

KENTUCKY RETIREMENT SYSTEMS
Management and Performance Fees
For the Fiscal Year ended December 31, 2019
Unaudited

PUBLIC EQUITY

US Public Equity

| Asset Manager | Pension Fund | | | Insurance Fund | | |
|---------------------|-------------------------|-------------------|------------------|-------------------------|-------------------|------------------|
| | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| INTERNAL MID CAP | 170,657,629 | | | 74,131,179 | | |
| INVESCO | 40,786 | | | | | |
| NEXT CENTURY GROWTH | 59,223,918 | 102,013 | | 26,919,467 | 46,369 | |
| NTGI STRUCTURED | 197,645,830 | 128,104 | | 86,782,183 | 58,530 | |
| RIVER ROAD FAV | 182,528,196 | 237,071 | | 82,423,031 | 107,159 | |
| S&P 500 INDEX | 1,376,139,105 | | | 633,575,987 | | |
| SCIENTIFIC BETA | 448,776,579 | | | 197,706,188 | | |
| SYSTEMATIC | 83 | | | 32 | | |
| TRANSITION ACCOUNT | 38,572 | | | 8,187 | | |
| WESTFIELD CAPITAL | 178,878,314 | 456,381 | | 79,794,513 | 206,437 | |
| Subtotal | \$ 2,613,929,013 | \$ 923,569 | \$ - | \$ 1,181,340,768 | \$ 418,495 | \$ - |

Non-US Public Equity

| Asset Manager | Pension Fund | | | Insurance Fund | | |
|---------------------------------------|-------------------------|---------------------|------------------|-------------------------|---------------------|------------------|
| | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| AMERICAN CENTURY | 390,385,910 | 766,221 | | 170,453,965 | 334,571 | |
| BLACKROCK ACWI-EX | 784,834,541 | 239,802 | | 363,202,846 | 109,779 | |
| BLACKROCK ACWI-EX SC (Insurance ONLY) | | | | 38,196,179 | 21,351 | |
| BOSTON CO | 722,107 | | | 130,400 | | |
| FRANKLIN TEMPLETON | 283,953,757 | 533,433 | | 122,526,350 | 229,945 | |
| LAZARD ASSET MGMT | 493,619,441 | 621,285 | | 209,285,138 | 264,653 | |
| LSV ASSET MGMT | 426,843,898 | 1,237,898 | | 179,674,064 | 524,713 | |
| NON-US TRANS ACCT | 1,540,081 | | | 605,048 | | |
| NTGI INTL SM CAP (Pension ONLY) | 85,425,462 | 37,263 | | | | |
| PYRAMIS | 2,093,279 | | | 739,166 | | |
| Subtotal | \$ 2,469,418,477 | \$ 3,435,901 | \$ - | \$ 1,084,813,156 | \$ 1,485,012 | \$ - |

Emerging Markets

| Asset Manager | Pension Fund | | | Insurance Fund | | |
|----------------------------|-------------------------|---------------------|------------------|-------------------------|---------------------|------------------|
| | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| JP MORGAN EMERGING MARKETS | 133,214,713 | 81,923 | | 58,730,534 | 36,730 | |
| PZENA EMERGING MARKETS | 132,383,319 | 66,956 | | 58,280,714 | 32,977 | |
| Subtotal | \$ 265,598,033 | \$ 148,879 | \$ - | \$ 117,011,249 | \$ 69,707 | \$ - |
| Total | \$ 5,348,945,522 | \$ 4,508,350 | \$ - | \$ 2,383,165,173 | \$ 1,973,214 | \$ - |

FIXED INCOME

Core Fixed Income

| | Pension Fund | | | Insurance Fund | | |
|-------------------------------|-------------------------|---------------------|---------------------|-------------------------|---------------------|-------------------|
| Asset Manager | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| BNY IG CREDIT FI UNIT | 105,289,397 | 118,704 | | 47,641,652 | 43,223 | |
| IG CREDIT FI UNIT | 6 | | | 9 | | |
| LOOMIS CORE FIXED INCOME | 581,463,547 | 174,642 | | 211,442,742 | 63,506 | |
| LORD ABBETT | 1,180,647,658 | 682,884 | | 493,283,966 | 286,034 | |
| NISA | 622,260,233 | 437,990 | | 246,438,444 | 173,985 | |
| Subtotal | \$ 2,489,660,840 | \$ 1,414,220 | \$ - | \$ 998,806,814 | \$ 566,748 | \$ - |
| Specialty Fixed Income | | | | | | |
| | Pension Fund | | | Insurance Fund | | |
| Asset Manager | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| BSP COINVEST | 11,495,821 | | | 6,001,623 | | |
| BSP PRIVATE CREDIT FUND | 66,708,252 | 314,767 | | 33,354,125 | 157,383 | |
| CERBERUS KRS LP | 119,630,876 | 1,145,427 | 724,116 | 51,270,375 | 490,898 | 310,336 |
| COLUMBIA | 366,068,949 | 653,082 | | 93,653,196 | 167,359 | |
| H/2 CREDIT PARTNER | 85,110,301 | | | 33,098,451 | | |
| LOOMIS | 40,051 | | | 38,673 | | |
| MANULIFE ASSET MGMT | 474,831,526 | 554,349 | | 200,059,387 | 233,583 | |
| MARATHON BLUEGRASS | 347,554,125 | 1,225,183 | (181,184) | 136,999,422 | 481,586 | (98,887) |
| MESA WEST CORE LEND | 59,673,457 | 356,973 | | 39,010,714 | 222,276 | |
| MESA WEST IV | 20,145,215 | 364,500 | 34,294 | 7,834,252 | 141,750 | 13,336 |
| SHENKMAN CAP | 241,519,305 | 495,825 | | 119,673,184 | 245,756 | |
| WATERFALL | 213,520,507 | 487,352 | | 102,343,968 | 235,980 | |
| WHITE OAK YIELD SPECTRUM FUND | 92,492,948 | 472,338 | 496,843 | 46,246,475 | 236,168 | 248,421 |
| Subtotal | \$ 2,098,791,332 | \$ 6,069,795 | \$ 1,074,069 | \$ 869,583,845 | \$ 2,612,739 | \$ 473,206 |
| Total | \$ 4,588,452,172 | \$ 7,484,016 | \$ 1,074,069 | \$ 1,868,390,659 | \$ 3,179,488 | \$ 473,206 |

| OPPORTUNISTIC | | | | | | |
|---------------|-----------------------|-----------------|---------------------|----------------|-----------------|-------------------|
| | Pension Fund | | | Insurance Fund | | |
| Asset Manager | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| ARROWMARK | 183,538,333 | | 1,096,338 | | | 558,262 |
| Total | \$ 183,538,333 | \$ - | \$ 1,096,338 | \$ - | \$ - | \$ 558,262 |

| ABOLUTE RETURN | | | | | | |
|-----------------------------|--------------|-----------------|------------------|----------------|-----------------|------------------|
| | Pension Fund | | | Insurance Fund | | |
| Asset Manager | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| BLACKSTONE STRAT OPP | 2,819,807 | | | 1,111,328 | | |
| CREDIT SUISSE | 415,818 | 10,434 | 8,271 | 172,709 | 4,334 | 3,435 |
| GOTHAM NEUTRAL STRATEGIES | 13,242,738 | 54,613 | | 5,500,345 | 18,084 | |
| GOVERNORS LANE ONSHORE FUND | 11,020,765 | 131,464 | 5,804 | 4,577,453 | 54,603 | 2,411 |
| LIQUIDALTS H2O FORCE | 18,015,854 | | | 7,568,812 | | |
| LUXOR CAPITAL | 1,384,403 | | | 461,468 | | |

| | | | | | | |
|----------------------|-----------------------|-------------------|-------------------|----------------------|-------------------|------------------|
| MYRIAD OPPORTUNITIES | 44,186,540 | 215,151 | | 17,596,096 | 85,705 | |
| PAAMCO | 7,095 | | | 1,910 | | |
| PINE RIVER | 192,565 | 611 | | 64,188 | 204 | |
| PRISMA CAPITAL | 96,376,598 | | | 40,033,400 | | |
| SRS PARTNERS US | 8,922,436 | 53,985 | 127,129 | 3,516,482 | 21,276 | 50,104 |
| TRICADIA SELECT | 3,564,792 | 1,892 | | 1,404,944 | 746 | |
| Total | \$ 200,149,411 | \$ 468,151 | \$ 141,203 | \$ 82,009,137 | \$ 184,952 | \$ 55,949 |

| PRIVATE EQUITY | | | | | | |
|----------------------------|--------------|-----------------|------------------|----------------|-----------------|------------------|
| Asset Manager | Pension Fund | | | Insurance Fund | | |
| | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| ARBOR INVST II | 56,623 | | 237,260 | 6,292 | | 26,362 |
| ARCANO FUND | 22,715,951 | 89,363 | | 2,523,996 | 9,929 | 1,717 |
| ARES SSF IV | 23,331,001 | 165,607 | | 12,303,743 | 87,305 | |
| BAY HILLS EM PTNR I | 6,875,872 | | 971,190 | 763,987 | | 107,909 |
| BAY HILLS EM PTNR II | 75,311,498 | 36,444 | 1,017,677 | 8,367,944 | 4,050 | 113,075 |
| BAY HILLS EM PTNR III | 54,891,659 | 325,161 | 991,954 | 46,958,018 | 277,734 | 847,269 |
| BAY HILLS II B | 57,291,372 | 43,199 | 910,042 | 6,365,707 | 4,799 | 101,116 |
| BDCM OPPT FD IV | 34,102,975 | 312,178 | | 23,406,263 | 214,261 | |
| BLACKSTONE CAP V | 2,144,156 | | (99,572) | 563,945 | | (26,203) |
| BLACKSTONE CAP VI | 45,415,513 | 110,094 | (219,110) | 30,277,009 | 73,392 | (317,874) |
| CM GROWTH I | 7,239,388 | | | 804,376 | | |
| COLUMBIA CAP EQ IV | 3,910,818 | | | 434,537 | | |
| CRESTVIEW PTNRS II | 18,448,600 | 80,461 | 269,552 | 9,933,864 | 8,940 | 29,950 |
| CRESTVIEW PTNRS III | 27,750,265 | 123,419 | (49,009) | 3,083,356 | 66,457 | |
| CVC CAPITAL PARTNERS VI | 26,204,682 | 173,678 | | 13,846,471 | 91,771 | |
| DAG VENTURES II QP | 3,237,664 | | | 359,731 | | |
| DAG VENTURES III QP | 2,026,218 | | | 225,123 | | |
| DAG VENTURES IV QP | 51,173,204 | | | 5,685,912 | | |
| DAG VENTURES V QP | 26,584,155 | 20,000 | | 23,261,130 | 17,500 | |
| DB PRIVATE EQUITY | 18,099,662 | 87,731 | 182,657 | 54,298,988 | 392,632 | 547,972 |
| DCM VI LP | 10,383,058 | | | 1,153,673 | | |
| ESSEX WOOD HLTH VIII | 10,032,845 | 179,944 | | 2,229,520 | 39,988 | |
| GREEN EQTY INVST IV | 1,583 | | | 231 | | |
| GREEN EQTY INVST V | 34,160,386 | 6,558 | | 3,795,598 | 729 | |
| GREEN EQTY INVST VI | 35,082,044 | 90,143 | | 30,696,801 | 78,876 | |
| GREEN EQUITY INV VII | 19,928,017 | 33,549 | | 19,928,016 | 33,549 | |
| GTCR IX LP | 172,153 | | | 19,116 | | |
| H & F SPOCK I, LP (KRONOS) | 6,075,818 | | | 2,278,430 | | |
| HARVEST PARTNERS V | 88,341 | | | 9,817 | | (40,125) |
| HARVEST PARTNERS VI | 13,711,115 | | 246,545 | 5,600,319 | | 271,375 |
| HARVEST PARTNERS VII | 18,678,845 | 35,067 | 36,823 | 18,678,845 | 35,067 | 36,823 |
| HELLMAN FRIEDMAN VI | 839,916 | | (72,257) | 314,986 | | (21,004) |

| | | | | | | |
|------------------------------|-------------------------|---------------------|---------------------|-----------------------|---------------------|---------------------|
| HIG BIOVENTURES II | 12,889,861 | 87,765 | 672,207 | 10,980,254 | 74,762 | 572,620 |
| HIG CAP PTRNS V | 13,653,056 | 108,561 | 637,614 | 7,191,305 | 57,181 | 335,842 |
| HIG VENTURE PTRN II | 5,840,649 | | (46,769) | 648,960 | | (5,196) |
| HORSLEY BRDG INTL V | 82,046,155 | 295,314 | | 9,116,238 | 21,874 | |
| INST VEN PTRN XII | 5,560,550 | | | 617,703 | | |
| JW CHILDS EQUITY III | 640 | | | 73 | | |
| KAYNE ANDERSON | 35,457,926 | 332,146 | (1,146,510) | 35,457,926 | 665,568 | (950,286) |
| KCP IV CO-INVEST | 5,078,195 | | 6,483 | 3,485,370 | | 4,450 |
| KEYHAVEN CAPITAL III | 18,435,598 | | (402) | 2,048,398 | | (44) |
| KEYHAVEN CAPITAL IV | 4,195,498 | | 206,192 | 2,879,540 | | 141,518 |
| LEVINE LEICHTMAN CAP PTRNS V | 12,403,813 | 284,455 | (3,173,158) | 21,240,800 | 224,161 | (806,438) |
| LEVINE LEICHTMAN FUND VI | 40,711,532 | 314,952 | | 12,403,813 | 314,952 | |
| MATLINPATTERSON II | 1,322,059 | | | 146,895 | | |
| MATLINPATTERSON III | 11,561,335 | 18,196 | | 1,284,651 | 2,021 | |
| MERIT MEZZ FD IV | 2 | | | 1 | | |
| MHR INST PTRNS III | | | | 1,268,620 | 8,820 | 279,414 |
| MIDDLE GROUND | 10,386,865 | 386,616 | | 5,193,437 | 193,309 | |
| MILL ROAD CAPITAL | 9,093,390 | | | 1,010,377 | | |
| NEW MTN PTRNS II LP | 309,919 | | (12,560) | 61,988 | | (2,513) |
| NEW MTN PTRNS III LP | 24,245,087 | | 382,206 | 5,387,792 | | 84,935 |
| NEW MTN PTRNS IV LP | 24,549,626 | 69,393 | 1,539,661 | 12,873,584 | 36,388 | 807,384 |
| OAK HILL CAP PT II | 874,340 | 8,311 | 11,393 | 97,150 | 1,878 | 2,818 |
| OAK HILL CAP PT III | 5,913,360 | 37,033 | (51,555) | 2,190,133 | 13,716 | (17,748) |
| OCM OPPTS FD VIIB | | | | 131,839 | 1,218 | (752) |
| RIVERSIDE APPREC VI | 22,710,868 | 199,127 | 157,950 | 11,971,161 | 210,754 | 510,078 |
| STRATEGIC VALUE IV | 16,735,716 | 146,137 | 415,591 | 8,387,200 | 73,238 | 208,276 |
| SUN CAP PTRNS | | | | 239,587 | | |
| TCV VI | | | | 550,754 | | |
| TRITON FUND IV | 13,949,605 | 214,401 | 689,239 | 7,353,139 | 113,016 | 363,313 |
| VANTAGEPOINT 2006 | 2,172,021 | 73,058 | | 853,792 | 4,499 | |
| VANTAGEPOINT IV | 7,684,115 | | | 241,336 | | |
| VISTA EQ PTRN FD III | 4,315,023 | | (360,913) | 479,448 | | (40,101) |
| VISTA EQ PTRN FD IV | 17,616,522 | | (530,676) | 15,006,667 | | (452,058) |
| VISTA EQ PTRN FD VI | 28,809,162 | | 213,890 | 28,809,162 | | 213,890 |
| WARBURG PINCUS PE IX | 2,338,978 | (1,100) | (61,613) | 467,796 | (220) | (12,323) |
| WARBURG PINCUS PE X | 11,958,567 | 30,568 | (422,414) | 2,314,536 | 5,916 | (81,758) |
| WAYZATA OPPTS FD II | 1,014,717 | | | 112,746 | | |
| WAYZATA OPPTS FD III | 6,215,187 | 31,145 | | 3,276,104 | 32,873 | |
| Total | \$ 1,116,015,335 | \$ 4,548,674 | \$ 3,549,608 | \$ 543,956,015 | \$ 3,492,904 | \$ 2,833,684 |

| REAL ESTATE | | | | | | |
|---------------|--------------|-----------------|------------------|----------------|-----------------|------------------|
| Asset Manager | Pension Fund | | | Insurance Fund | | |
| | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |

| | | | | | | |
|--------------------------|-----------------------|---------------------|---------------------|-----------------------|---------------------|---------------------|
| BARING REAL ESTATE | 61,924,738 | | | 26,539,172 | | |
| DIVCOWEST IV | 3,014,943 | 32,848 | 149,741 | 1,333,538 | 14,529 | |
| FUNDAMENTAL PARTNERS III | 46,527,759 | 525,000 | 1,936,909 | 19,940,470 | 225,000 | 830,104 |
| GREENFIELD ACQ VI | 1,438,532 | 128,058 | (159,634) | 632,283 | 56,285 | (70,164) |
| GREENFIELD ACQ VII | 18,872,415 | 199,261 | 381,488 | 8,282,141 | 87,445 | 167,416 |
| HARRISON STREET | 82,441,852 | 307,689 | | 38,230,597 | 141,996 | |
| L-A VII | 28,659,028 | 134,038 | | 12,576,982 | 58,822 | |
| LUBERT ADLER RE VIIB | 27,279,854 | 108,721 | 234,848 | 11,691,366 | 46,595 | 100,649 |
| PATRON CAPITAL | 19,494,400 | 269,793 | | 7,581,365 | 104,920 | |
| PROLOGIS TUSL | 142,158,826 | | 6,537,751 | 55,028,824 | | 2,583,556 |
| RUBENSTEIN PF II | 16,367,756 | 159,552 | | 7,239,584 | 70,572 | |
| STOCKBRIDGE SM/MKTS | 89,800,254 | 380,334 | | 41,634,488 | 175,474 | |
| WALTON ST RE FD VI | 12,633,912 | 70,946 | | 1,403,768 | 7,883 | |
| WALTON ST RE FD VII | 11,649,330 | 261,243 | | 5,120,266 | 114,824 | |
| Total | \$ 562,263,597 | \$ 2,577,483 | \$ 9,081,103 | \$ 237,234,843 | \$ 1,104,345 | \$ 3,611,561 |

| REAL RETURN | | | | | | |
|--------------------------|-------------------------|---------------------|---------------------|-----------------------|-------------------|-------------------|
| Asset Manager | Pension Fund | | | Insurance Fund | | |
| | AUM | Management Fees | Performance Fees | AUM | Management Fees | Performance Fees |
| AMERRA AGRI FUND II | 23,561,458 | 95,938 | 813,557 | 9,502,367 | 38,691 | 328,109 |
| AMERRA AGRI HOLDINGS | 43,399,118 | 463,237 | | 23,368,758 | 249,436 | |
| BTG PACTUAL | 25,046,495 | 209,414 | | 11,252,773 | 94,085 | |
| IFM INFRAST DEBT FUND | 40,643,468 | 55,973 | | 17,418,629 | 23,988 | |
| INTERNAL TIPS | 212,997,151 | | | 113,129,325 | | |
| MAGNETAR MTP EOF II | 33,040,234 | 212,021 | 285,304 | 11,013,411 | 70,674 | 95,101 |
| NUVEEN REAL ASSET INCOME | 228,991,465 | 736,912 | | 93,741,529 | 288,206 | |
| OBERLAND CAPITAL | 7,615,550 | 156,389 | | 3,421,480 | 70,262 | |
| PIMCO ALL ASSET | 355,846,561 | | | 145,056,556 | | |
| TAURUS MINE FINANCE | 35,501,150 | 225,271 | 391,556 | 15,664,587 | 99,399 | 172,771 |
| TORTOISE CAPITAL | 139,689,859 | 192,942 | | 44,319,355 | 61,229 | |
| TPF II | 775,832 | | | 86,206 | | |
| Total | \$ 1,147,108,341 | \$ 2,348,097 | \$ 1,490,417 | \$ 487,974,976 | \$ 995,970 | \$ 595,981 |

| | | | | | | |
|--|-------------------|---------------|---------------|------------------|---------------|--------------|
| Total Assets and Fees under Management | \$ 13,146,472,712 | \$ 21,934,770 | \$ 16,432,738 | \$ 5,602,730,802 | \$ 10,930,873 | \$ 8,128,644 |
| Fees in Basis Points (Annualized for Mgmt. Fees) | | 0.33% | 0.12% | | 0.39% | 0.15% |

NOTE:

Management Fee - Management Fees is a fee to compensate investment managers for their time and expertise used to invest KRS funds. The fees typically range from 1%-4% per annum with 2% being the standard.

Performance/Incentive fee - a fee charged by the manager for generating returns that exceed the expected rate of return. The standard fee is typically 20% of the amount exceeding the expected rate of return.

Carried Interest - a fee charged share of the profits of an investment fund in excess of the amount that the manager contributes to the partnership. The standard fee is typically around 20%

Fees reported for Private Equity and Real Estate may appear high depending on the investment stage. Management Fees are often charged on committed capital; therefore, during the early phase of raising capital, fees may appear to be high because all the capital has not been called for investment.