	\$19,035	1.1%
Average Age	70.52	70.30	0.3%
Judges			
Number	72	71	1.4%
Average Benefit	\$29,803	\$31,032	(4.0%)
Average Age	78.07	77.55	0.7%
System Total			
Number	9,083	8,784	3.4%
Average Benefit	\$10,934	\$10,770	1.5%
Average Age	75.88	75.85	0.0%



APPENDIX A – SUMMARY OF MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM RETIREE AND BENEFICIARY MEMBER DATA

	12/31/2022	12/31/2021	Change
State			
Number	21,443	21,245	0.9%
Average Benefit	\$15,684	\$15,391	1.9%
Average Age	73.39	73.21	0.2%
School			
Number	60,782	59,421	2.3%
Average Benefit	\$16,767	\$16,457	1.9%
Average Age	73.40	73.21	0.3%
Local			
Number	24,250	23,546	3.0%
Average Benefit	\$14,375	\$13,900	3.4%
Average Age	72.76	72.63	0.2%
KPERS Total			
Number	106,475	104,212	2.2%
Average Benefit	\$16,004	\$15,662	2.2%
Average Age	73.25	73.08	0.2%
KP&F			
Number	6,224	6,055	2.8%
Average Benefit	\$37,165	\$36,636	1.4%
Average Age	66.50	66.37	0.2%
Judges			
Number	332	319	4.1%
Average Benefit	\$44,075	\$43,835	0.5%
Average Age	75.55	75.82	(0.4%)
System Total			
Number	113,031	110,586	2.2%
Average Benefit	\$17,252	\$16,892	2.1%
Average Age	72.89	72.72	0.2%



APPENDIX A – SUMMARY OF MEMBERSHIP DATA

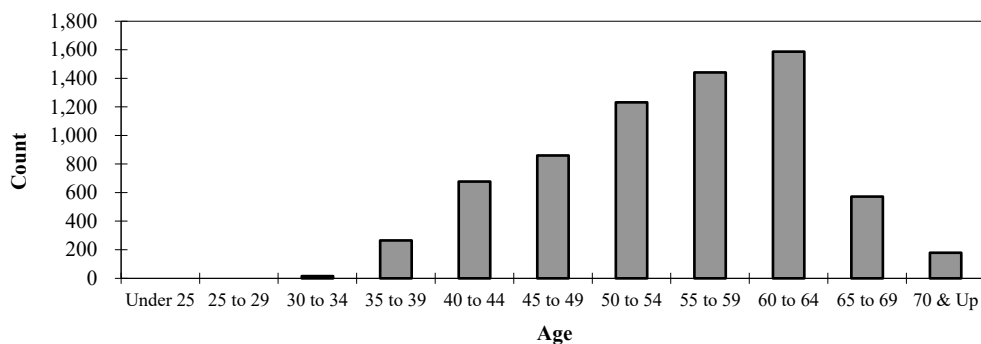
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

STATE - KPERS 1*

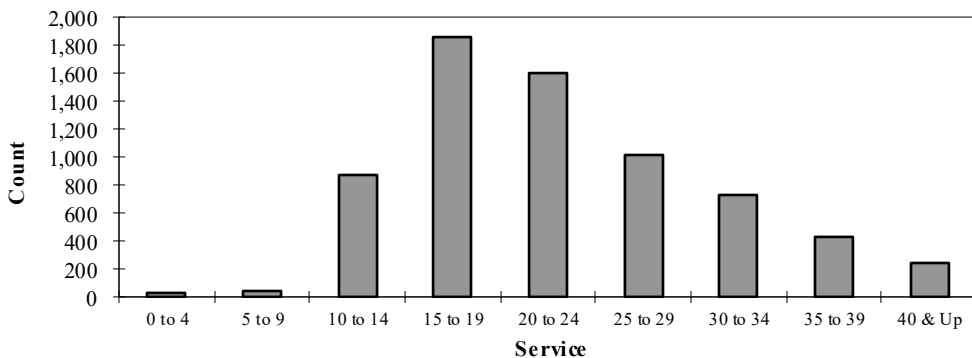
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	14	1	0	0	0	0	0	15
35 to 39	0	7	140	118	0	0	0	0	0	265
40 to 44	1	5	165	393	111	2	0	0	0	677
45 to 49	1	4	128	334	344	49	0	0	0	860
50 to 54	1	4	105	299	382	343	93	4	0	1,231
55 to 59	5	6	125	265	311	306	287	134	2	1,441
60 to 64	13	9	120	303	313	229	251	232	117	1,587
65 to 69	8	4	51	112	100	61	82	55	98	571
70 & Up	0	0	27	37	35	27	17	9	26	178
Total	29	39	875	1,862	1,596	1,017	730	434	243	6,825

* Closed effective July 1, 2009.

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

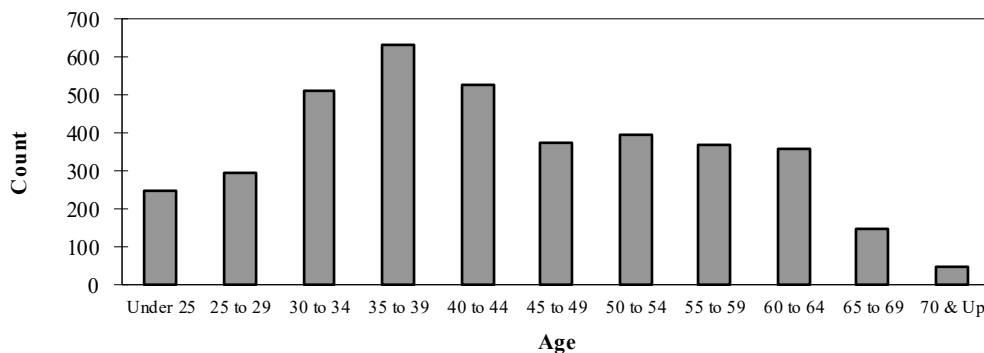
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

STATE - KPERS 2*

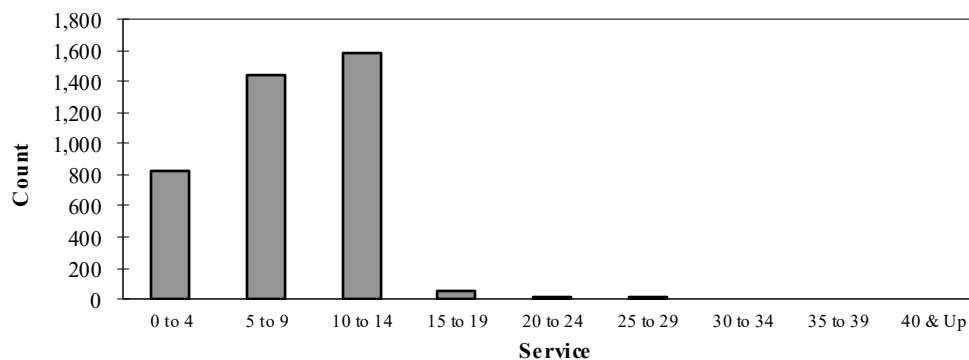
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	240	9	0	0	0	0	0	0	0	249
25 to 29	182	110	2	0	0	0	0	0	0	294
30 to 34	117	278	117	0	0	0	0	0	0	512
35 to 39	84	247	301	1	0	0	0	0	0	633
40 to 44	56	171	286	14	0	0	0	0	0	527
45 to 49	38	143	190	4	1	0	0	0	0	376
50 to 54	44	143	199	7	3	0	0	0	0	396
55 to 59	27	145	181	9	2	2	0	0	0	366
60 to 64	24	134	192	7	2	0	0	0	0	359
65 to 69	8	52	81	3	3	0	0	0	0	147
70 & Up	2	10	33	2	0	0	0	0	0	47
Total	822	1,442	1,582	47	11	2	0	0	0	3,906

* Effective date of KPERS 2 was July 1, 2009. Closed effective January 1, 2015.

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

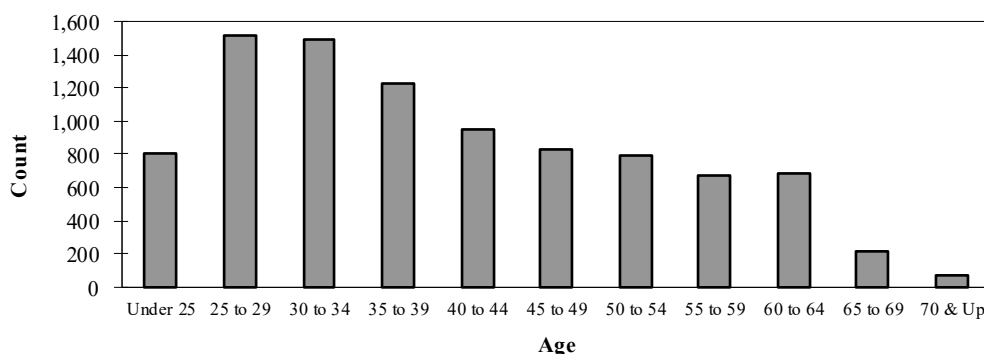
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

STATE - KPERS 3*

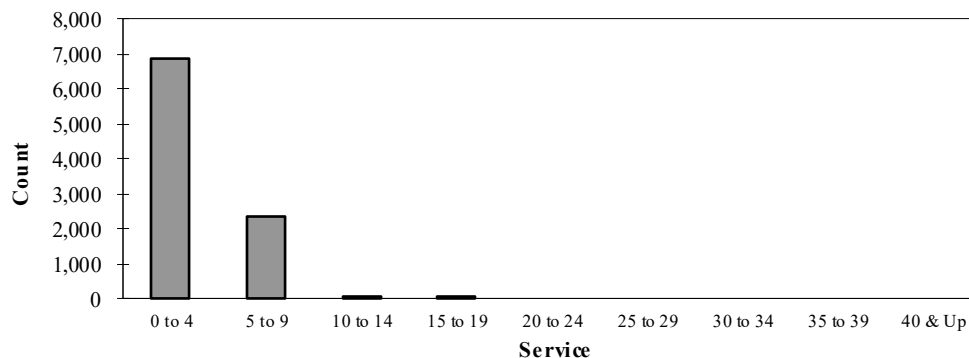
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	797	9	0	0	0	0	0	0	0	806
25 to 29	1,315	207	0	0	0	0	0	0	0	1,522
30 to 34	1,049	441	1	0	0	0	0	0	0	1,491
35 to 39	825	404	4	0	0	0	0	0	0	1,233
40 to 44	672	276	3	0	0	0	0	0	0	951
45 to 49	596	228	8	0	0	0	0	0	0	832
50 to 54	545	241	3	0	0	0	0	0	0	789
55 to 59	463	199	10	1	0	0	0	0	0	673
60 to 64	435	243	5	1	0	0	0	0	0	684
65 to 69	122	93	0	0	0	0	0	0	0	215
70 & Up	35	30	1	0	0	0	0	0	0	66
Total	6,854	2,371	35	2	0	0	0	0	0	9,262

* Effective date of KPERS 3 was January 1, 2015

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

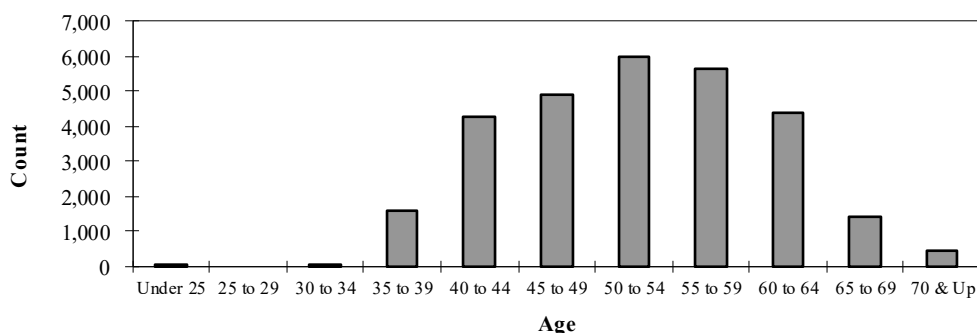
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

SCHOOL - KPERS 1*

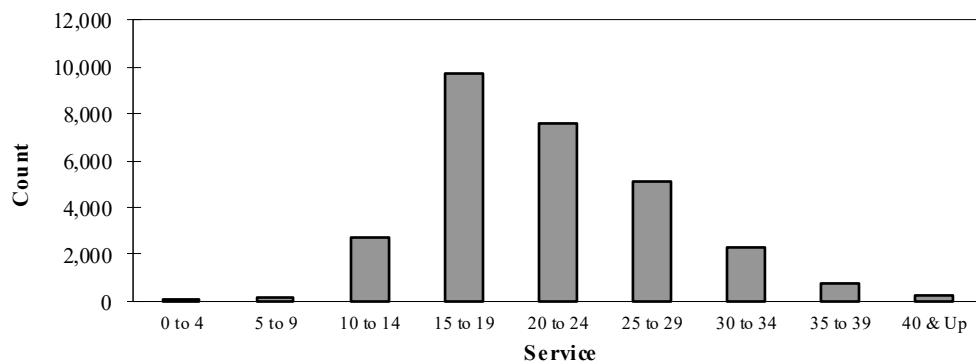
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	9	0	0	0	0	0	0	0	0	9
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	3	1	17	8	0	0	0	0	0	29
35 to 39	5	40	709	815	6	0	0	0	0	1,575
40 to 44	3	68	517	3,029	652	6	0	0	0	4,275
45 to 49	1	18	386	1,507	2,522	472	4	0	0	4,910
50 to 54	1	18	384	1,417	1,492	2,235	417	2	0	5,966
55 to 59	5	17	325	1,354	1,351	1,208	1,190	196	2	5,648
60 to 64	2	22	259	1,091	1,163	799	495	443	106	4,380
65 to 69	1	4	98	357	307	312	144	85	99	1,407
70 & Up	1	1	46	118	96	66	52	28	30	438
Total	31	189	2,741	9,696	7,589	5,098	2,302	754	237	28,637

* Closed effective July 1, 2009.

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

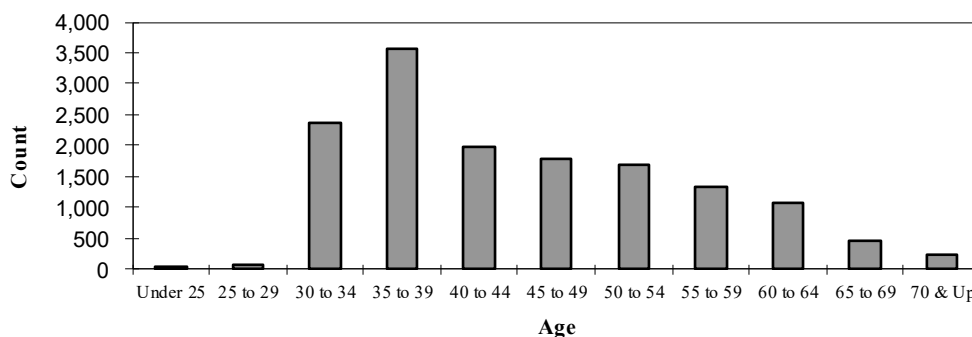
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

SCHOOL - KPERS 2*

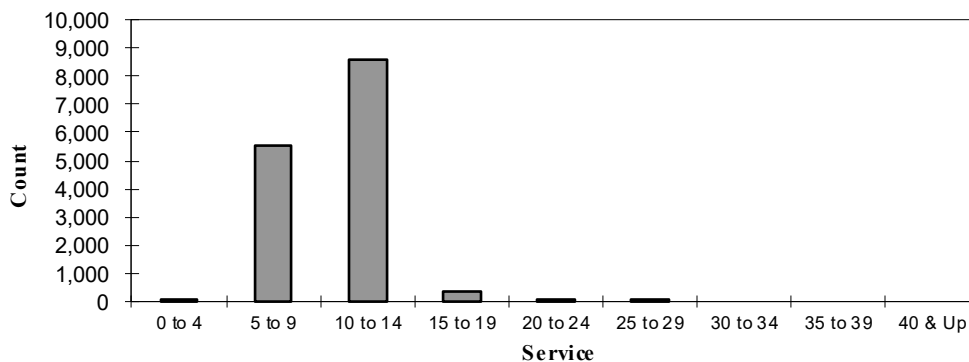
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	4	0	0	0	0	0	0	0	0	4
25 to 29	12	69	6	0	0	0	0	0	0	87
30 to 34	4	1,448	911	1	0	0	0	0	0	2,364
35 to 39	7	926	2,585	40	0	0	0	0	0	3,558
40 to 44	3	697	1,199	98	1	0	0	0	0	1,998
45 to 49	3	638	1,042	85	23	0	0	0	0	1,791
50 to 54	3	618	993	61	16	0	0	0	0	1,691
55 to 59	2	453	828	35	6	3	0	0	0	1,327
60 to 64	7	402	623	32	7	0	0	0	0	1,071
65 to 69	2	167	283	13	3	0	0	0	0	468
70 & Up	0	93	132	3	0	0	0	0	0	228
Total	47	5,511	8,602	368	56	3	0	0	0	14,587

* Effective date of KPERS 2 was July 1, 2009. Closed effective January 1, 2015.

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

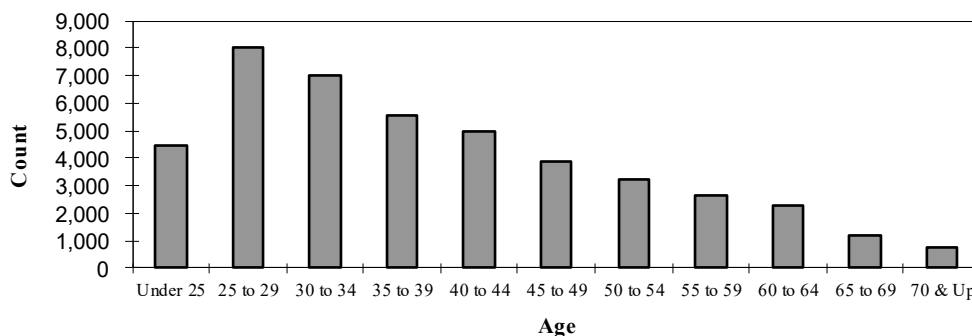
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

SCHOOL - KPERS 3*

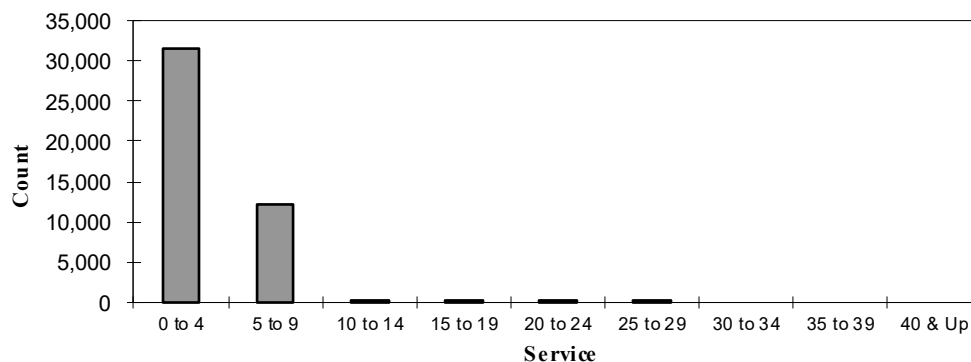
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	4,449	30	0	0	0	0	0	0	0	4,479
25 to 29	6,498	1,522	0	0	0	0	0	0	0	8,020
30 to 34	4,228	2,766	26	0	0	0	0	0	0	7,020
35 to 39	3,786	1,684	62	0	0	0	0	0	0	5,532
40 to 44	3,430	1,518	30	0	0	0	0	0	0	4,978
45 to 49	2,545	1,302	22	2	1	0	0	0	0	3,872
50 to 54	2,078	1,123	23	5	2	0	0	0	0	3,231
55 to 59	1,805	815	19	2	0	0	0	0	0	2,641
60 to 64	1,557	729	14	1	0	1	0	0	0	2,302
65 to 69	805	371	5	0	1	0	0	0	0	1,182
70 & Up	484	237	4	1	0	0	0	0	0	726
Total	31,665	12,097	205	11	4	1	0	0	0	43,983

* Effective date of KPERS 3 was January 1, 2015

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

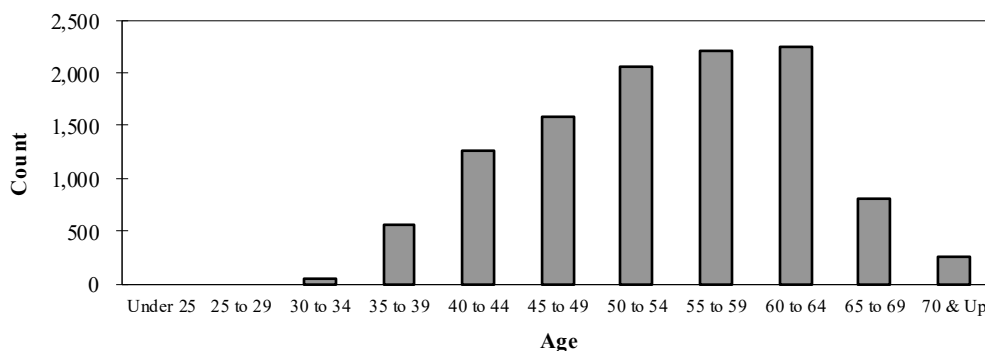
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

LOCAL - KPERS 1*

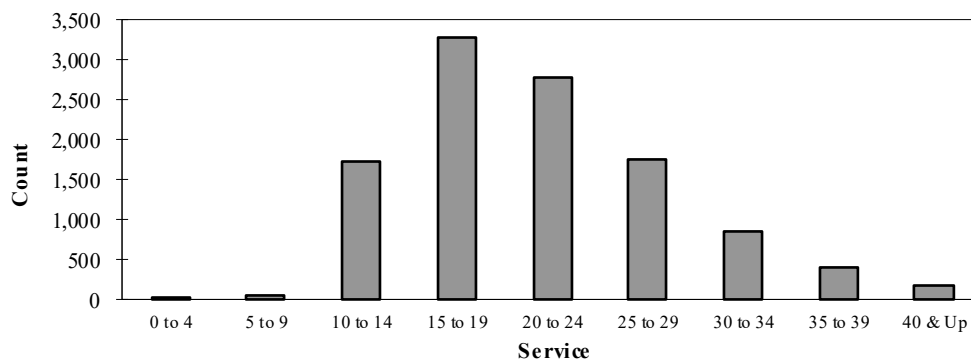
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	41	4	0	0	0	0	0	45
35 to 39	4	8	323	221	3	0	0	0	0	559
40 to 44	0	13	340	695	211	6	0	0	0	1,265
45 to 49	2	12	241	549	623	160	0	0	0	1,587
50 to 54	4	5	230	537	646	505	133	4	0	2,064
55 to 59	1	7	208	527	575	482	306	108	3	2,217
60 to 64	0	6	209	496	492	420	296	216	113	2,248
65 to 69	0	2	86	194	165	150	96	54	53	800
70 & Up	0	1	48	58	51	41	20	14	20	253
Total	11	54	1,726	3,281	2,766	1,764	851	396	189	11,038

* Closed effective July 1, 2009.

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

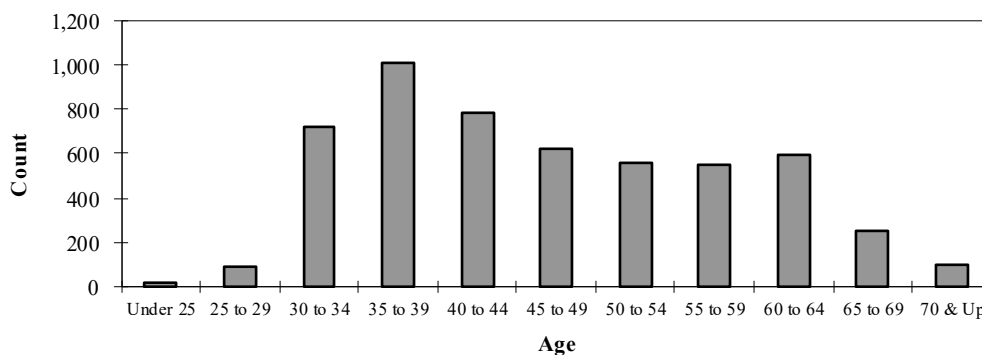
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

LOCAL - KPERS 2*

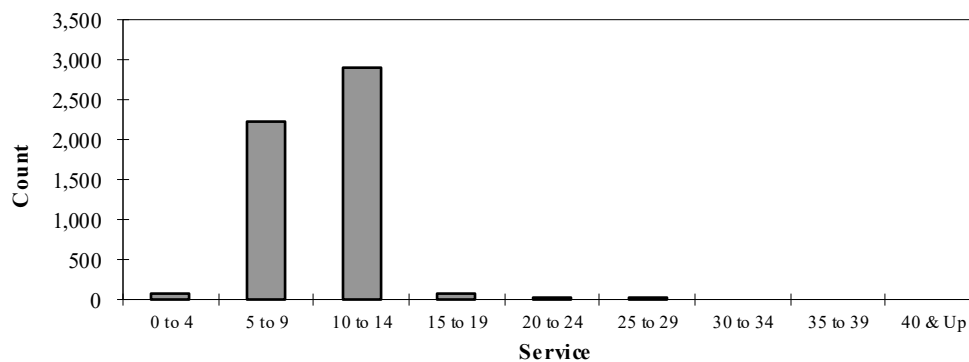
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	14	2	0	0	0	0	0	0	0	16
25 to 29	21	66	5	0	0	0	0	0	0	92
30 to 34	16	420	290	0	0	0	0	0	0	726
35 to 39	6	394	606	6	0	0	0	0	0	1,012
40 to 44	7	319	446	15	2	0	0	0	0	789
45 to 49	4	241	353	20	0	0	0	0	0	618
50 to 54	1	221	316	12	3	2	0	0	0	555
55 to 59	2	216	312	15	5	0	0	0	0	550
60 to 64	0	225	360	9	0	1	0	0	0	595
65 to 69	0	88	154	4	2	0	0	0	0	248
70 & Up	0	28	67	3	0	0	0	0	0	98
Total	71	2,220	2,909	84	12	3	0	0	0	5,299

* Effective date of KPERS 2 was July 1, 2009. Closed effective January 1, 2015.

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

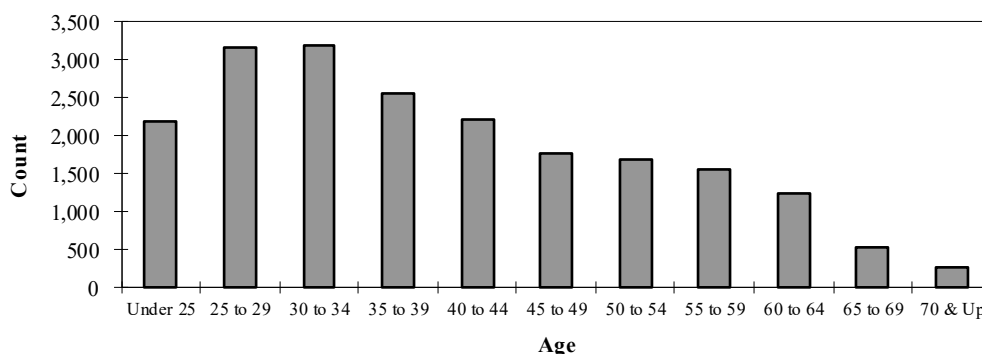
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

LOCAL - KPERS 3*

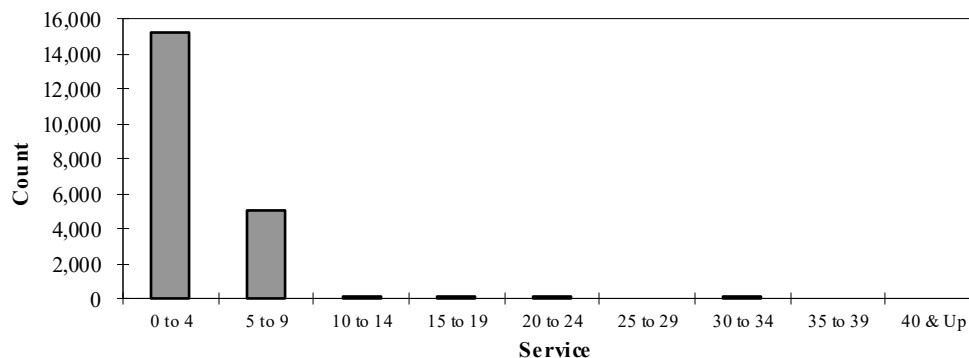
Age	Service										Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	2,172	23	0	0	0	0	0	0	0	0	2,195
25 to 29	2,633	527	0	0	0	0	0	0	0	0	3,160
30 to 34	2,315	869	11	0	0	0	0	0	0	0	3,195
35 to 39	1,789	749	16	0	0	0	0	0	0	0	2,554
40 to 44	1,558	635	8	0	0	0	0	0	0	0	2,201
45 to 49	1,245	505	5	1	0	0	0	0	0	0	1,756
50 to 54	1,180	487	11	0	1	0	0	0	0	0	1,679
55 to 59	1,065	475	7	1	0	0	0	0	0	0	1,548
60 to 64	770	456	7	0	0	0	1	0	0	0	1,234
65 to 69	330	203	2	0	0	0	0	0	0	0	535
70 & Up	150	104	0	0	1	0	0	0	0	0	255
Total	15,207	5,033	67	2	2	0	1	0	0	0	20,312

* Effective date of KPERS 3 was January 1, 2015

Age Distribution



Service Distribution





APPENDIX A – SUMMARY OF MEMBERSHIP DATA

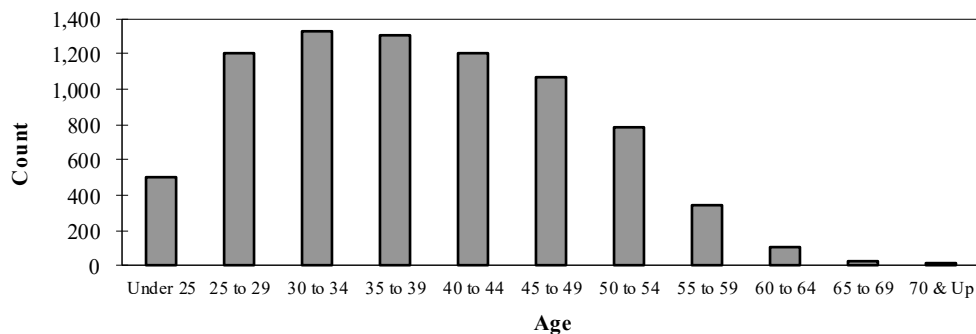
**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS*
as of December 31, 2022**

KP&F

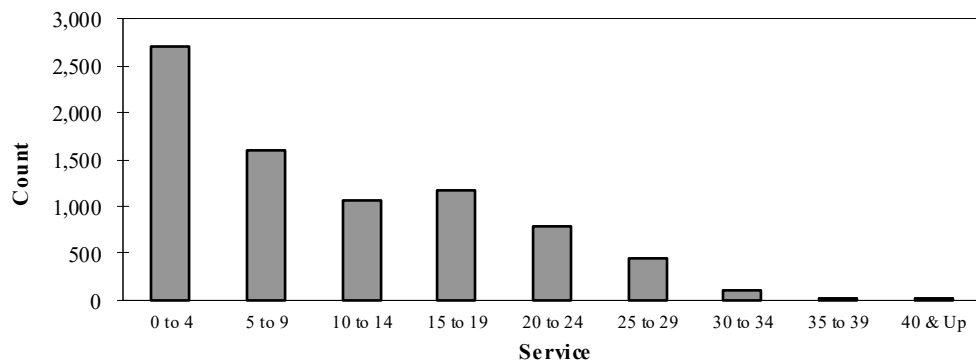
Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	503	0	0	0	0	0	0	0	0	503
25 to 29	948	255	0	0	0	0	0	0	0	1,203
30 to 34	561	625	146	0	0	0	0	0	0	1,332
35 to 39	296	385	458	168	0	0	0	0	0	1,307
40 to 44	162	164	251	487	135	0	0	0	0	1,199
45 to 49	90	88	113	277	365	136	0	0	0	1,069
50 to 54	79	42	57	150	222	205	24	1	0	780
55 to 59	39	28	31	59	45	80	49	8	0	339
60 to 64	13	12	9	15	11	23	23	4	1	111
65 to 69	4	4	3	6	1	2	2	1	1	24
70 & Up	1	0	0	0	0	0	0	0	0	1
Total	2,696	1,603	1,068	1,162	779	446	98	14	2	7,868

* Includes 44 KP&F members currently participating in DROP.

Age Distribution



Service Distribution





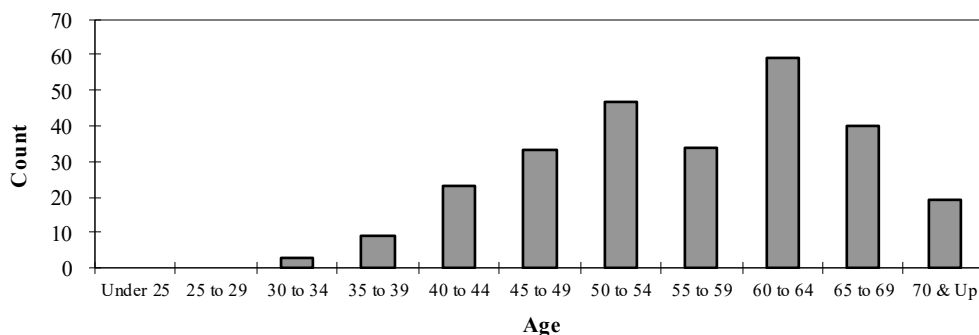
APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS
as of December 31, 2022**

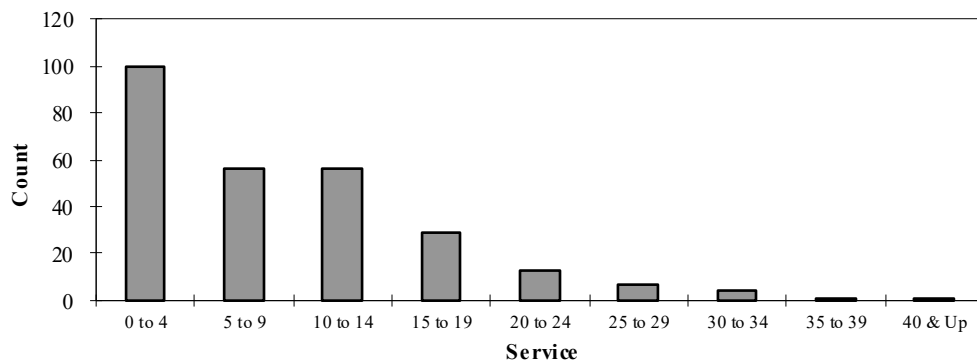
JUDGES

Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	3	0	0	0	0	0	0	0	0	3
35 to 39	8	0	1	0	0	0	0	0	0	9
40 to 44	16	4	3	0	0	0	0	0	0	23
45 to 49	18	10	5	0	0	0	0	0	0	33
50 to 54	25	15	4	2	0	1	0	0	0	47
55 to 59	9	5	13	6	1	0	0	0	0	34
60 to 64	15	9	13	14	7	1	0	0	0	59
65 to 69	5	9	11	6	3	2	4	0	0	40
70 & Up	1	4	6	1	2	3	0	1	1	19
Total	100	56	56	29	13	7	4	1	1	267

Age Distribution



Service Distribution



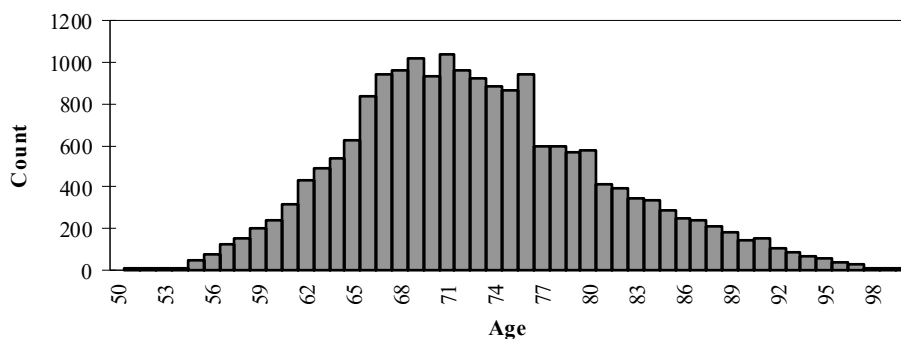


APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF RETIREES AND BENEFICIARIES
as of December 31, 2022**

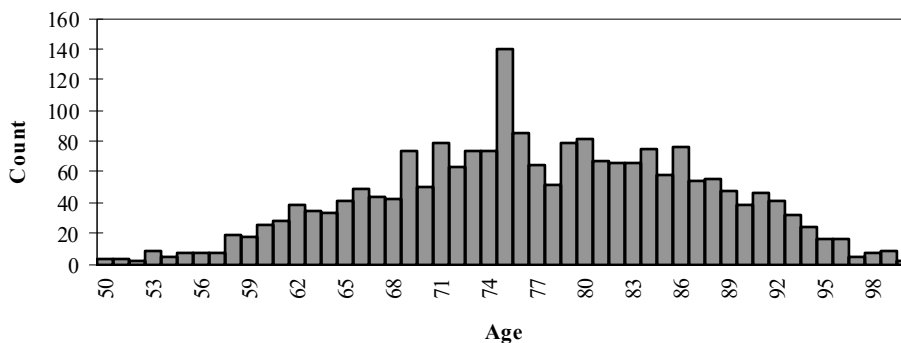
STATE

Retirees



Count: 19,280 Average age: 73.0 Average benefit: \$16,305

Beneficiaries



Count: 2,163 Average age: 76.6 Average benefit: \$10,153

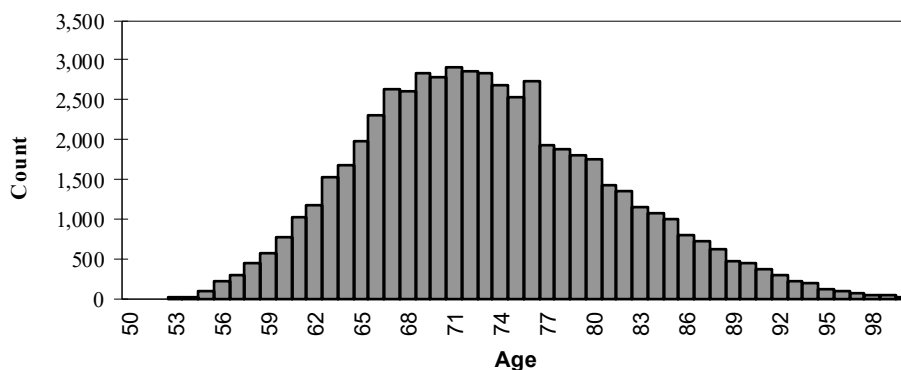


APPENDIX A – SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF RETIREES AND BENEFICIARIES
as of December 31, 2022

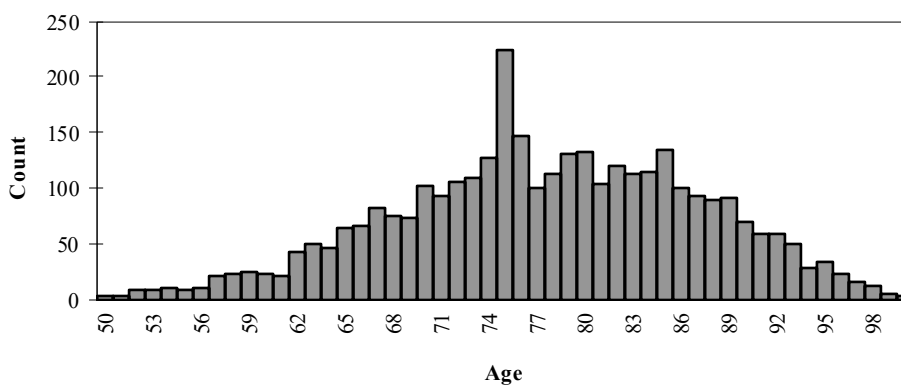
SCHOOL

Retirees



Count: 57,379 Average age: 73.2 Average benefit: \$17,159

Beneficiaries



Count: 3,403 Average age: 77.2 Average benefit: \$10,164

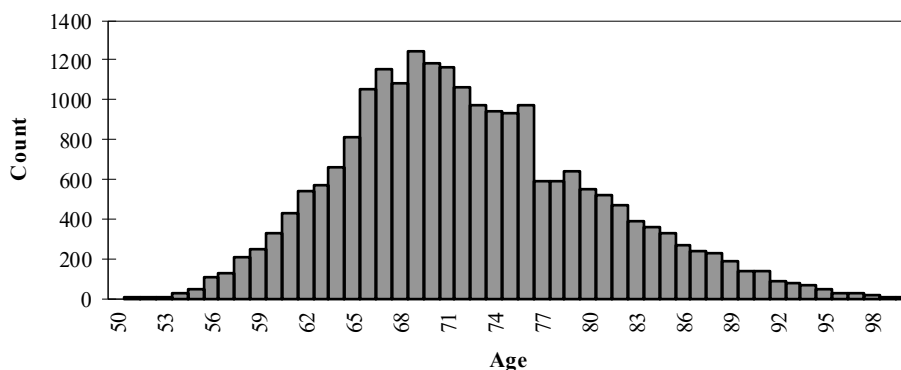


APPENDIX A – SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF RETIREES AND BENEFICIARIES
as of December 31, 2022

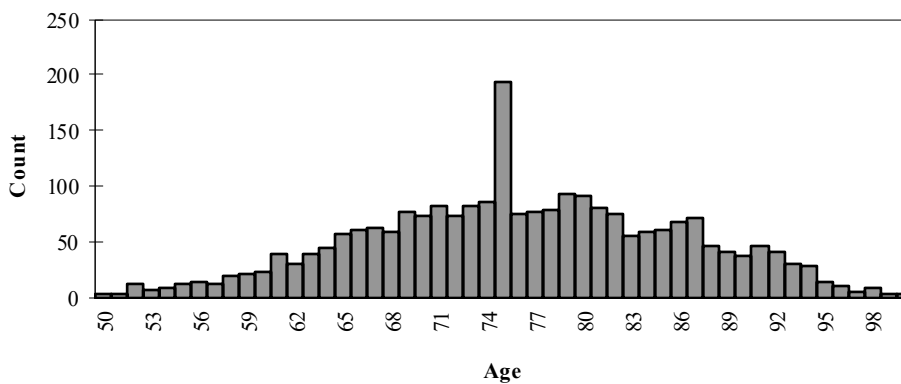
LOCAL

Retirees



Count: 21,845 Average age: 72.4 Average benefit: \$15,014

Beneficiaries



Count: 2,405 Average age: 75.6 Average benefit: \$8,566

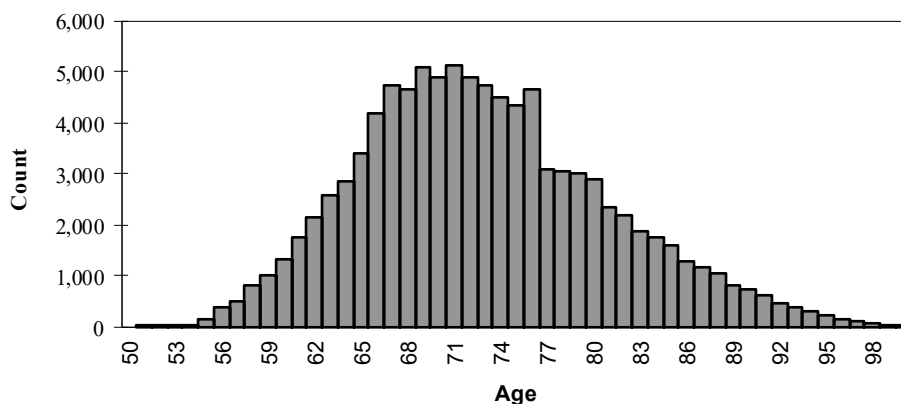


APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF RETIREES AND BENEFICIARIES**
as of December 31, 2022

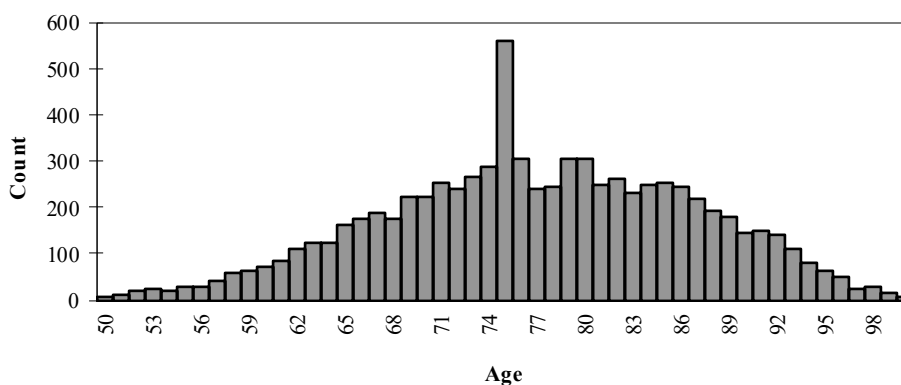
TOTAL KPERS

Retirees



Count: 98,504 Average age: 73.0 Average benefit: \$16,516

Beneficiaries



Count: 7,971 Average age: 76.6 Average benefit: \$9,679

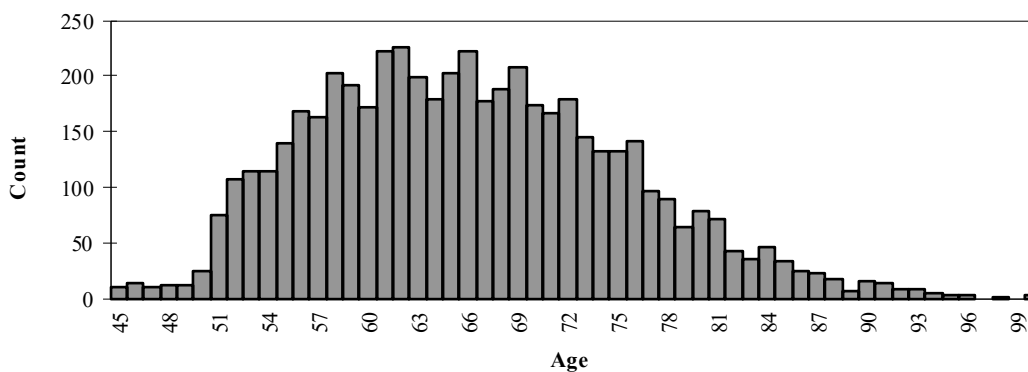


APPENDIX A – SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF RETIREES AND BENEFICIARIES
as of December 31, 2022

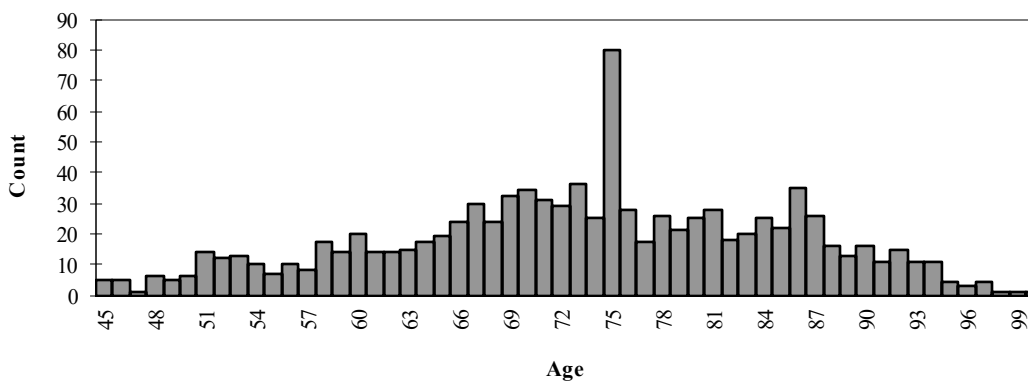
KP&F

Retirees



Count: 5,184 Average age: 65.7 Average benefit: \$40,760

Beneficiaries



Count: 1,040 Average age: 70.5 Average benefit: \$19,245

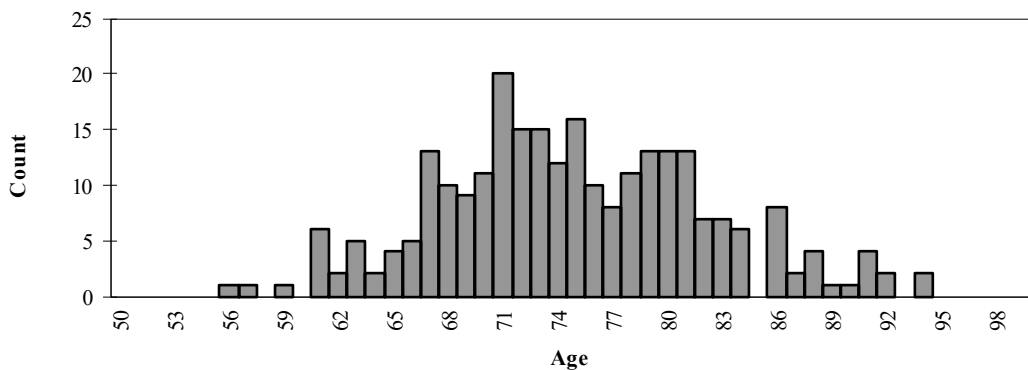


APPENDIX A – SUMMARY OF MEMBERSHIP DATA

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF RETIREES AND BENEFICIARIES
as of December 31, 2022

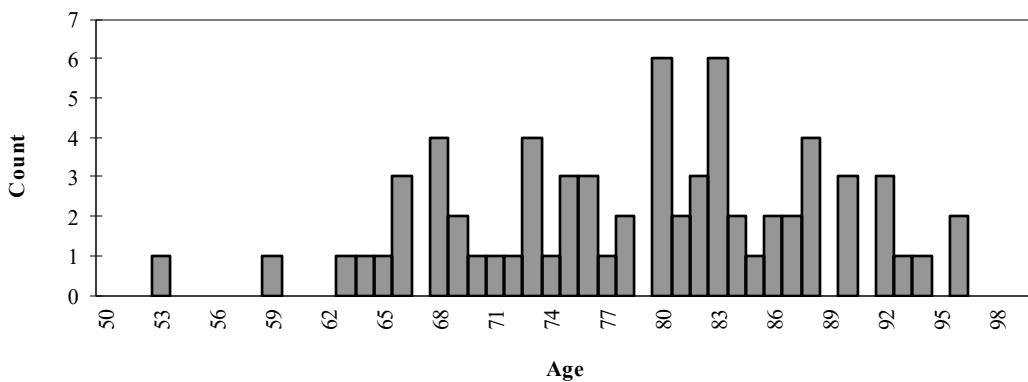
JUDGES

Retirees



Count: 260 Average age: 74.9 Average benefit: \$48,027

Beneficiaries



Count: 72 Average age: 78.1 Average benefit: \$29,803



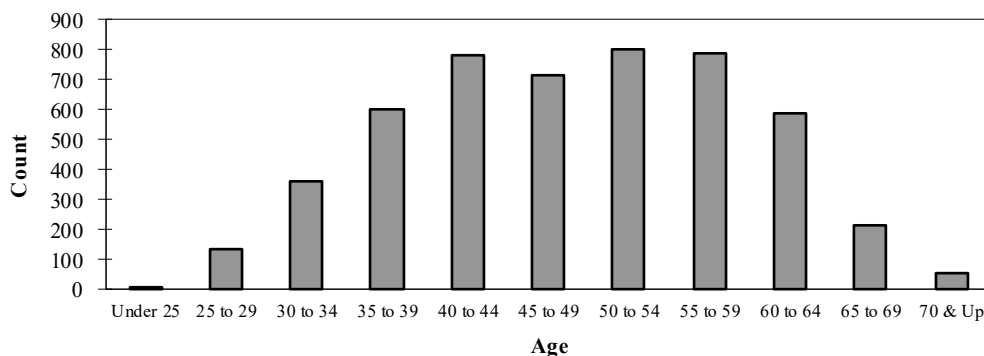
APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF INACTIVE VESTED MEMBERS
as of December 31, 2022**

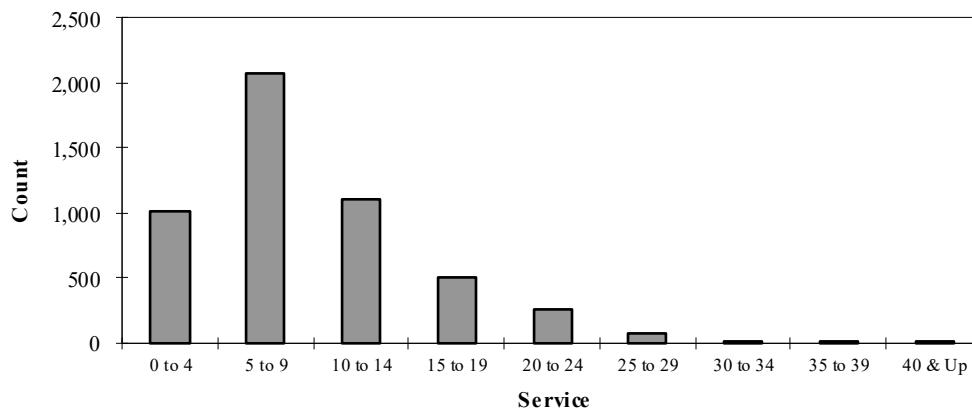
STATE

Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	7	0	0	0	0	0	0	0	0	7
25 to 29	78	56	0	0	0	0	0	0	0	134
30 to 34	138	214	11	0	0	0	0	0	0	363
35 to 39	187	330	79	7	0	0	0	0	0	603
40 to 44	175	383	171	46	6	0	0	0	0	781
45 to 49	134	270	188	92	28	4	0	0	0	716
50 to 54	105	241	236	118	86	13	1	0	0	800
55 to 59	67	243	225	131	81	37	3	1	0	788
60 to 64	59	245	138	82	48	12	5	1	0	590
65 to 69	37	80	53	23	9	7	4	0	1	214
70 & Up	22	10	8	7	3	1	1	0	1	53
Total	1,009	2,072	1,109	506	261	74	14	2	2	5,049

Age Distribution



Service Distribution





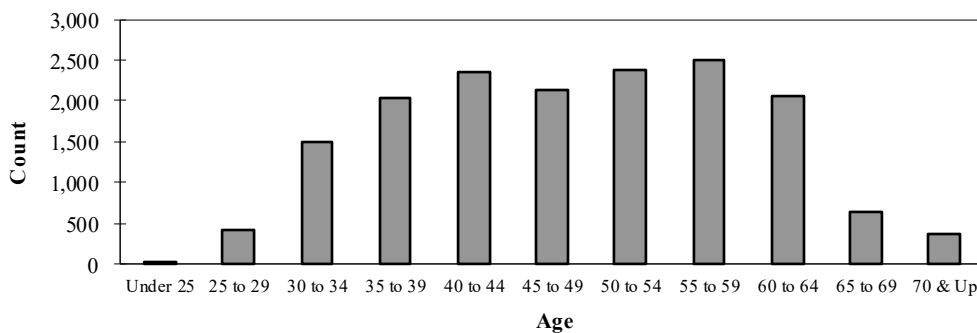
APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF INACTIVE VESTED MEMBERS
as of December 31, 2022**

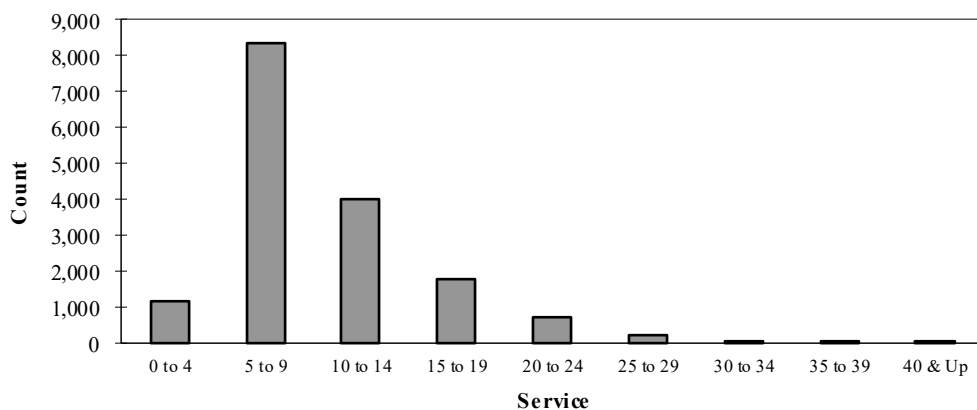
SCHOOL

Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	5	6	0	0	0	0	0	0	0	11
25 to 29	101	304	1	0	0	0	0	0	0	406
30 to 34	175	1,252	79	0	0	0	0	0	0	1,506
35 to 39	156	1,393	436	50	0	0	0	0	0	2,035
40 to 44	133	1,323	624	251	20	0	0	0	0	2,351
45 to 49	117	924	589	353	132	8	0	0	0	2,123
50 to 54	116	920	692	373	198	78	4	0	0	2,381
55 to 59	91	880	800	402	219	90	15	1	0	2,498
60 to 64	106	944	578	278	123	32	5	2	0	2,068
65 to 69	50	292	172	79	24	17	2	1	1	638
70 & Up	145	108	75	25	12	2	1	0	1	369
Total	1,195	8,346	4,046	1,811	728	227	27	4	2	16,386

Age Distribution



Service Distribution





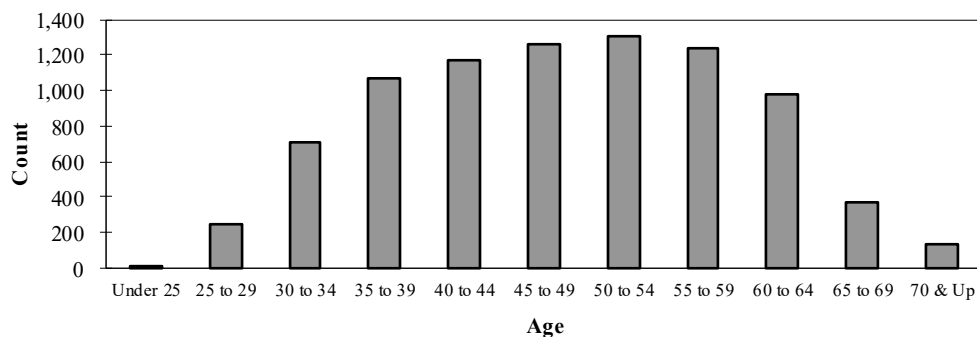
APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF INACTIVE VESTED MEMBERS
as of December 31, 2022**

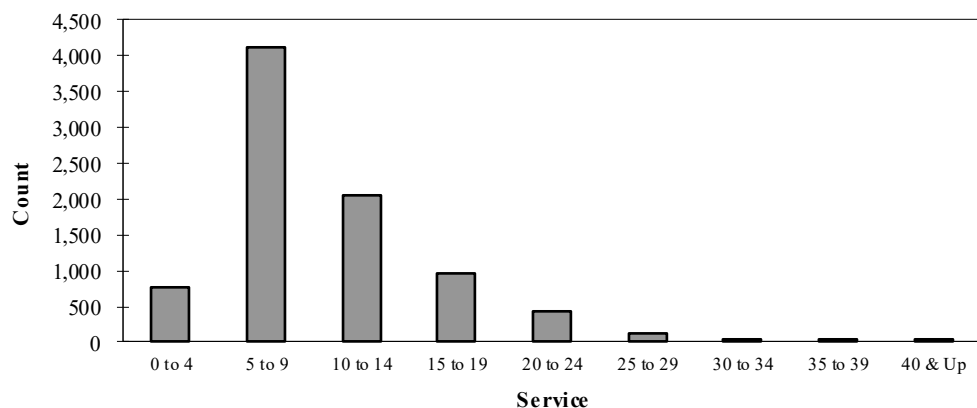
LOCAL

Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	4	1	0	0	0	0	0	0	0	5
25 to 29	78	174	0	0	0	0	0	0	0	252
30 to 34	135	526	43	0	0	0	0	0	0	704
35 to 39	125	705	209	25	0	0	0	0	0	1,064
40 to 44	96	669	305	92	11	0	0	0	0	1,173
45 to 49	69	550	359	211	71	5	0	0	0	1,265
50 to 54	48	441	405	237	129	42	6	0	0	1,308
55 to 59	52	434	363	206	126	49	6	0	0	1,236
60 to 64	73	413	252	122	77	24	9	4	1	975
65 to 69	35	167	88	44	17	12	5	3	1	372
70 & Up	44	48	20	12	3	0	2	1	0	130
Total	759	4,128	2,044	949	434	132	28	8	2	8,484

Age Distribution



Service Distribution





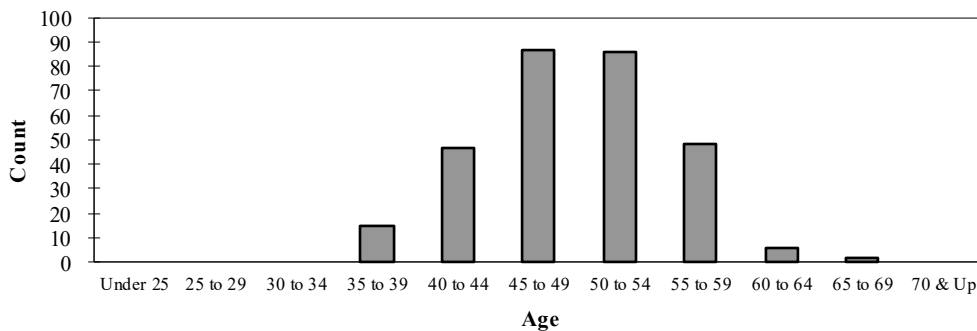
APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF INACTIVE VESTED MEMBERS
as of December 31, 2022**

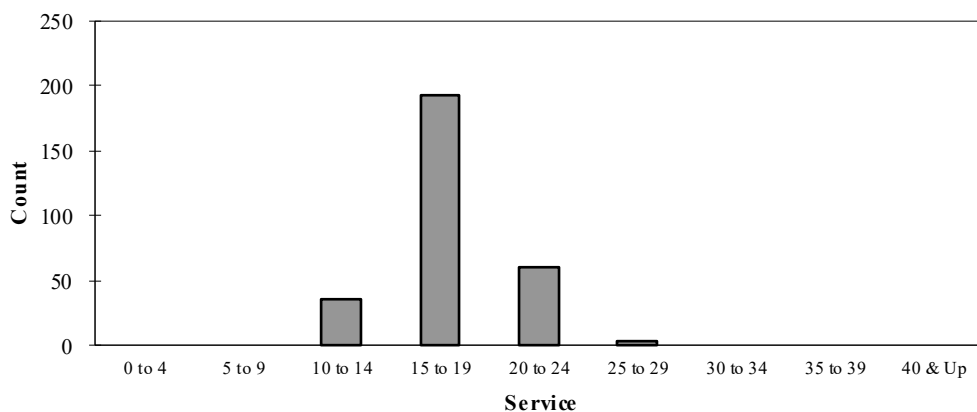
KP&F

Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	3	12	0	0	0	0	0	15
40 to 44	0	0	3	40	4	0	0	0	0	47
45 to 49	0	0	10	50	26	1	0	0	0	87
50 to 54	0	0	9	55	19	3	0	0	0	86
55 to 59	0	0	9	30	9	0	0	0	0	48
60 to 64	0	0	1	4	1	0	0	0	0	6
65 to 69	0	0	0	1	1	0	0	0	0	2
70 & Up	0	0	0	0	0	0	0	0	0	0
Total	0	0	35	192	60	4	0	0	0	291

Age Distribution



Service Distribution





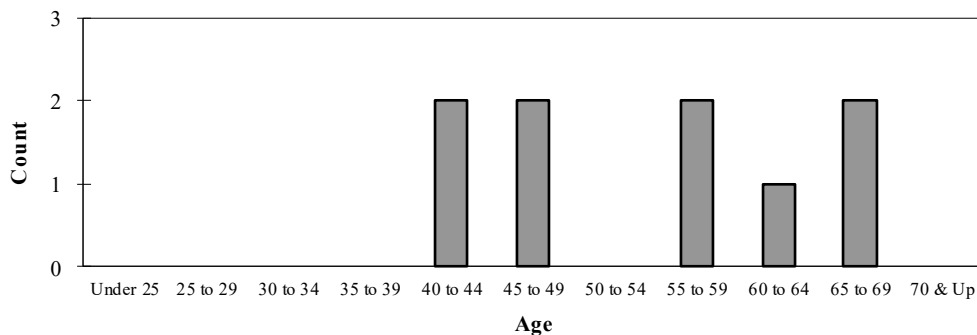
APPENDIX A – SUMMARY OF MEMBERSHIP DATA

**KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
DISTRIBUTION OF INACTIVE VESTED MEMBERS
as of December 31, 2022**

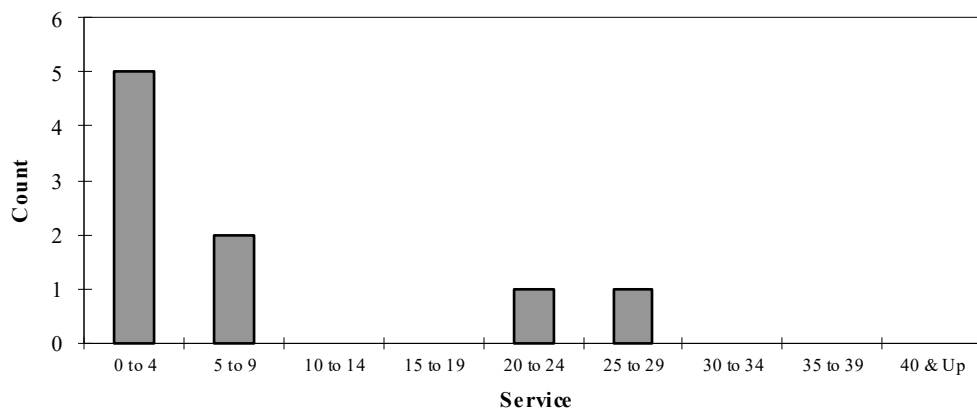
JUDGES

Age	Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	1	1	0	0	0	0	0	0	0	2
45 to 49	2	0	0	0	0	0	0	0	0	2
50 to 54	0	0	0	0	0	0	0	0	0	0
55 to 59	2	0	0	0	0	0	0	0	0	2
60 to 64	0	1	0	0	0	0	0	0	0	1
65 to 69	0	0	0	0	1	1	0	0	0	2
70 & Up	0	0	0	0	0	0	0	0	0	0
Total	5	2	0	0	1	1	0	0	0	9

Age Distribution



Service Distribution





APPENDIX B – SUMMARY OF PLAN PROVISIONS

Plan Membership

The Kansas Public Employees Retirement System (the Retirement System, or, the System), is an umbrella organization administering three statewide retirement systems: the Kansas Public Employees Retirement System (KPERS), the Kansas Police and Firemen’s Retirement System (KP&F), and the Kansas Retirement System for Judges. All three systems are defined benefit, contributory plans that cover nearly all public employees in Kansas. The Kansas Retirement System for Judges is a single employer plan, while the other two are cost-sharing, multiple employer plans. Participation by the State of Kansas is mandatory, whereas participation by local political subdivisions is optional, but irrevocable once elected. Benefit payments are also provided for a certain group of legislative employees.

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM Summary of Provisions *

* KPERS 2 refers to members who either began their participation or rehired on or after July 1, 2009, but before January 1, 2015. KPERS 3 refers to non-corrections members who either began their participation or rehired on or after January 1, 2015. Corrections members do not participate in KPERS 3.

This valuation reflects the benefit structure in place as of December 31, 2022.

Employee Membership

Membership is mandatory for all employees in covered positions, except elected officials. A covered position for non-school employees is one that is covered by Social Security, is not seasonal or temporary, and requires at least 1,000 hours of work per year. School employees who work at least 630 hours per year or 3.5 hours per day for at least 180 days are eligible for membership. Effective July 1, 2009, all employees become KPERS members on their date of employment. Prior to July 1, 2009, only School employees were covered immediately, but there was a one-year service requirement for the State and Local groups. Members who retire under the provisions of the Retirement System may not become contributing members again.

Normal Retirement

Eligibility –

KPERS 1: (a) Age 65, or (b) age 62 with ten years of credited service, or (c) any age when combined age and years of credited service equal 85 “points”. Age is determined by the member’s last birthday and is not rounded up.

KPERS 2 & 3: (a) Age 65 with 5 years of credited service or (b) age 60 with 30 years of credited service.

Benefit –

KPERS 1 & 2: Benefits are based on the member’s years of credited service, Final Average Salary (FAS), and a statutory multiplier. For those who were hired prior to July 1, 1993, Final Average Salary equals the greater of either: a four-year Final Average Salary, including add-ons, such as sick and annual leave; or a three-year Final Average Salary, excluding add-ons, such as sick and annual leave. For those who are hired on or after July 1, 1993 and before July 1, 2009, Final Average Salary equals the average of the three highest years of salary, excluding add-ons, such as sick and annual leave. Effective July 1, 2009, (KPERS 2), Final Average Salary equals the average of the five highest years of salary, excluding additional compensation.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

KPERS 3: KPERS 3 members participate in a cash balance plan with benefits based on the Annuity Savings Account balance, the Retirement Annuity Account balance, and an annuity factor. The member’s annuity factor at retirement is based on the member’s age and benefit payment form. The current annuity factors were adopted by the Board upon recommendation of the actuary. They are expected to be updated periodically. The interest rate used to calculate the current annuity factors is 5.00% (7.00% assumed investment return, minus 2.00%), and the mortality table used is a set of blended mortality rates from the current post-retirement mortality assumptions for KPERS members. The blended mortality rates are projected to 2030 using improvement scale MP-2016. The weighting used to blend the mortality rates is shown in the following table:

	<u>Members</u>	<u>Beneficiaries</u>
State – Males	17.5%	42.5%
State – Females	42.5%	17.5%
School – Males	7.5%	8.5%
School – Females	8.5%	7.5%
Local – Males	12.5%	11.5%
Local– Females	11.5%	12.5%

A member’s Annuity Savings Account balance is the sum of mandatory member contributions plus the interest credits and dividends on those contributions. A member’s Retirement Annuity Account is the sum of all employer retirement credits to the account plus the interest credits and dividends on those credits.

Mandatory member contributions are 6% of compensation. The employer retirement credits follow the schedule below:

<u>Years of Service</u>	<u>Retirement Credit Rate</u>
Less than 5	3%
5 – 11	4%
12 – 23	5%
24 or more	6%

Interest credits are 4% per annum, paid quarterly. The interest credits are based on the account balances as of the last day of the preceding quarter. There is also a possibility of additional interest credits, depending on KPERS’ investment return. These additional interest credits are called “dividends” and are equal to 75% of the five-year average net compound rate of return, as determined by the board, for the preceding calendar year and the previous four calendar years on the market value of assets that is above 6.0%. A schedule of dividend rates over the past five years is contained in the following table:

<u>Year</u>	<u>Applicable Rate of Return</u>	<u>Compound Average</u>	<u>Dividend</u>
2018	(2.9%)	4.7%	0.000%
2019	17.1%	7.1%	0.825%
2020	11.1%	9.3%	2.475%
2021	15.7%	10.7%	3.525%
2022	(9.8%)	5.7%	0.000%



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Prior Service Credit – Prior service credit is 0.75% or 1.00% of Final Average Salary per year [School employees receive 0.75% of Final Average Salary for each year of prior service that is not credited under the former Kansas School Retirement System (KSRS)].

Participating Service Credit –

KPERS 1: Participating service credit is 1.75% of Final Average Salary for years of service prior to January 1, 2014. Participating service credit is 1.85% of Final Average Salary for years of service after December 31, 2013.

KPERS 2: For those retiring on or after January 1, 2012, participating service credit is 1.85% for all years of service.

KPERS 3: Not applicable for the Cash Balance Plan.

Early Retirement

Eligibility – Eligibility is age 55 and 10 years of credited service.

Benefit –

KPERS 1: The normal retirement benefit is reduced 0.2% per month for each month between the ages of 60 and 62, and 0.6% for each month between the ages of 55 and 60.

KPERS 2: The normal retirement benefit is reduced actuarially for early commencement. The reduction factor is 35.0% at age 60 and 57.5% at age 55. If the member has 30 years of credited service, the early retirement reduction is less (50% of regular reduction).

KPERS 3: The early retirement benefit is determined in the same manner as a normal retirement benefit, but is based on the account balances and annuity factor at the member's retirement age.

Vesting Requirements

Eligibility – Effective July 1, 2009, a member must have five years of credited service (ten years prior to July 1, 2009). Should the vested member terminate employment, the member must leave accumulated contributions on deposit with the Retirement System to be eligible for future benefits. If a vested member terminates employment and withdraws accumulated contributions, the member forfeits all rights and privileges under the Retirement System.

Benefit –

KPERS 1 & 2: Retirement benefits are payable when the vested member reaches normal retirement age, or reduced benefits are payable when the vested member reaches a specified early retirement age.

KPERS 3: Retirement benefits are payable when the vested member meets the retirement eligibility requirements and is based on the member's account balances at retirement. The member's vested account will be granted interest credits and dividends during the deferral period between termination of employment and retirement.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Other Benefits

Withdrawal Benefit – Members who terminate employment may withdraw contributions with interest after the last day on the employer’s payroll. Withdrawing member contributions forfeits all membership rights and benefits, which a member may have accrued prior to withdrawing their contributions from the Retirement System. Inactive, non-vested members who return to covered employment within five years after terminating employment, will not have lost any membership rights or privileges if they *haven’t* withdrawn contributions. The Retirement Act provides for withdrawal of contributions 31 days after employment terminates, but it does not allow members to borrow from contributions.

Disability Benefit –

KPERS 1 & 2: Members receiving disability benefits under the KPERS Death and Disability Benefits Program continue to receive service credit under KPERS. If a disabled member retires after receiving disability benefits for at least five years immediately preceding retirement, the member’s Final Average Salary is adjusted by the actuarial salary increase assumption rates in existence during the member’s period of disability prior to July 1, 1993, 5% per year to July, 1998 and the change in CPI-U less 1%, not to exceed 4% after July, 1998.

KPERS 3: For any KPERS 3 member who becomes disabled, such member’s Annuity Savings Account and Retirement Annuity Account will be credited with employee contributions, employer retirement credits, interest credits and dividends for the entire period of disability, but no later than the member’s normal retirement age. The salary upon which credits are based shall be the employee’s salary at the time of disability. After five years of disability, the underlying salary shall be increased by the lesser of (a) the percentage increase in CPI-U, minus 1%, and (b) 4% per annum.

Death Benefits – Pre-retirement death (non-service connected) –

KPERS 1 & 2: The member’s accumulated contributions plus interest are paid in a lump sum to the designated beneficiary. In lieu of receiving the member’s accumulated contributions, the surviving spouse of a member who is eligible to retire at death may elect to receive benefits under any survivor option. The spouse must be the member’s sole designated beneficiary to exercise this option. If the member had at least 10 years of credited service, but had not reached retirement age, the spouse may elect to leave the member’s contributions on deposit with the System and receive a monthly benefit to begin on the date the member would have been eligible to retire.

KPERS 3: If a vested member dies before attaining normal retirement age, the member’s surviving spouse shall receive an annuity on the date the member would have attained normal retirement age had such member not died. The benefit is based upon the member’s Annuity Savings Account and Retirement Annuity Account, and is payable as a single life annuity with 10-year certain.

Service-connected accidental death – The member’s accumulated contributions plus interest, plus lump sum amount of \$50,000, plus annual benefit based on 50% of Final Average Salary; reduced by Workers’ Compensation benefits and subject to a minimum benefit of \$100 a month; are payable to a spouse, minor children, or dependent parents, for life, or until the youngest child reaches age 18 (or up to age 23 if they are full-time students), in this order of preference. The monthly accidental death benefit is in lieu of any joint/survivor benefit for which the surviving spouse would have been eligible. For KPERS 3 members, Final Average Salary equals the average of the three final years of salary.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Post-retirement death – A lump sum amount of \$4,000 is payable to the member’s beneficiary. If the member has selected a retirement option, benefits are paid to the joint annuitant or the designated beneficiary. Under joint and survivor retirement options, if the joint annuitant predeceases the retired member, the reduced option benefit is increased to the amount the retired member would have received if no retirement option had been elected. Benefits payable to a joint annuitant cease at the joint annuitant’s death. If a member does not select an option, the designated beneficiary receives the excess, if any, of the member’s accumulated contributions plus interest over total benefits paid to date of death.

Member Contributions

KPERS 1: Prior to January 1, 2014, member contributions were 4% of compensation for KPERS 1. 2012 HB 2333 established an election by KPERS 1 members, contingent upon IRS approval, between different contribution rate and benefit levels. The legislation provided that, if the IRS rejected or did not take action to approve the election, KPERS 1 members would default to an increase in their employee contributions to 5% of compensation effective January 1, 2014, and 6% effective January 1, 2015, with an increase in the benefit multiplier to 1.85% beginning January 1, 2014, for future years of service only. Subsequently, the IRS issued a private letter ruling stating that the election granted to KPERS 1 members under 2012 HB 2333 was impermissible.

KPERS 2: The member contribution rate for KPERS 2 is 6% of compensation.

KPERS 3: The member contribution rate for KPERS 3 is 6% of compensation.

Interest on Member Contributions

KPERS 1: Interest is credited to members’ contribution accounts on June 30 each year, based on the account balance as of the preceding December 31. Those who became members prior to July 1, 1993, have interest credited to their accounts at the rate of 8% per year. Those who become members on and after July 1, 1993, have interest credited to their accounts at the rate of 4% per year.

KPERS 2: Interest is credited to members’ contribution accounts on June 30 each year, based on the account balance as of the preceding December 31, at the rate of 4% per year.

KPERS 3: Interest credited varies by years of service. Please refer to the KPERS 3 Benefit section under Normal Retirement in these Plan Provisions.

Employer Contributions

Rates are certified by the Board of Trustees, based on the results of annual actuarial valuations and statutory provisions.

Board of Regents Plan Members (TIAA and equivalents)

Board of Regents plan members (TIAA and equivalents) do not make contributions to KPERS.

Group A: Joined the Board of Regents prior to January 1, 1962. These members receive prior service benefits for service before 1962. The benefit is 1.00% of Final Average Salary for each year of credited prior service. The Final Average Salary is calculated using current pay as a member of the Board of Regents, if higher than pay received under KPERS. Service after 1961 is counted for purposes of determining eligibility for vesting.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Group B: Joined the Board of Regents after January 1, 1962, but prior to July 1, 1998. These members receive prior service benefits for service credited under KPERS. The benefit is 1.75% of Final Average Salary for each year of credited prior service. The Final Average Salary is calculated using current pay as a member of the Board of Regents, if higher than pay received under KPERS. Service after joining the Board of Regents is counted for purposes of determining eligibility for vesting.

Group C: Joined the Board of Regents after July 1, 1998. These members receive prior service benefits for service credited under KPERS. The benefit is 1.75% or 1.85% (as applicable under the KPERS1 and KPERS2 benefit provisions) of Final Average Salary for each year of credited prior service. The Final Average Salary is calculated using current pay as a member of the Board of Regents, if higher than pay received under KPERS. Service after 1961 is counted for purposes of determining eligibility for vesting.

Correctional Members

Correctional employees, as certified to the Board of Trustees by the Secretary of Corrections, are defined in K.S.A. 74-4914a: (a) correctional officers, (b) certain directors and deputy directors of correctional institutions, (c) correctional power plant operators, (d) correctional industries employees, (e) correctional food service employees, and (f) correctional maintenance employees.

KPERS 1: For groups (a) and (b) with at least 3 consecutive years of credited service in such positions immediately preceding retirement, normal retirement age is 55 or Rule of 85; and early retirement requirements are age 50 with 10 years of credited service. For groups (c), (d), (e), and (f) with at least 3 consecutive years of service in such positions immediately preceding retirement, normal retirement age is 60 or Rule of 85, and early retirement requirements are 55 with 10 years of credited service.

KPERS 2: For groups (a) and (b) with at least 3 consecutive years of credited service in such positions immediately preceding retirement, normal retirement age is 55 with 10 years of credited service, and early retirement requirements are age 50 with 10 years of credited service. For groups (c), (d), (e), and (f) with at least 3 consecutive years of service in such positions immediately preceding retirement, normal retirement age is 60 with 10 years of credited service, and early retirement requirements are 55 with 10 years of credited service.

Cost of Living Adjustments (COLAs)

KPERS 2 Members Who Retired Prior to July 1, 2012: 2% cost-of-living adjustment (COLA) each year beginning at age 65 or the second July 1 after the retirement date, whichever is later. Other KPERS 2 members will not receive a COLA.

KPERS 3: Upon retirement, the benefit option selected by the member may include a self-funded cost of living adjustment feature, in which the account value is converted to a benefit amount that increases by a fixed percentage over time.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

KANSAS POLICE & FIREMEN’S RETIREMENT SYSTEM

Normal Retirement

Tier I – age 55 and 20 years of service or 32 years of service (regardless of age).

Tier II – age 50 and 25 years of service, or age 55 and 20 years of service, or age 60 and 15 years of service.

Benefits – Benefits are based on the member’s Final Average Salary. For those who were hired prior to July 1, 1993, Final Average Salary equals the average of the highest three of the last five years of credited participating service, including add-ons, such as sick and annual leave. For those who are hired on or after July 1, 1993, Final Average Salary equals the average of the highest three of the last five years of participating service, excluding add-ons, such as sick and annual leave. Benefits are based on a member’s years of credited service and a multiplier of 2.5% of Final Average Salary for each year of credited service, to a maximum of 90% of Final Average Salary (first effective July 1, 2013).

Local Plan – For members covered by local plan provisions on the employer’s entry date, normal retirement is at age 50 with 22 years of credited service.

Early Retirement

Eligibility – Members must be at least age 50 and have 20 years of credited service.

Benefit – Normal retirement benefits are reduced 0.4% per month under age 55.

Vesting Requirements

Eligibility – Tier I: The member must have 20 years of credited service; if terminating employment, the member must leave contributions on deposit with the Retirement System to be eligible for future benefits. Unreduced benefits are payable at age 55 or reduced benefits are payable as early as age 50.

Eligibility – Tier II: The member must have 15 years of credited service to be considered vested. If terminating employment, the member must leave contributions on deposit with the Retirement System to be eligible for future benefits. A vested member may draw unreduced benefits as early as age 50 with 25 years of credited service, age 55 with 20 years of credited service, or age 60 with 15 years of credited service. A reduced benefit is available at age 50 with 20 years of credited service.

Other Benefits

Withdrawal Benefits – Members who terminate employment before retirement may withdraw contributions with interest after the last day on the employer’s payroll. Withdrawal of contributions forfeits all membership rights and benefits, which a member may have accrued prior to withdrawing accumulated contributions from the Retirement System. Inactive, nonvested members, who return to covered employment within five years after terminating employment, will not have lost any membership rights or privileges if they *haven’t* withdrawn contributions.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Disability Benefits

Tier I: Service-connected disability – There are no age or service requirements to be eligible for this benefit. There is an annual benefit of 50% of Final Average Salary, plus 10% of Final Average Salary for each dependent child under age 18 (or up to age 23 for full-time students), to a maximum of 75% of Final Average Salary. If dependent child benefits aren't payable, the benefit is 50% of Final Average Salary or 2.5% for each year of credited service up to a maximum of 90% of Final Average Salary. Upon the death of a member after two years from the proximate cause of death which is the original service-connected disability, the same benefits are payable. Upon the death of a member after two years from a cause different than the disability for which the member is receiving service-connected disability benefits, the surviving spouse receives a lump sum payment of 50% of Final Average Salary. Additionally, a pension benefit of one-half the member's benefit is payable to either the spouse or to the dependent children.

Tier I: Non-Service-connected disability – An annual benefit of 2.5% times years of credited service times Final Average Salary with a minimum of 25% of FAS and a maximum of 90% of FAS.

Tier II: Service-connected disability – The annual benefit is 50% of Final Average Salary. Service Credit is granted during the period of disability. Disability benefits convert to age and service retirement at the earliest date the member is eligible for full retirement benefits. If the member is disabled for at least five years immediately preceding retirement, the member's Final Average Salary is adjusted during the period of disability. If the member dies prior to the conversion of the disability benefit to a service retirement benefit, the spouse's benefit will be:

- 50% of the member's Final Average Salary; or
- If there are no dependent children, the benefit the member would have been entitled to if they had retired on the date of death.

In addition, an annual benefit of 10% of the member's Final Average Salary would be paid for each of the member's dependent children until the earlier of age 18 (or 23 if a full-time student) or death. However, in no case would the total of benefits payable exceed 75% of the member's Final Average Salary.

Tier II: Non-Service-connected disability – The annual benefit is 50% of Final Average Salary. Service Credit is granted during the period of disability. Disability benefits convert to age and service retirement at the earliest date the member is eligible for full retirement benefits. If the member is disabled for at least five years immediately preceding retirement, the member's Final Average Salary is adjusted during the period of disability. If the member dies prior to the conversion of the disability benefit to a service retirement benefit, the member's spouse will receive a lump sum benefit equal to 50% of the member's Final Average Salary at the time the member was disabled.

Death Benefits (Tier I and Tier II)

Active Member Service Connected Death – There is no age or service requirement. An annual benefit equal to the greater of the accrued retirement benefit under the 100% joint and survivor option and 50% of Final Average Salary is payable to the spouse, plus 10% of Final Average Salary for each dependent child under age 18 (or up to age 23 for full-time students), to a maximum of 90% of Final Average Salary Active Member.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Active Member Non-Service Connected Death – A lump sum of 100% of Final Average Salary and a pension of 2.5% of Final Average Salary per year of credited service (to a maximum of 50%) is payable to the spouse. If there is no spouse, the monthly benefit is paid to the dependent children (age 18, or 23 if a full time student). If there is no surviving spouse or eligible children, the beneficiary will receive a lump sum payment of 100% of the member’s current annual pay, inclusive of the member’s accumulated contributions.

Inactive Member Death – If an inactive member is eligible for retirement when death occurs, and the inactive member’s spouse is the sole beneficiary, the spouse may elect to receive benefits as a joint annuitant under any option in lieu of a refund of the member’s accumulated contributions.

Post-Retirement Death – There is a lump sum amount of \$4,000 payable, less any death benefit payable under local plan provisions. If the member has selected a retirement option, benefits are paid to the joint annuitant or the designated beneficiary. Under joint and survivor options, if the joint annuitant predeceases the retired member, the benefit is increased to the amount the retired member would have received if no option had been selected. Benefits payable to the joint annuitant cease when the joint annuitant dies. If no option is selected, the designated beneficiary receives the excess, if any, of the member’s accumulated contributions over total benefits paid to the date of death. The surviving spouse of a transfer member (who was covered by local plan on the employer’s entry date, who dies after retirement, and who has not elected a retirement benefit option) receives a lump sum payment of 50% of Final Average Salary. Additionally, a pension benefit of three-fourths of the member’s benefit is payable either to the spouse or dependent children.

Classifications

Tier I – Members have Tier I coverage if they were employed prior to July 1, 1989, and they did not elect coverage under Tier II.

Tier II – Members have Tier II coverage if they were employed July 1, 1989, or later. This also includes members employed before July 1, 1989 who elected Tier II coverage.

Some KP&F members are considered either Tier I or Tier II Transfer or Brazelton members.

Transfer Member – A member who is a former member of a local plan who elected to participate in KP&F. Former Kansas Highway Patrol and former Kansas Bureau of Investigation members are included in this group.

Brazelton member – A member who participated in a class action lawsuit, whose contribution is lower, and whose benefits are offset by Social Security.

Member Contributions

Member contributions are 7.15% of compensation, effective July 1, 2013.

Brazelton members contribute 0.008% with a Social Security offset. Benefits payable to these members are reduced by one-half of original Social Security benefits accruing from employment with the participating employer.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Employer Contributions

Individual rates are certified by the Board of Trustees for each participating employer based on the results of annual actuarial valuations.

Deferred Retirement Option Program (DROP)

Upon attaining normal retirement age, all KP&F members have the option of participating in the DROP plan for a minimum of three years and no more than five years. After electing to participate, a member's monthly retirement benefit is deposited into the member's DROP account for the duration of the DROP period. The DROP account accrues interest on an annual basis, equaling either 0.0% or 3.0%. Employer and employee contributions continue to be made to the System, but the member does not earn any additional service credit after the effective date of the DROP election. At the end of the DROP period, a member is entitled to a distribution from the DROP account.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

KANSAS JUDGES RETIREMENT SYSTEM

Normal Retirement

Eligibility – (a) Age 65, or (b) age 62 with ten years of credited service, or (c) any age when combined age and years of credited service equals 85 “points”. Age is determined by the member’s last birthday and is not rounded up.

Benefit – The benefit is based on the member’s Final Average Salary, which is the average of the three highest years of service under any retirement system administered by KPERS. The basic formula for those who were members prior to July 1, 1987, is 5% of Final Average Salary for each year of service up to ten years, plus 3.5% for each year of service greater than ten, to a maximum of 70% of Final Average Salary. For those who became members on or after July 1, 1987, the formula is 3.5% for each year, to a maximum benefit of 70% of Final Average Salary.

Early Retirement

Eligibility – A member must be age 55 and have ten years of credited service to take early retirement.

Benefit – The retirement benefit is reduced 0.2% per month for each month between the ages of 60 and 62, and 0.6% per month for each month between the ages of 55 and 60.

Vesting Requirements

Eligibility – There is no minimum service requirement; however, after terminating employment, the member must leave contributions on deposit with the Retirement System in order to be eligible for future benefits. Eligible judges who have service credited under KPERS have vested benefits under both KPERS and the Retirement System for Judges when the combined total credited service equals ten years.

Benefit – Normal benefit accrued at termination is payable at age 62 or in reduced amount at age 55, provided the member has 10 years of credited service. Otherwise, benefits are not payable until age 65.

Other Benefits

Disability Benefits – These benefits are payable if a member is defined as totally and permanently disabled as certified by the Supreme Court. The disability benefit, payable until age 65, is 3.5% of Final Average Salary for each year of service (minimum of 50% and maximum of 70% of Final Average Salary). Benefits are recalculated when the member reaches retirement age based on participating service credit for the period of disability. If a judge is disabled for at least five years immediately preceding retirement, the judge’s Final Average Salary is adjusted.

Withdrawal Benefit – Members who terminate employment may withdraw contributions with interest, but they will forfeit any right to a future benefit if they do.

Pre-retirement Death – A refund of the member’s accumulated contributions is payable. In lieu of receiving the member’s accumulated contributions, the surviving spouse of a member who is eligible to retire at death may elect to receive benefits under any survivor benefit option. If the member had at least ten years of credited service, but hadn’t reached retirement age at the time of death, the spouse may elect a monthly benefit to begin on the date the member first would have been eligible to retire as long as the member’s contributions aren’t withdrawn.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Post-retirement Death – A lump sum death benefit of \$4,000 is payable to the member’s beneficiary. If the member had selected an option with survivor benefits, those benefits are paid to the joint annuitant or to the member’s designated beneficiary. Under retirement options with survivor benefits, if the joint annuitant predeceases the retired member, the retirement benefit is increased to the amount the retired member would have received if no survivor benefits had been elected. Benefits payable to a joint annuitant cease when the joint annuitant dies. If no option was chosen by the retired member, the member’s designated beneficiary receives the excess, if any, of the member’s accumulated contributions over the total benefits paid to the date of the retired member’s death.

Member Contributions

Judges contributions are 6% of compensation. Upon reaching the maximum retirement benefit level of 70% of Final Average Salary, the contribution rate is reduced to 2%.

Employer Contributions

Rates are certified by the Board of Trustees, based on the results of annual actuarial valuations.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

KPERS

Rate of Investment Return:	7.00%
Price Inflation:	2.75%
Payroll Growth:	3.00%
KPERS 3 Interest Crediting Rate, Including dividends:	6.00% per annum
Administrative Expenses:	0.18% of covered payroll

Rate of Mortality:

Post-retirement

The RP-2014 Healthy Annuitant table was first adjusted by an age setback or set forward. Rates were further adjusted to fit actual experience. Rates are projected into the future using Scale MP-2016

Starting Table

- School Males: RP-2014 M White Collar Healthy +0
- School Females: RP-2014 F White Collar Healthy +0
- State Males: RP-2014 M Healthy +2
- State Females: RP-2014 F Healthy +1
- Local Males: RP-2014 M Healthy +2
- Local Females: RP-2014 F Healthy +1

Sample Rates (2014)

Age	School		State		Local	
	Male	Female	Male	Female	Male	Female
50	0.310%	0.172%	0.462%	0.332%	0.532%	0.276%
55	0.438%	0.225%	0.635%	0.397%	0.732%	0.367%
60	0.585%	0.323%	0.868%	0.582%	1.001%	0.536%
65	0.849%	0.544%	1.267%	0.909%	1.461%	0.838%
70	1.389%	0.876%	1.974%	1.460%	2.276%	1.346%
75	2.383%	1.459%	3.208%	2.381%	3.699%	2.196%
80	4.520%	3.192%	5.255%	4.249%	6.163%	3.939%
85	8.618%	6.444%	9.025%	7.662%	10.674%	7.119%
90	15.900%	11.824%	15.570%	13.531%	18.416%	12.573%
95	26.671%	20.501%	23.721%	22.137%	28.057%	20.570%
100	39.563%	31.961%	32.978%	32.888%	39.006%	30.559%

Pre-retirement

- School Males: 80 % of RP-2014 M White Collar +0
- School Females: 80% of RP-2014 F White Collar +0
- State Males: 90% of RP-2014 M Total Dataset +2
- State Females: 90% of RP-2014 F Total Dataset +1
- Local Males: 90% of RP-2014 M Total Dataset +2
- Local Females: 90% of RP-2014 F Total Dataset +1

Disabled Life Mortality

RP-2014 Disabled Life Table with same age adjustments as used for pre-retirement mortality tables.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Rates of Salary Increase:

<u>Years of Service</u>	<u>Rate of Increase*</u>		
	<u>School</u>	<u>State</u>	<u>Local</u>
1	11.50%	10.00%	10.00%
5	6.05%	5.10%	5.70%
10	4.60%	4.40%	4.70%
15	4.10%	3.90%	4.30%
20	3.60%	3.60%	4.10%
25	3.50%	3.50%	3.60%
30	3.50%	3.50%	3.50%

* Includes general wage increase assumption of 3.50% (composed of 2.75% inflation and 0.75% productivity).

Load for Pre-1993 Hires:

State:	2.50%	School:	0.50%
Local:	2.00%	KPF:	7.50%
C55/C60:	2.50%		

Rates of Termination:

<u>Duration</u>	<u>School</u>		<u>State</u>		<u>Local</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
0	20.75%	23.00%	21.00%	21.50%	23.00%	25.00%
1	17.25%	18.00%	18.00%	19.00%	19.00%	22.00%
2	13.75%	14.50%	15.25%	16.50%	16.50%	19.00%
3	10.75%	11.25%	13.50%	14.00%	13.50%	15.75%
4	8.75%	9.75%	12.00%	12.00%	11.75%	13.50%
5	7.50%	8.25%	10.75%	10.00%	10.00%	12.10%
6	6.75%	7.25%	9.50%	9.00%	9.00%	10.25%
7	6.00%	6.50%	8.50%	8.25%	8.00%	9.30%
8	5.25%	5.50%	7.50%	7.50%	7.00%	8.50%
9	5.00%	5.00%	6.50%	7.00%	6.30%	7.50%
10	4.60%	4.50%	5.50%	6.50%	5.60%	6.70%
11	4.30%	4.00%	5.00%	6.00%	5.20%	6.25%
12	4.00%	3.50%	4.50%	5.50%	4.90%	5.75%
13	3.75%	3.25%	4.25%	5.00%	4.60%	5.25%
14	3.50%	3.00%	4.00%	4.60%	4.00%	4.75%
15	3.25%	2.75%	3.80%	4.20%	3.80%	4.50%
16	3.00%	2.50%	3.60%	3.90%	3.60%	4.25%
17	2.75%	2.25%	3.40%	3.70%	3.40%	4.00%
18	2.50%	2.00%	3.20%	3.20%	3.20%	3.80%
19	2.25%	1.90%	3.00%	3.00%	3.00%	3.60%
20	2.00%	1.80%	2.80%	2.80%	2.80%	3.40%
21	1.75%	1.70%	2.60%	2.60%	2.60%	3.20%
22	1.50%	1.60%	2.40%	2.40%	2.40%	3.00%
23	1.25%	1.50%	2.20%	2.20%	2.20%	2.70%
24	1.00%	1.40%	2.00%	2.00%	2.00%	2.40%
25	1.00%	1.30%	1.80%	1.80%	1.80%	2.00%
26	1.00%	1.20%	1.60%	1.60%	1.60%	1.75%
27	1.00%	1.10%	1.40%	1.40%	1.40%	1.50%
28	1.00%	1.00%	1.20%	1.20%	1.20%	1.25%
29	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
30	1.00%	1.00%	0.80%	0.80%	0.80%	0.80%
30+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates

School Members:

<u>Age</u>	<u>Early Retirement</u>			<u>Normal Retirement</u>			<u>Rule of 85 (Tier 1 Only)</u>	
	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 3</u>	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 3</u>	<u>1st Year With 85 Points</u>	<u>After 1st Year With 85 Points</u>
53							20.0%	
54							20.0%	15.0%
55	3.0%	3.0%	3.0%				20.0%	15.0%
56	3.0%	3.0%	3.0%				22.0%	15.0%
57	3.0%	3.0%	3.0%				24.0%	15.0%
58	3.0%	3.0%	3.0%				26.0%	15.0%
59	5.0%	5.0%	5.0%				28.0%	20.0%
60	10.0%	10.0%	5.0%		35.0%	20.0%	35.0%	22.0%
61	15.0%	15.0%	5.0%		22.0%	15.0%	25.0%	22.0%
62		25.0%	5.0%	25.0%	25.0%	15.0%		25.0%
63		22.0%	5.0%	22.0%	22.0%	15.0%		22.0%
64		22.0%	5.0%	22.0%	22.0%	15.0%		22.0%
65				35.0%	35.0%	30.0%		35.0%
66				35.0%	35.0%	30.0%		35.0%
67-74				30.0%	30.0%	35.0%		30.0%
75				100.0%	100.0%	100.0%		100.0%

State Members:

<u>Age</u>	<u>Early Retirement</u>			<u>Normal Retirement</u>			<u>Rule of 85 (Tier 1 Only)</u>	
	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 3</u>	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 3</u>	<u>1st Year With 85 Points</u>	<u>After 1st Year With 85 Points</u>
53							18.0%	
54							18.0%	10.0%
55	4.0%	4.0%	3.0%				18.0%	10.0%
56	4.0%	4.0%	3.0%				18.0%	10.0%
57	4.0%	4.0%	3.0%				18.0%	10.0%
58	5.0%	5.0%	3.0%				18.0%	10.0%
59	5.0%	5.0%	5.0%				18.0%	10.0%
60	5.0%	5.0%	5.0%		18.0%	15.0%	18.0%	10.0%
61	10.0%	10.0%	5.0%		18.0%	10.0%	18.0%	15.0%
62		15.0%	5.0%	18.0%	18.0%	10.0%		18.0%
63		15.0%	5.0%	18.0%	18.0%	10.0%		18.0%
64		15.0%	5.0%	18.0%	18.0%	10.0%		18.0%
65				30.0%	30.0%	25.0%		30.0%
66				30.0%	30.0%	25.0%		30.0%
67-72				27.0%	27.0%	25.0%		27.0%
73				20.0%	20.0%	25.0%		20.0%
74				20.0%	20.0%	25.0%		20.0%
75				100.0%	100.0%	100.0%		100.0%



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Local Members:

<u>Age</u>	<u>Early Retirement</u>			<u>Normal Retirement</u>			<u>Rule of 85 (Tier 1 Only)</u>	
	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 3</u>	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 3</u>	<u>1st Year With 85 Points</u>	<u>After 1st Year With 85 Points</u>
53							15.0%	
54							15.0%	8.0%
55	3.0%	3.0%	3.0%				15.0%	8.0%
56	3.0%	3.0%	3.0%				15.0%	8.0%
57	3.0%	3.0%	3.0%				15.0%	8.0%
58	3.0%	3.0%	3.0%				15.0%	10.0%
59	6.0%	6.0%	5.0%				15.0%	10.0%
60	6.0%	6.0%	5.0%		15.0%	15.0%	15.0%	10.0%
61	10.0%	10.0%	5.0%		20.0%	10.0%	25.0%	20.0%
62		20.0%	5.0%	20.0%	20.0%	10.0%		20.0%
63		20.0%	5.0%	20.0%	20.0%	10.0%		20.0%
64		20.0%	5.0%	20.0%	20.0%	10.0%		20.0%
65				30.0%	30.0%	25.0%		30.0%
66				30.0%	30.0%	25.0%		30.0%
67-70				30.0%	30.0%	30.0%		30.0%
71-74				22.0%	22.0%	30.0%		22.0%
75				100.0%	100.0%	100.0%		100.0%

Inactive vested members: Earliest unreduced retirement age.

Correctional employees with an age 55 normal retirement date:

<u>Age</u>	<u>Rate</u>
55-59	10%
60	15%
61-63	20%
64	35%
65	100%

Correctional employees with an age 60 normal retirement date:

<u>Age</u>	<u>Rate</u>
60	20%
61	20%
62	35%
63	20%
64	20%
65	45%
66	45%
67	45%
68	100%

TIAA employees: Age 66



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Rates of Disability:

<u>Age</u>	<u>School</u>	<u>State</u>	<u>Local</u>
25	0.017%	0.015%	0.015%
30	0.019%	0.043%	0.033%
35	0.023%	0.067%	0.049%
40	0.039%	0.130%	0.072%
45	0.075%	0.195%	0.126%
50	0.123%	0.260%	0.182%
55	0.166%	0.325%	0.217%
60	0.238%	0.358%	0.266%

Indexation of Final Average

Salary for Disabled Members:

1.75% per year.

Probability of Vested Members Leaving Contributions with System:

KPERS 1

<u>Age</u>	<u>School</u>	<u>State</u>	<u>Local</u>
25	80%	65%	60%
30	80%	65%	70%
35	80%	65%	70%
40	80%	65%	70%
45	82%	75%	70%
50	87%	85%	74%
55	100%	100%	100%

KPERS 2

Members are assumed to elect to take a refund if it is more valuable than the deferred annuity. The comparison is based on 7.00% interest and a 50% Male/50% Female blend of the RP-2014 Mortality Table, projected to 2045 (static).

KPERS 3

100% of vested members are assumed to leave their contributions with the System.

Marriage Assumptions:

70% of all members are assumed married with male spouse assumed 3 years older than the female.

Partial Lump Sum Option (PLSO):

40% of KPERS 1 and KPERS 2 members are assumed to take a PLSO equal to 30% of the value of their benefit upon retirement. 100% of KPERS 3 members are assumed to take a PLSO equal to 30% of the value of their benefit upon retirement.

PLSO Factors:

Interest Rate: 7.00%

Mortality: SOA 1983 Group Annuity Mortality Table, blended 50% male and 50% female.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

KPF

Rate of Investment Return:	7.00%
Price Inflation:	2.75%
Payroll Growth:	3.00%
Administrative Expenses:	0.18% of covered payroll
Rates of Mortality:	Mortality rates are projected into the future using Scale MP-2016
Post-retirement	RP-2014 Total Dataset Table, set forward one year
Pre-retirement	90% of the RP-2014 Total Dataset Table, set forward one year*
	* 70% of preretirement deaths assumed to be service-related.
Disabled Life Mortality:	RP-2014 Disabled Life Table, set forward one year

Rates of Salary Increase:

<u>Years of Service</u>	<u>Rate of Increase*</u>
1	12.0%
5	6.5%
10	4.4%
15	3.8%
20	3.5%
25	3.5%

* Includes general wage increase assumption of 3.50% (composed of 2.75% inflation and 0.75% productivity)

Rates of Termination:

<u>Years of Service</u>	<u>Rate</u>
1	11.0%
5	6.0%
10	2.8%
15	1.8%
20	1.1%
25	0.0%



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates:

Tier 1

<u>Early Retirement</u>		<u>Normal Retirement</u>	
<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
50	5%	55	35%
51	7%	56	30%
52	7%	57	30%
53	15%	58	35%
54	30%	59	30%
		60	30%
		61	35%
		62	100%

Tier 2

<u>Early Retirement</u>		<u>Normal Retirement</u>	
<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
50	10%	50	30%
51	10%	51	25%
52	10%	52	25%
53	10%	53	25%
54	20%	54	25%
		55	25%
		56	25%
		57	25%
		58	20%
		59	30%
		60	25%
		61	25%
		62	30%
		63	30%
		64	30%
		65	100%

Inactive Vested Earliest unreduced retirement age

Rates of Disability:

<u>Age</u>	<u>Rate*</u>
22	0.04%
27	0.07%
32	0.15%
37	0.35%
42	0.56%
47	0.76%
52	0.96%
57	1.00%

* 90% of disabilities are assumed to be service-connected.

Marriage Assumption: 80% of all members assumed married with male spouse assumed to be three years older than female. When an active member dies, they have no child beneficiaries.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Partial Lump Sum Option (PLSO):	40% of KPERS 1 and KPERS 2 members are assumed to take a PLSO equal to 30% of the value of their benefit upon retirement. 100% of KPERS 3 members are assumed to take a PLSO equal to 30% of the value of their benefit upon retirement.
PLSO Factors:	Interest Rate: 7.00% Mortality: SOA 1983 Group Annuity Mortality Table, blended 50% male and 50% female.
DROP Election:	KP&F members are assumed to enter DROP for the maximum DROP period if it is more favorable than entering standard retirement.
Interest Credited on DROP Accounts:	3.00%, compounded annually.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Judges

Rate of Investment Return:	7.00%												
Price Inflation:	2.75%												
Administrative Expenses:	0.18% of covered payroll												
Rates of Mortality:	Mortality rates are projected into the future used Scale MP-2016												
Post-retirement	RP-2014 Total Dataset Table, set back two years												
Pre-retirement	80% of RP-2014 Total Dataset Table, set back two years												
Disabled Life Mortality:	RP-2014 Disabled Retiree Table, set back two years												
Rates of Salary Increase:	4.00%												
Rates of Termination:	None assumed												
Rates of Disability:	None assumed												
Retirement Rates:	<table> <thead> <tr> <th><u>Age</u></th> <th><u>Rate</u></th> </tr> </thead> <tbody> <tr> <td>62</td> <td>15%</td> </tr> <tr> <td>63-64</td> <td>10%</td> </tr> <tr> <td>65-66</td> <td>33%</td> </tr> <tr> <td>67-69</td> <td>15%</td> </tr> <tr> <td>70+</td> <td>100%</td> </tr> </tbody> </table>	<u>Age</u>	<u>Rate</u>	62	15%	63-64	10%	65-66	33%	67-69	15%	70+	100%
<u>Age</u>	<u>Rate</u>												
62	15%												
63-64	10%												
65-66	33%												
67-69	15%												
70+	100%												
Marriage Assumption:	70% of all members are assumed married with male spouse assumed 3 years old than female.												
Partial Lump Sum Option (PLSO):	40% of KPERS 1 and KPERS 2 members are assumed to take a PLSO equal to 30% of the value of their benefit upon retirement. 100% of KPERS 3 members are assumed to take a PLSO equal to 30% of the value of their benefit upon retirement.												
PLSO Factors:	Interest Rate: 7.00% Mortality: SOA 1983 Group Annuity Mortality Table, blended 50% male and 50% female.												



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

TECHNICAL VALUATION PROCEDURES

Data Procedures

In-pay members:

If a birth date is not available, the member is assumed to have retired at 62. If a retirement date is also not available, the member is assumed to be 75.

If a beneficiary birth date is needed but not supplied, males are assumed to be 3 years older than females.

Not in-pay members:

If a birth date is not available, it is assigned according to the following schedule:

<u>System</u>	<u>Active member age at hire</u>	<u>Inactive member age at valuation</u>
KPERS	34.7	50
KPF	27.5	49
Judges	43.4	54

If gender is not provided, it is assigned randomly with a 40% probability of being male and 60% probability of being female.

If salary information is not available for an active record, it is assigned according to the following schedule:

<u>System</u>	<u>Salary</u>
KPERS	\$28,000
KPF	\$43,000
Judges	\$79,100

Salaries for first year members are annualized.

Other Valuation Procedures

No actuarial accrued liability in excess of the unclaimed member contribution balance is held for nonvested, inactive members. A reserve is also held for accounts that have been forfeited but could be reclaimed in the future.

Benefits above the projected IRC Section 415 limit for active participants are assumed to be immaterial for the valuation. The compensation limitation under IRC Section 401(a) (17) is considered in this valuation. On a projected basis, the impact of this limitation is insignificant.

Salary increases are assumed to apply to annual amounts.

Decrements are assumed to occur mid-year, except that immediate retirement is assumed for those who are at or above the age at which retirement rates are 100%. Standard adjustments are made for multiple decrements. Withdrawal does not operate once early or unreduced retirement eligibility is met.

KPERS 3 employees who transfer employment to a non-KPERS covered position are treated as actives who are not accruing benefits.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Methods

1. Funding Method

Under the entry age normal cost method, the actuarial present value of each member's projected benefits is allocated on a level basis over the member's compensation between the entry age of the member and the assumed exit ages. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial liability. The unfunded actuarial liability represents the difference between the actuarial liability and the actuarial value of assets as of the valuation date. The unfunded actuarial liability is calculated each year and reflects experience gains/losses.

There is currently a lag between the valuation date in which the employer contribution rates are determined and the effective date of those contribution rates, i.e., a two year lag for Local employers and a two and one-half year lag for the State/School group. The unfunded actuarial liability is projected from the valuation date to the first day of the fiscal year in which the contribution rate will apply based on the scheduled statutory contribution rates and expected payroll in the intervening years.

For valuations beginning with December 31, 2016 and following, the unfunded actuarial liability is amortized using a "layered" approach. The unfunded actuarial liability in the December 31, 2015 valuation, which was projected to June 30, 2018 for the State/School and Judges groups and to December 31, 2017 for the Local and KP&F groups, served as the initial or "legacy" amortization base. In the December 31, 2021 valuation, the outstanding unfunded actuarial liability bases were combined and the total balance was re-amortized over a closed 17-year period for State/School and Local, a closed 22-year period for KP&F, and a closed 20-year period for Judges. The change in the unfunded actuarial liability, resulting from the assumption changes reflected in the 2016 and 2019 valuations, was amortized over a closed 25-year period. Changes in the unfunded actuarial liability that result from actuarial experience each year (gains and losses) are amortized over a closed 20-year period that begins with the fiscal year in which the contribution rates will apply.

The unfunded actuarial liability is amortized as a level percentage of payroll for all groups except Judges, who use a level dollar payment. The payroll growth assumption is 3% so the annual amortization payments will increase 3% each year. As a result, if total payroll grows 3% per year, as assumed, the amortization payment will remain level as a percentage of total current payroll.

2. Asset Valuation Method

For actuarial purposes, assets are valued using an asset smoothing method. The difference between the actual return and the expected return (based on the actuarial assumed net rate of return) on the market value of assets is calculated each year and recognized equally over a five-year period.



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APPENDIX D – GLOSSARY OF TERMS

The following are key terms used in the discussion of actuarial funding valuations. Actuarial measurements for other purposes, such as accounting, may use different terms.

Actuarial Accrued Liability	The difference between the actuarial present value of system benefits and the actuarial value of future normal costs. Also referred to as “accrued liability” or “actuarial liability”.
Actuarial Assumptions	Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
Accrued Service	Service credited under the system which was rendered before the date of the actuarial valuation.
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate assumptions.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement system benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the “actuarial funding method”.
Experience Gain (Loss)	The difference between actual experience and anticipated experience, based on the actuarial assumptions, during the period between two actuarial valuation dates.
Actuarial Present Value	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
In-Pay Members	Members receiving monthly benefit payments as of the valuation date.
Not-in-Pay Members	Members not receiving monthly benefit payments as of the valuation, i.e., active members and terminated members entitled to a benefit in the future.



APPENDIX D – GLOSSARY OF TERMS

Normal Cost

The actuarial present value of retirement system benefits allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability

The difference between actuarial accrued liability and the valuation assets. Sometimes referred to as “unfunded actuarial liability” or “unfunded accrued liability”.

Most retirement systems have unfunded actuarial accrued liability. They arise each time new benefits are added and each time an actuarial loss is realized.