



# INVESTMENT SECTION

FY 2023 ACFR | ALASKA TEACHERS' RETIREMENT SYSTEM





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August 28, 2023

Alaska Retirement Management Board  
State of Alaska, Department of Revenue  
Treasury Division  
333 Willoughby Avenue, 11<sup>th</sup> Floor  
Juneau, Alaska 99801

Dear Board Members:

This letter reviews the investment performance of assets under the purview of the Alaska Retirement Management Board (ARMB) for the fiscal year ended June 30, 2023.

Callan LLC (Callan) calculates time-weighted performance statistics based primarily on underlying custodial data provided by the Board's custodian, State Street Bank and Trust Company. Additional manager-level data is obtained directly from the Department of Revenue. The performance calculations were made using a time-weighted return methodology based upon fair values reported by these sources.

Callan serves as ARMB's independent general investment consultant and evaluates ARMB's performance in relation to market benchmarks, appropriate manager peer groups and other public pension systems. The performance calculations are made using a methodology broadly similar to the Global Investment Performance Standards.

ARMB purposely seeks to invest assets prudently, expertly, and according to governing law and industry practices. The objective of this approach is to responsibly invest Plan assets that, in combination with contributions, will be sufficient to pay promised benefits to members and beneficiaries. In pursuit of this objective, ARMB periodically evaluates liabilities, expected contributions and potential earnings. This analysis considers a wide range of potentially viable investment strategies. With thoughtful consideration of multiple factors, ARMB selects a strategic investment policy that balances long-term growth potential and acceptable risk. A policy benchmark is constructed that mirrors ARMB's strategic decision regarding asset allocation policy. The custom policy benchmark comprises equity, fixed income, real estate, and other market indices weighted in proportions corresponding to ARMB's investment policy.

### **2023 Fiscal Year Market Overview**

A recession in the U.S. does not appear imminent, despite the most aggressive rate hikes since the 1980s over the past 15 months. The labor market remains strong, expectations for 2Q23 GDP growth are positive, consumer spending has exceeded expectations, and even housing has shown signs of life. Further good news comes from inflation, which has moderated, though largely due to falling energy prices. We have also successfully weathered a couple of storms this year; regional bank worries have abated after the collapse of Signature Bank, Silicon Valley Bank, and First Republic, and the debt ceiling saga is behind us.

# Investment Section

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On the good news front: 1Q23 GDP was a robust 2% (raised sharply from the most recent estimate of 1.3%). Consumer spending rose 4.2% in 1Q, the strongest growth seen in nearly two years. In June, the Conference Board reported a sharp 7% monthly jump in its Consumer Confidence Index, bringing it to its highest level since January 2022. New home sales surged more than 12% in May (+20% year-over-year (YOY)) with gains broad-based geographically, according to data from the Census Bureau. Housing prices have risen in 2023 and are now just 2.4% off the June peak, according to the S&P Case-Shiller National Home Price Index. The labor market remained resilient. The Bureau of Labor Statistics reported April job openings, according to the Job Openings and Labor Turnover Survey (JOLTS), remained at just over 10 million with about 6 million unemployed. Unemployment remained low at 3.7% in May and average hourly earnings (\$33.44) were up 4.3% over the past year, a bit higher than core inflation.

But is this all too good to be true? The Fed has not abandoned its rate hike path and goal of 2% inflation and has suggested that further hikes are coming. Higher interest rates have a lagged effect, but the impact can already be seen in some areas. In April, nearly 50% of U.S. banks reported tightening lending standards for loans to small businesses. Rising payments for credit card debt, auto loans, commercial mortgage payments, and corporate debt all have the potential to put the brakes on economic growth. While the default rate for corporations has not ticked up materially, a June report from S&P Global was a bit ominous: "...the tally of companies that have gone bankrupt so far in 2023 is higher than the first four months of any year since 2010." Commercial real estate woes, especially office and retail, are also on the radar of the more pessimistic crowd. The resumption of student loan payments in August could also temper growth later this year. Americans owe roughly \$1.8 trillion in federal and private student loan debt.

And there is mixed news: Headline CPI was up 4.0% over the past 12 months (as of May), the lowest since March 2021, with Core up 5.3% (down from a 6.6% cycle high in September). Headline CPI has benefited from falling energy prices (-12% YOY) while Core has not moderated as much and has the Fed's attention. Within Core, shelter costs (+8% YOY) have been particularly sticky and comprise around 40% of the measure. The Fed's favored inflation metric, the Personal Consumption Expenditures Index, showed progress with a +3.8% gain in May (YOY), down from 5.4% in January. As with CPI, the Core measure remains more stubborn and was up 4.6% in May (YOY), down only slightly from January's 4.7%.

U.S. equity markets finished the fiscal year 2023 in the positive territory after a tumultuous 2022. The Russell 3000 Index, a measure of broad U.S. equity, was down 4.46% at the start of the fiscal year before rising 7.18% in 4Q22, 7.18% in 1Q23, and 8.39% in 2Q23 as investor sentiment improved. Domestic stocks soared over the exuberance for any company associated with AI. Overseas markets also rebounded throughout the fiscal year aided by currency appreciation vs. the U.S. dollar. The MSCI ACWI ex-U.S. IMI (Net) Index, a broad benchmark reflecting developed and emerging markets, but excluding U.S. equities, climbed 2.38% for the quarter and 12.47% for the fiscal year. The MSCI All Country World Index (Net), a broad measure of the total global equity market (including the U.S.), increased 6.18% in the most recent quarter and 16.53% for the fiscal year.

The Fed took a pause at its June meeting, leaving the Fed Funds target at 5.00% – 5.25%. The Fed's median prediction is 4.6% for the end of 2024, but the distribution reflects a wide range of views that range from 3.6% to 5.9%. The Bloomberg U.S. Aggregate Bond Index, a widely-used gauge of the investment grade domestic U.S. bond market, fell modestly for the quarter (-0.84%) and for the fiscal year (-0.94%) as interest rates rose. The 10-year U.S. Treasury yield was 3.81% as of fiscal yearend, up from 3.48% as of 3/31. The yield curve was sharply inverted at quarter-end with the 2-year U.S. Treasury yielding 4.87%.

Private real estate, as measured by the NCREIF Property Index, was negative for the first time since fiscal year 2010. In fiscal year 2023, the NCREIF Property Index returned -6.60% hurt by office property. Publicly traded real estate, as measured by the FTSE NAREIT All Equity Index, outperformed private markets on the downside, returning -4.39% for the fiscal year 2023.

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ARMB's actual asset groupings delivered the following one-year returns through June 30, 2023<sup>1</sup>:

|                        |        |
|------------------------|--------|
| Domestic Stocks:       | 17.77% |
| Global ex-U.S. Stocks: | 15.14% |
| Multi-Asset:           | 4.09%  |
| Fixed Income:          | 0.48%  |
| Real Assets:           | 2.37%  |
| Private Equity:        | -3.29% |

For the fiscal year ended June 30, 2023, the Public Employees Retirement System (PERS) had a time-weighted total return of 7.03%. The Teachers Retirement System (TRS) had a time-weighted total return of 7.02%. Both systems' gross return trailed their strategic policy target return of 7.53% and the median return for Callan's Public Fund Sponsor database of 11.97%.

Over longer trailing periods, PERS and TRS have outperformed their target index returns. The 5-year annualized return was 7.68% for PERS and 7.67% for TRS, compared to the benchmark return of 6.52% for both Plans. The ten-year annualized return was 8.17% for PERS and 8.18% for TRS. Both were above the 10-year target return of 7.26%. Over 31.75 years – the longest period of available data – PERS and TRS achieved annualized total returns of 7.77% and 7.81%, respectively. Both exceeded the corresponding policy benchmark return of 7.49%.

The 2023 fiscal year returns of the PERS and TRS pension ("DB") and health care ("HC") programs are listed in the table below.

|         | PERS DB | PERS HC | TRS DB | TRS HC |
|---------|---------|---------|--------|--------|
| FY 2023 | 7.03%   | 7.11%   | 7.02%  | 7.11%  |

The pension and health care systems are well diversified and currently have asset allocation policies that, in our opinion, are consistent with achieving a long-term "real" (above inflation) return of 4.5%.

In summary, fiscal year 2023 was a year in which ARMB's Total Fund returns were positive, as were those of most broad asset class returns. PERS and TRS produced lower returns than the average public fund, both ranking in the 84<sup>th</sup> percentile within the Public Fund Sponsor peer group for the one-year period ended June 30, 2023. Lower peer group rankings were a result of the Funds' relative underweight to equities and relative overweight to alternatives vs peers.

Sincerely,



Steve Center  
Senior Vice President

c: Zach Hanna  
Ivan Cliff

<sup>1</sup>Note PERS asset class returns are used to represent the asset class performance of all plans.

# Investment Section

**Department of Revenue  
Treasury Division Staff  
As of June 30, 2023**

|  |  |   |  |
|--|--|---|--|
| <b>Commissioner</b><br>Adam Crum                       | <b>Chief Investment Officer</b><br>Zachary Hanna   | <b>Investment Officers</b><br>Shane Carson<br>James Cheng<br>Casey Colton<br>Victor Djajalie<br>Kevin Elliot<br>Benjamin Garrett<br>Emily Howard<br>Sean Howard | Kevin Liu<br>Robyn Mesdag<br>Mark Moon<br>Cahal Morehouse<br>Nicholas Orr<br>Stephanie Pham<br>Steve Sikes |
| <b>Deputy Commissioner</b><br>Fadil Limani             | <b>Comptroller</b><br>Vacant   |   |  |
| <b>Treasury Division Director</b><br>Pamela Leary, CPA | <b>Cash Management</b><br>Jesse Blackwell<br><br><b>ARMB Liaison Officer</b><br>Alysia Jones |   |  |

**External Money Managers and Consultants**

|   |   |
|---|---|
| <p><b>Opportunistic Fixed Income</b><br/>Fidelity Investment Asset Management<br/><i>Merrimack, NH</i><br/>MacKay Shields LLC<br/><i>New York, NY</i></p> <p><b>Global Equities – Large Cap</b><br/>Arrowstreet Capital, LP<br/><i>Boston, MA</i><br/>Baille Gifford Overseas Ltd.<br/><i>Edinburgh, Scotland</i><br/>Brandes Investment Partners, L.P.<br/><i>San Diego, CA</i><br/>Capital Guardian Trust Co.<br/><i>Los Angeles, CA</i><br/>State Street Global Advisors<br/><i>Boston, MA</i><br/>Legal and General Investment Management America<br/><i>Chicago, IL</i><br/>First Eagle Investments<br/><i>New York, NY</i><br/>Acadian Asset Management<br/><i>Boston, MA</i></p> <p><b>Emerging Markets</b><br/>Legal and General Investment Management America, Inc.<br/><i>Chicago, IL</i></p> <p><b>Alternative Equity</b><br/>McKinley Capital Management LLC<br/><i>Anchorage, AK</i></p> <p><b>Alternate Beta</b><br/>Man Group<br/><i>London, UK</i></p> <p><b>Alternate Fixed Income</b><br/>Ares Management<br/><i>Los Angeles, CA</i><br/>Crestline Investors, Inc.<br/><i>Fort Worth, TX</i><br/>Prisma Capital<br/><i>New York, NY</i></p> <p><b>Other Opportunities</b><br/>Schroders Investment Management North America<br/><i>New York, NY</i></p> | <p><b>Tactical Asset Allocation</b><br/>Fidelity Investment Asset Management<br/><i>Smithfield, RI</i><br/>PineBridge Investments<br/><i>New York, NY</i></p> <p><b>Private Equity</b><br/>Abbott Capital Management, L.P.<br/><i>New York, NY</i><br/>Advent International<br/><i>Boston, MA</i><br/>Battery Ventures<br/><i>Boston, MA</i><br/>Clearlake Capital<br/><i>Santa Monica, CA</i><br/>Dyal Capital Partners<br/><i>New York, NY</i><br/>Genstar Capital<br/><i>San Francisco, CA</i><br/>Glendon Capital<br/><i>Santa Monica, CA</i><br/>Insight Partners<br/><i>New York, NY</i><br/>KKR Lending Partners<br/><i>New York, NY</i><br/>Lexington Partners<br/><i>New York, NY</i><br/>Merit Capital Partners<br/><i>Chicago, IL</i><br/>Neuberger Berman<br/><i>New York, NY</i><br/>New Mountain Partners<br/><i>New York, NY</i><br/>NGP<br/><i>Irving, TX</i><br/>Onex Partners<br/><i>New York, NY</i><br/>Pathway Capital Management, LLC<br/><i>Irvine, CA</i><br/>Sentinel Capital Partners<br/><i>New York, NY</i><br/>Summit Partners<br/><i>Boston, MA</i><br/>The Jordan Company<br/><i>New York, NY</i><br/>The Riverside Company<br/><i>New York, NY</i><br/>Warburg Pincus<br/><i>New York, NY</i></p> |
|---|---|

# Investment Section

## External Money Managers and Consultants (cont.)

### Real Assets – Farmland and Timber

Timberland Investment Resources LLC  
*Atlanta, GA*  
UBS Farmland Investors, LLC  
*Hartford, CT*

### Real Assets – Energy

EIG Global Energy Partners  
*Washington, D.C.*

### Real Assets – Infrastructure

IFM  
*New York, NY*  
J.P. Morgan Asset Management  
*New York, NY*

### Real Assets – Real Estate Core Commingled Accounts

BlackRock Realty  
*New York, NY*  
J.P. Morgan Asset Management Inc.  
*New York, NY*  
UBS Realty Investors, LLC  
*Hartford, CT*

### Real Assets – Real Estate Core Separate Accounts

Sentinel Real Estate Corporation  
*New York, NY*  
UBS Realty Investors, LLC  
*Hartford, CT*

### Real Assets – Non-Core Commingled Real Estate Funds

Almanac Realty Investors  
*New York, NY*  
Clarion Partners  
*New York, NY*  
KKR & Co.  
*New York, NY*  
Silverpeak Real Estate Partners  
*New York, NY*

### Supplemental Benefits System, Deferred Compensation Plan, and Defined Contribution Plans

Baillie Gifford Overseas Ltd.  
*Edinburgh, Scotland*  
BlackRock  
*San Francisco, CA*  
Brandes Investment Partners  
*San Diego, CA*  
J.P. Morgan Asset Management Inc.  
*New York, NY*  
Northern Trust  
*Chicago, IL*  
State Street Global Advisors  
*Boston, MA*  
T. Rowe Price Investment Services  
*Baltimore, MD*

### Investment Consultants

Callan Associates, Inc.  
*Denver, CO*

### Investment Advisory Council

Jerrold Mitchell  
*Johns Island, SC*  
Ruth Traylor  
*Monument, CO*  
William Jennings  
*Colorado Springs, CO*

### Independent Auditors

KPMG, LLP  
*Anchorage, AK*

### Actuaries

Buck, A Gallagher Company  
*New York, NY*  
Gabriel, Roeder, Smith & Company  
*Denver, CO*

### Global Master Custodian

State Street Bank & Trust Co.  
*Boston, MA*

# Investment Section

## Teachers' Retirement System Investment Report

### INVESTMENTS

The investment goals of the State of Alaska Teachers' Retirement System are the long-term return and sustainability of the pension funds under management. Annually, the Alaska Retirement Management Board (ARMB) sets its asset allocation strategy in order to reflect changes in the marketplace while still retaining an expected optimal risk/return level within the set constraints and objectives of the ARMB.

The ARMB categorizes its investments into six asset classes: Broad Domestic Equity, Global Equity Ex-U.S., Fixed Income, Multi-Asset, Real Assets, and Private Equity. The performance of each asset class is compared with a benchmark comprised of one or more market indices. The performance for the total portfolio is compared with its policy portfolio, determined by calculating the weighted performance of the underlying asset class benchmarks at the portfolio's target asset allocation. The asset class benchmarks are illustrated below:

| Asset Class             | Benchmark   |
|-------------------------|---|
| Broad Domestic Equity   | Russell 3000  |
| Global Equities Ex-U.S. | MSCI All Country World Ex-U.S. IMI Net  |
| Fixed Income            | 95% Bloomberg Barclays U.S. Aggregate<br>5% 3-Month Treasury Bill                             |
| Multi-Asset             | 60% MSCI All Country World IMI Net<br>40% Bloomberg Barclays U.S. Aggregate                   |
| Real Assets             | 35% NFI-ODCE<br>15% FTSE-NAREIT<br>25% NCREIF Farmland<br>10% NCREIF Timberland<br>15% CPI+4% |
| Private Equity          | 1/3 S&P 500<br>1/3 Russell 2000<br>1/3 MSCI EAFE Net  |

The target asset allocation is determined by the ARMB, utilizing capital market assumptions provided by its independent general investment consultant, Callan LLC. During the fiscal year, the ARMB's target asset allocation was 27% Broad Domestic Equity, 18% Global Equities Ex-U.S., 19% Fixed Income, 8% Multi-Asset, 14% Real Assets, and 14% Private Equity. Over the next 20 years, the target asset allocation is expected to generate a return of 6.90% with a standard deviation of 13.93%.



# Investment Section

## Teachers' Retirement System Schedule of Investment Results Fiscal Years Ended June 30

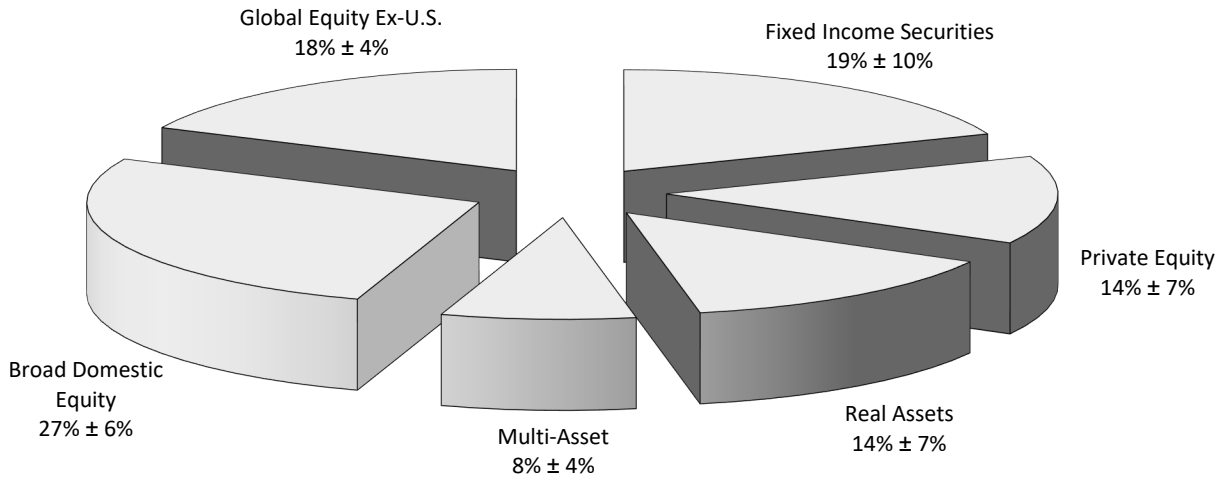
|                                  | 2019   | 2020   | 2021   | 2022    | 2023   | Annualized |        |
|----------------------------------|--------|--------|--------|---------|--------|------------|--------|
|                                  |        |        |        |         |        | 3 Year     | 5 Year |
| <b>Total Fund</b>                |        |        |        |         |        |            |        |
| TRS                              | 6.39%  | 3.83%  | 27.65% | (4.10%) | 7.02%  | 9.42%      | 7.67%  |
| <i>Custom Composite Index</i>    | 5.65   | 4.64   | 24.95  | (7.86)  | 7.53   | 7.44       | 6.52   |
| <i>Actuarial Earnings Rate</i>   | 7.38   | 7.38   | 7.38   | 7.38    | 7.25   | 7.25       | 7.25   |
| <b>Broad Domestic Equity</b>     |        |        |        |         |        |            |        |
| TRS                              | 8.40   | 2.62   | 42.68  | (11.73) | 17.76  | 14.04      | 10.53  |
| <i>Custom Composite Index</i>    | 8.98   | 6.53   | 44.16  | (13.87) | 18.95  | 13.89      | 11.39  |
| <b>Fixed Income</b>              |        |        |        |         |        |            |        |
| TRS                              | 6.34   | 7.31   | 2.20   | (6.99)  | 0.43   | (1.54)     | 1.73   |
| <i>Custom Composite Index</i>    | 6.19   | 7.67   | (0.31) | (9.78)  | (0.71) | (3.70)     | 0.42   |
| <b>Multi-Asset</b>               |        |        |        |         |        |            |        |
| TRS                              | 7.21   | 0.52   | 23.86  | (10.58) | 4.09   | 4.86       | 4.43   |
| <i>Custom Composite Index</i>    | 9.72   | 9.32   | 23.20  | (13.89) | 9.14   | 5.01       | 6.79   |
| <b>Real Assets</b>               |        |        |        |         |        |            |        |
| TRS                              | 6.09   | 2.06   | 9.86   | 14.29   | 2.37   | 8.73       | 6.84   |
| <i>Custom Composite Index</i>    | 7.23   | 1.19   | 4.62   | 14.80   | 3.41   | 8.01       | 6.53   |
| <b>Global Equity Ex-U.S.</b>     |        |        |        |         |        |            |        |
| TRS                              | (0.08) | (3.59) | 38.53  | (20.96) | 15.14  | 8.03       | 3.96   |
| <i>MSCI ACWI ex-U.S.</i>         | 0.26   | (4.74) | 37.18  | (19.86) | 12.47  | 7.33       | 3.38   |
| <b>Private Equity</b>            |        |        |        |         |        |            |        |
| TRS                              | 17.66  | 10.47  | 50.67  | 26.25   | (3.29) | 22.53      | 19.04  |
| <i>Custom Composite Index</i>    | 2.71   | (1.35) | 36.80  | 3.42    | (6.83) | 9.65       | 5.96   |
| <b>Absolute Return</b>           |        |        |        |         |        |            |        |
| TRS                              | 4.08   | -      | -      | -       | -      | -          | -      |
| <i>3-month Treasury Bill +5%</i> | 1.15   | -      | -      | -       | -      | -          | -      |
| <b>Cash Equivalent</b>           |        |        |        |         |        |            |        |
| TRS                              | 2.50   | -      | -      | -       | -      | -          | -      |
| <i>3-month Treasury Bill</i>     | 2.31   | -      | -      | -       | -      | -          | -      |

MSCI ACWI = Morgan Stanley Capital International All Country World Index  
Returns for periods longer than one year are reported on an annualized basis.  
Basis of calculation: Time-Weighted rate of return based on the market rate of return.

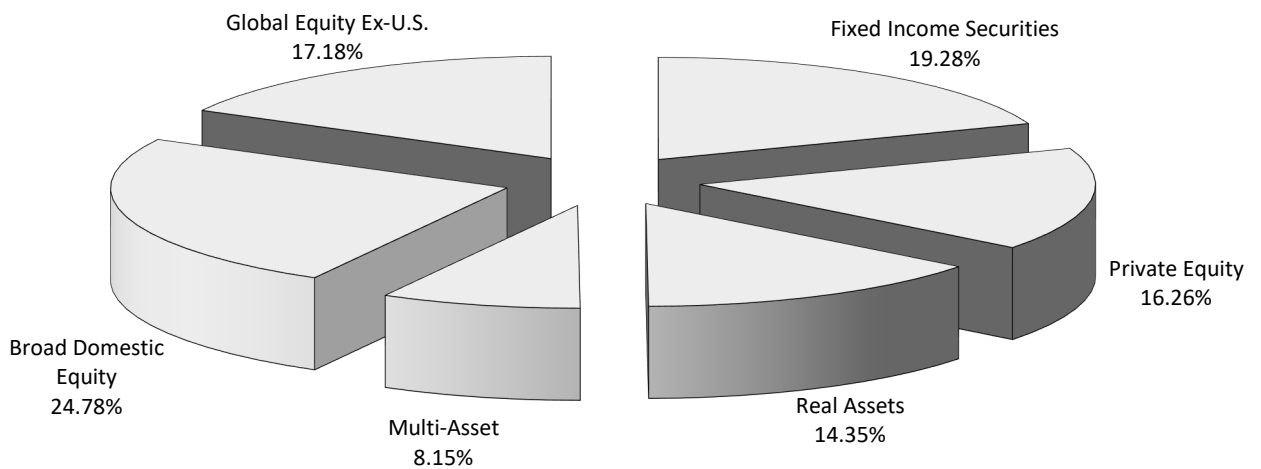
# Investment Section

## Teachers' Retirement System Asset Allocation June 20, 2023

### Policy

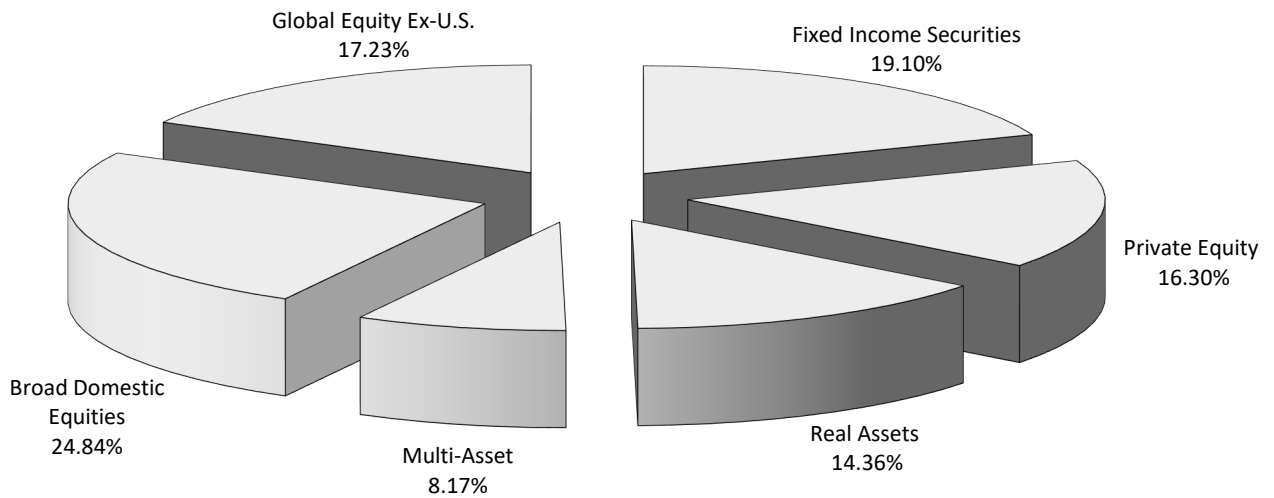


### Actual — Defined Benefit Pension

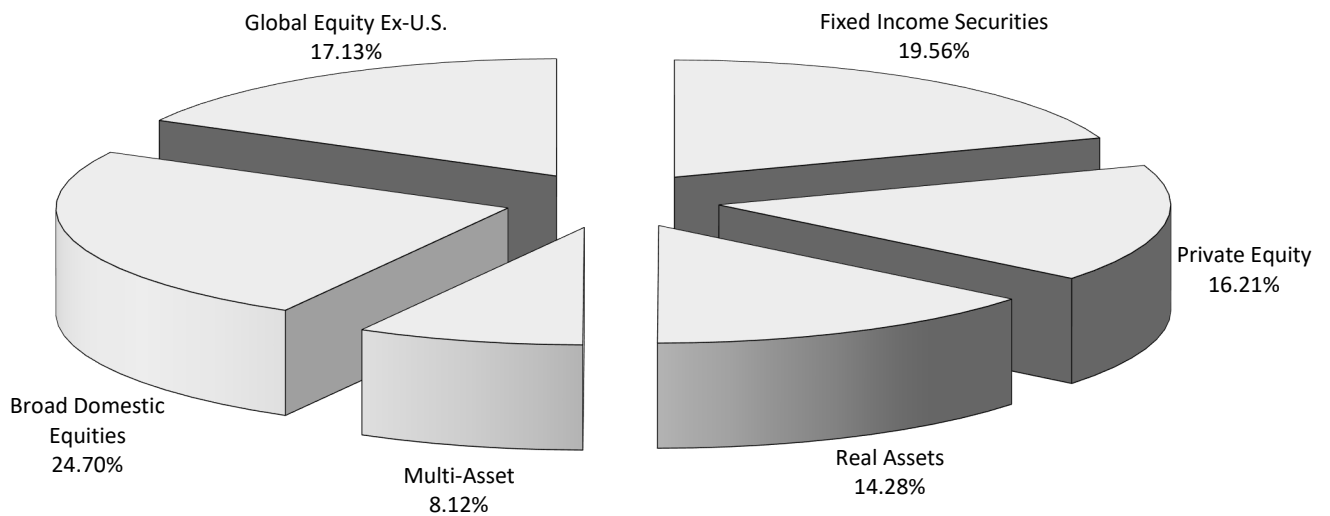


## Teachers' Retirement System Asset Allocation June 20, 2023

### Actual — Defined Benefit Alaska Retiree Healthcare Trust



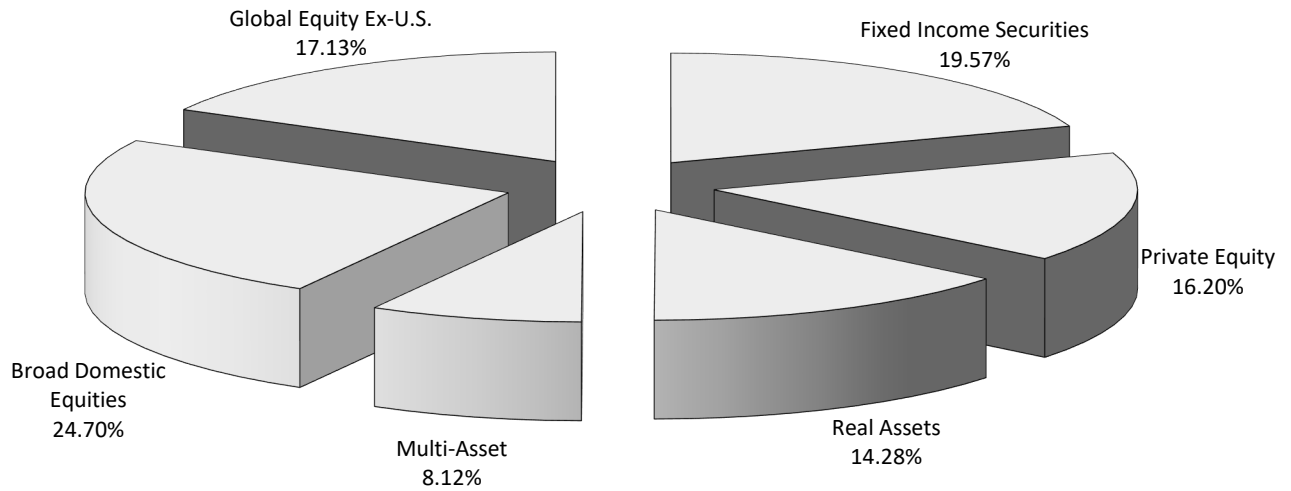
### Actual — Occupational Death & Disability



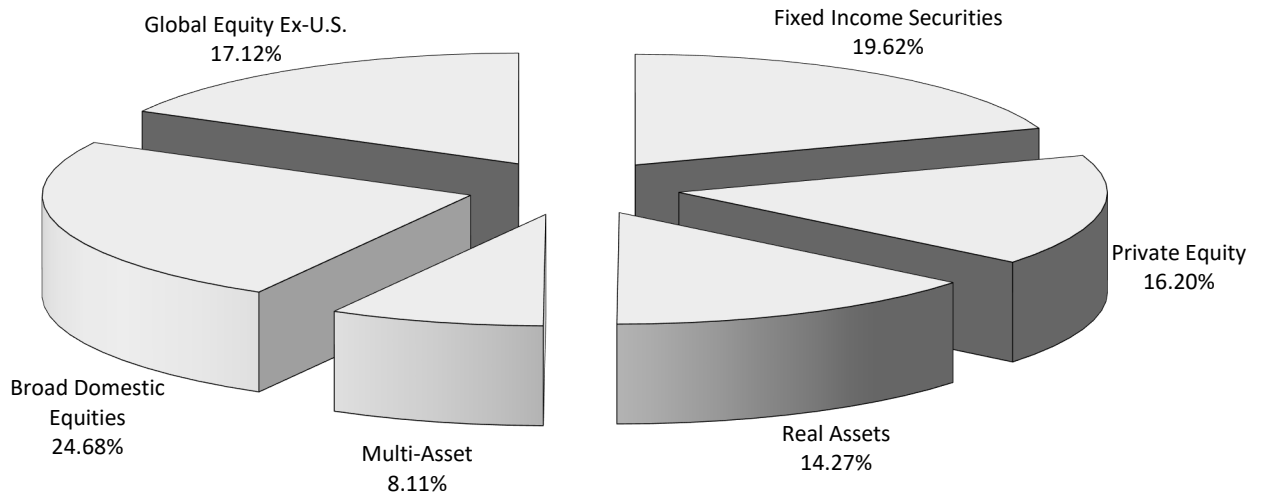
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## Teachers' Retirement System Asset Allocation June 20, 2023

### Actual — Retiree Medical Plan



### Actual — Health Reimbursement Arrangement



# Investment Section

## Alaska Retirement Management Board Top Ten Holdings by Asset Type June 30, 2023

Invested assets under the fiduciary responsibility of the ARMB have been commingled in various investment pools to manage the overall cost of the program. Using investment pools increases investment efficiency in three ways. First, combining individual funds' cash inflows and outflows to offset each other reduces the amount of cash on hand needed to support daily operations. Second, pooling investments significantly reduces accounting, budgeting, and administrative costs. Finally, the ARMB can achieve economies of scale by making available investment options that could not otherwise be practically provided for smaller retirement funds. Below are the ten largest fixed income and equity holdings.

### Fixed Income

| Rank | Largest Fixed Income Holdings          | Fair Value    | Par Value    |
|------|--|---------------|--------------|
| 1    | U.S. Treasury N/B 3.875% 5/15/2043     | \$ 55,666,547 | \$57,048,182 |
| 2    | U.S. Treasury N/B 4.125% 6/15/2026     | 45,380,224    | 45,842,228   |
| 3    | U.S. Treasury N/B 4.0% 6/30/2028       | 40,813,904    | 41,038,332   |
| 4    | U.S. Treasury N/B 3.75% 6/30/2030      | 38,707,829    | 39,228,837   |
| 5    | U.S. Treasury N/B 3.625% 2/15/2053     | 37,908,915    | 39,501,311   |
| 6    | U.S. Treasury N/B 1.375% 11/15/2040    | 34,488,552    | 51,547,579   |
| 7    | FNMA Pool CB2662 3.0% 1/1/2052         | 30,801,223    | 34,838,607   |
| 8    | FED HM LN PC Pool SD8230 4.5% 6/1/2052 | 29,679,569    | 30,863,604   |
| 9    | FNMA Pool MA4644 4.0% 5/1/2052         | 27,156,713    | 28,921,378   |
| 10   | U.S. Treasury N/B 3.625% 3/31/2028     | 26,888,437    | 27,529,355   |

### Equities

| Rank | Largest Equity Holdings         | Fair Value     | Shares  |
|------|---------------------------------|----------------|---------|
| 1    | Apple Inc.                      | \$ 138,979,838 | 716,502 |
| 2    | Microsoft Corp.                 | 136,152,756    | 399,814 |
| 3    | Amazon.com Inc.                 | 55,252,770     | 423,848 |
| 4    | Nvidia Corp.                    | 48,344,079     | 114,283 |
| 5    | Meta Platforms Inc. Class A     | 37,759,633     | 131,576 |
| 6    | Alphabet Inc. Class A           | 37,356,895     | 312,088 |
| 7    | Berkshire Hathaway Inc. Class B | 35,194,808     | 103,211 |
| 8    | Alphabet Inc. Class C           | 31,877,293     | 263,514 |
| 9    | Tesla inc.                      | 31,290,817     | 119,536 |
| 10   | UnitedHealth Group Inc.         | 26,448,471     | 54,028  |

Additional investment information may be obtained from the Alaska Department of Revenue, Treasury Division, P.O. Box 110405, Juneau, Alaska 99811-0405.

# Investment Section

## Teachers' Retirement System Schedule of Investment Management Fees Year Ended June 30, 2023

|  | Fair Value       | Fees       |
|--|------------------|------------|
| <b>Investment Management</b>                   |                  |            |
| Total Fixed Income                             | \$ 356,707,255   | 1,130,987  |
| Total Multi-Asset                              | 809,048,822      | 4,708,190  |
| Total Broad Domestic Equity                    | 2,461,095,719    | 223,784    |
| Total Global Equity Ex-U.S.                    | 1,706,891,115    | 2,887,181  |
| Total Private Equity                           | 1,614,796,579    | 6,552,940  |
| Total Real Assets                              | 1,424,429,377    | 7,780,845  |
| Total Investment Management                    |                  | 23,283,927 |
| <br><b>Custodian</b>                           |                  |            |
| State Street Bank                              |                  | 450,234    |
| <br><b>Investment Advisory and Performance</b> |                  |            |
| Callan Associates                              |                  | 221,156    |
| Investment Advisory Council                    |                  | 24,637     |
| Total Investment Advisory and Performance      |                  | 245,793    |
| <br><b>Participant Directed</b>                |                  |            |
| Custodian - State Street Bank                  |                  | 104,675    |
| Investment Management                          |                  | 800,006    |
| Synthetic Investment Contract Wrap Fees        |                  | 71,381     |
| Total Participant Directed                     |                  | 976,062    |
|  | \$ 8,372,968,867 | 24,956,016 |

# Investment Section

## Teachers' Retirement System Investment Summary Schedule June 30, 2023

| Investments (at Fair Value)         | Defined Benefit - Pension |       |                         | % of Total Assets |
|-------------------------------------|---------------------------|-------|-------------------------|-------------------|
|                                     | Asset Allocation          |       | Fair Value              |                   |
|                                     | Policy                    | Range |                         |                   |
| <b>Fixed Income Securities</b>      |                           |       |                         |                   |
| Short-term Fixed Income Pool        |                           |       | \$ 64,597,994           |                   |
| Securities Lending Cash Pool        |                           |       | 28,817                  |                   |
| Opportunistic Fixed Income          |                           |       | 218,749,436             |                   |
| ARMB U.S. Aggregate Fixed Income    |                           |       | 814,107,031             |                   |
| Transition Pool                     |                           |       | 77,084,993              |                   |
| Total Fixed Income Securities       | 19.00%                    | ± 10% | 1,174,568,271           | 19.28%            |
| <b>Multi-Asset</b>                  |                           |       |                         |                   |
| Alternative Equity Strategies Pool  |                           |       | 61,505,370              |                   |
| Tactical Allocation Strategies Pool |                           |       | 210,486,689             |                   |
| Other Opportunistic Pool            |                           |       | (21)                    |                   |
| Alternative Beta Pool               |                           |       | 57,255,659              |                   |
| Alternative Fixed Income            |                           |       | 166,898,536             |                   |
| Total Multi-Asset                   | 8.00%                     | ± 4%  | 496,146,233             | 8.15%             |
| <b>Broad Domestic Equity</b>        |                           |       |                         |                   |
| Large Cap Pool                      |                           |       | 1,384,546,875           |                   |
| Small Cap Pool                      |                           |       | 124,711,409             |                   |
| Total Broad Domestic Equity         | 27.00%                    | ± 6%  | 1,509,258,284           | 24.78%            |
| <b>Global Equity Ex-U.S.</b>        |                           |       |                         |                   |
| International Equity Pool           |                           |       | 858,878,496             |                   |
| Emerging Markets Equity Pool        |                           |       | 187,866,318             |                   |
| Total Global Equity Ex-U.S.         | 18.00%                    | ± 4%  | 1,046,744,814           | 17.18%            |
| <b>Private Equity</b>               |                           |       |                         |                   |
| Private Equity Pool                 |                           |       | 990,268,245             |                   |
| Total Private Equity                | 14.00%                    | ± 7%  | 990,268,245             | 16.26%            |
| <b>Real Assets</b>                  |                           |       |                         |                   |
| Real Estate Pool                    |                           |       | 321,441,719             |                   |
| Real Estate Investment Trust Pool   |                           |       | 93,131,760              |                   |
| Infrastructure Private Pool         |                           |       | 166,980,412             |                   |
| Energy Pool                         |                           |       | 10,413,238              |                   |
| Farmland Pool                       |                           |       | 205,154,572             |                   |
| Timber Pool                         |                           |       | 77,014,836              |                   |
| Total Real Assets                   | 14.00%                    | ± 7%  | 874,136,537             | 14.35%            |
| <b>Total Invested Assets</b>        | <b>100.00%</b>            |       | <b>\$ 6,091,122,384</b> | <b>100.00%</b>    |

# Investment Section

## Teachers' Retirement System Investment Summary Schedule June 30, 2023

| Investments (at Fair Value)                                | Asset Allocation |       | Fair Value            | % of Total Assets |
|--|------------------|-------|-----------------------|-------------------|
|  | Policy           | Range |                       |                   |
| <b>Defined Contribution - Pension Participant Directed</b> |                  |       |                       |                   |
| <b>Cash and Cash Equivalents</b>                           |                  |       |                       |                   |
| Short-Term Fixed Income Pool                               | N/A              | N/A   | \$ 407,419            |                   |
| Total Cash and Cash Equivalents                            |                  |       | 407,419               | 0.05%             |
| <b>Pooled Investment Funds (1)</b>                         |                  |       |                       |                   |
| T. Rowe Price  |                  |       |                       |                   |
| Alaska Balanced Trust                                      |                  |       | 25,408,809            |                   |
| Long-Term Balanced Fund                                    |                  |       | 25,299,387            |                   |
| Target 2010 Trust  |                  |       | 1,349,247             |                   |
| Target 2015 Trust  |                  |       | 3,661,841             |                   |
| Target 2020 Trust  |                  |       | 11,539,204            |                   |
| Target 2025 Trust  |                  |       | 26,807,461            |                   |
| Target 2030 Trust  |                  |       | 39,161,627            |                   |
| Target 2035 Trust  |                  |       | 55,389,373            |                   |
| Target 2040 Trust  |                  |       | 70,266,701            |                   |
| Target 2045 Trust  |                  |       | 101,234,891           |                   |
| Target 2050 Trust  |                  |       | 140,048,018           |                   |
| Target 2055 Trust  |                  |       | 98,199,052            |                   |
| Target 2060 Trust  |                  |       | 9,118,052             |                   |
| Target 2065 Trust  |                  |       | 2,479,648             |                   |
| Total Pooled Investment Funds                              |                  |       | 609,963,311           | 69.07%            |
| <b>Collective Investment Funds (1)</b>                     |                  |       |                       |                   |
| State Street Global Advisors                               |                  |       |                       |                   |
| SSgA Treasury Money Market Fund                            |                  |       | 6,187,905             |                   |
| S&P Stock Index Fund                                       |                  |       | 44,677,714            |                   |
| Russell 3000 Index   |                  |       | 26,881,073            |                   |
| World Equity Ex-U.S. Index                                 |                  |       | 28,086,914            |                   |
| Passive U.S. Bond Index Fund                               |                  |       | 30,265,489            |                   |
| Brandes Institutional                                      |                  |       |                       |                   |
| Alaska International Equity Fund                           |                  |       | 24,255,597            |                   |
| BlackRock Institutional Trust Company                      |                  |       |                       |                   |
| Strategic Completion Fund                                  |                  |       | 15,535,964            |                   |
| RCM  |                  |       |                       |                   |
| Sustainable Core Opportunities Fund                        |                  |       | 12,263,916            |                   |
| T. Rowe Price  |                  |       |                       |                   |
| Small-Cap Stock Fund                                       |                  |       | 35,941,092            |                   |
| Total Collective Investment Funds                          |                  |       | 224,095,664           | 25.37%            |
| <b>Synthetic Investment Funds (1)</b>                      |                  |       |                       |                   |
| T. Rowe Price  |                  |       |                       |                   |
| Stable Value Fund  |                  |       | 48,687,941            |                   |
| Total Collective Investment Funds                          |                  |       | 48,687,941            | 5.51%             |
| <b>Total Invested Assets</b>                               |                  |       | <b>\$ 883,154,335</b> | <b>100.00%</b>    |

(1) Pooled Investment Funds, Collective Investment Funds and Synthetic Investment Funds are participant directed and therefore are not subject to an asset allocation.



# Investment Section

## Teachers' Retirement System Investment Summary Schedule June 30, 2023

| Defined Benefit - Alaska Retiree Healthcare Trust |                  |       |                         |                   |
|---|------------------|-------|-------------------------|-------------------|
| Investments (at Fair Value)                       | Asset Allocation |       | Fair Value              | % of Total Assets |
|   | Policy           | Range |                         |                   |
| <b>Fixed Income Securities</b>                    |                  |       |                         |                   |
| Short-term Fixed Income Pool                      |                  |       | \$ 29,733,234           |                   |
| Securities Lending Cash Pool                      |                  |       | 16,656                  |                   |
| Opportunistic Fixed Income Pool                   |                  |       | 126,698,594             |                   |
| ARMB U.S. Aggregate Fixed Income                  |                  |       | 471,526,732             |                   |
| Transition Pool                                   |                  |       | 44,647,245              |                   |
| Total Fixed Income Securities                     | 19.00%           | ± 10% | 672,622,461             | 19.10%            |
| <b>Multi-Asset</b>                                |                  |       |                         |                   |
| Alternative Equity Strategies Pool                |                  |       | 35,623,629              |                   |
| Tactical Allocation Strategies Pool               |                  |       | 121,912,876             |                   |
| Other Opportunistic Pool                          |                  |       | (12)                    |                   |
| Alternative Beta Pool                             |                  |       | 33,162,235              |                   |
| Alternative Fixed Income                          |                  |       | 96,666,836              |                   |
| Total Multi-Asset                                 | 8.00%            | ± 4%  | 287,365,564             | 8.17%             |
| <b>Broad Domestic Equity</b>                      |                  |       |                         |                   |
| Large Cap Pool                                    |                  |       | 801,922,671             |                   |
| Small Cap Pool                                    |                  |       | 72,232,225              |                   |
| Total Broad Domestic Equity                       | 27.00%           | ± 6%  | 874,154,896             | 24.84%            |
| <b>Global Equity Ex-U.S.</b>                      |                  |       |                         |                   |
| International Equity Pool                         |                  |       | 497,458,222             |                   |
| Emerging Markets Equity Pool                      |                  |       | 108,811,253             |                   |
| Total Global Equity Ex-U.S.                       | 18.00%           | ± 4%  | 606,269,475             | 17.23%            |
| <b>Private Equity</b>                             |                  |       |                         |                   |
| Private Equity Pool                               |                  |       | 573,558,505             |                   |
| Total Private Equity                              | 14.00%           | ± 7%  | 573,558,505             | 16.30%            |
| <b>Real Assets</b>                                |                  |       |                         |                   |
| Real Estate Pool                                  |                  |       | 185,263,433             |                   |
| Real Estate Investment Trust Pool                 |                  |       | 53,941,402              |                   |
| Infrastructure Private Pool                       |                  |       | 96,714,201              |                   |
| Energy Pool                                       |                  |       | 6,031,331               |                   |
| Farmland Pool                                     |                  |       | 118,824,550             |                   |
| Timber Pool                                       |                  |       | 44,606,590              |                   |
| Total Real Assets                                 | 14.00%           | ± 7%  | 505,381,507             | 14.36%            |
| <b>Total Invested Assets</b>                      | <b>100.00%</b>   |       | <b>\$ 3,519,352,408</b> | <b>100.00%</b>    |

# Investment Section

## Teachers' Retirement System Investment Summary Schedule June 30, 2023

| Investments (at Fair Value)         | Occupational Death and Disability |       |                     | % of Total Assets |
|-------------------------------------|-----------------------------------|-------|---------------------|-------------------|
|                                     | Asset Allocation                  |       | Fair Value          |                   |
|                                     | Policy                            | Range |                     |                   |
| <b>Fixed Income Securities</b>      |                                   |       |                     |                   |
| Short-term Fixed Income Pool        |                                   |       | \$ 102,707          |                   |
| Securities Lending Cash Pool        |                                   |       | 35                  |                   |
| Opportunistic Fixed Income Pool     |                                   |       | 265,179             |                   |
| ARMB U.S. Aggregate Fixed Income    |                                   |       | 986,806             |                   |
| Transition Pool                     |                                   |       | 93,437              |                   |
| Total Fixed Income Securities       | 19.00%                            | ± 10% | 1,448,164           | 19.56%            |
| <b>Multi-Asset</b>                  |                                   |       |                     |                   |
| Alternative Equity Strategies Pool  |                                   |       | 74,531              |                   |
| Tactical Allocation Strategies Pool |                                   |       | 255,110             |                   |
| Other Opportunities Pool            |                                   |       | -                   |                   |
| Alternative Beta Pool               |                                   |       | 69,357              |                   |
| Alternative Fixed Income            |                                   |       | 202,295             |                   |
| Total Multi-Asset                   | 8.00%                             | ± 4%  | 601,293             | 8.12%             |
| <b>Broad Domestic Equity</b>        |                                   |       |                     |                   |
| Large Cap Pool                      |                                   |       | 1,678,245           |                   |
| Small Cap Pool                      |                                   |       | 151,183             |                   |
| Total Broad Domestic Equity         | 27.00%                            | ± 6%  | 1,829,428           | 24.70%            |
| <b>Global Equity Ex-U.S.</b>        |                                   |       |                     |                   |
| International Equity Pool           |                                   |       | 1,041,090           |                   |
| Emerging Markets Equity Pool        |                                   |       | 227,740             |                   |
| Total Global Equity Ex-U.S.         | 18.00%                            | ± 4%  | 1,268,830           | 17.13%            |
| <b>Private Equity</b>               |                                   |       |                     |                   |
| Private Equity Pool                 |                                   |       | 1,200,299           |                   |
| Total Private Equity                | 14.00%                            | ± 7%  | 1,200,299           | 16.21%            |
| <b>Real Assets</b>                  |                                   |       |                     |                   |
| Real Estate Pool                    |                                   |       | 387,753             |                   |
| Real Estate Investment Trust Pool   |                                   |       | 112,856             |                   |
| Infrastructure Private Pool         |                                   |       | 202,368             |                   |
| Energy Pool                         |                                   |       | 12,588              |                   |
| Farmland Pool                       |                                   |       | 248,698             |                   |
| Timber Pool                         |                                   |       | 93,389              |                   |
| Total Real Assets                   | 14.00%                            | ± 7%  | 1,057,652           | 14.28%            |
| <b>Total Invested Assets</b>        | <b>100.00%</b>                    |       | <b>\$ 7,405,666</b> | <b>100.00%</b>    |

# Investment Section

## Teachers' Retirement System Investment Summary Schedule June 30, 2023

| Investments (at Fair Value)                      | Retiree Medical Plan |       | Fair Value           | % of Total Assets |
|--|----------------------|-------|----------------------|-------------------|
|  | Policy               | Range |                      |                   |
| <b>Fixed Income Securities</b>                   |                      |       |                      |                   |
| Short-term Fixed Income Pool                     |                      |       | \$ 1,075,718         |                   |
| Securities Lending Cash Pool                     |                      |       | 356                  |                   |
| Opportunistic Fixed Income Pool                  |                      |       | 2,724,004            |                   |
| ARMB U.S. Aggregate Fixed Income Transition Pool |                      |       | 10,137,700           |                   |
|  |                      |       | 959,899              |                   |
| Total Fixed Income Securities                    | 19.00%               | ± 10% | 14,897,677           | 19.57%            |
| <b>Multi-Asset</b>                               |                      |       |                      |                   |
| Alternative Equity Strategies Pool               |                      |       | 765,923              |                   |
| Tactical Allocation Strategies Pool              |                      |       | 2,621,131            |                   |
| Other Opportunities Pool                         |                      |       | -                    |                   |
| Alternative Beta Pool                            |                      |       | 713,010              |                   |
| Alternative Fixed Income                         |                      |       | 2,078,278            |                   |
| Total Multi-Asset                                | 8.00%                | ± 4%  | 6,178,342            | 8.12%             |
| <b>Broad Domestic Equity</b>                     |                      |       |                      |                   |
| Large Cap Pool                                   |                      |       | 17,241,029           |                   |
| Small Cap Pool                                   |                      |       | 1,552,974            |                   |
| Total Broad Domestic Equity                      | 27.00%               | ± 6%  | 18,794,003           | 24.70%            |
| <b>Global Equity Ex-U.S.</b>                     |                      |       |                      |                   |
| International Equity Pool                        |                      |       | 10,695,195           |                   |
| Emerging Markets Equity Pool                     |                      |       | 2,339,366            |                   |
| Total Global Equity Ex-U.S.                      | 18.00%               | ± 4%  | 13,034,561           | 17.13%            |
| <b>Private Equity</b>                            |                      |       |                      |                   |
| Private Equity Pool                              |                      |       | 12,331,344           |                   |
| Total Private Equity                             | 14.00%               | ± 7%  | 12,331,344           | 16.20%            |
| <b>Real Assets</b>                               |                      |       |                      |                   |
| Real Estate Pool                                 |                      |       | 3,983,057            |                   |
| Real Estate Investment Trust Pool                |                      |       | 1,159,712            |                   |
| Infrastructure Private Pool                      |                      |       | 2,079,352            |                   |
| Energy Pool                                      |                      |       | 129,698              |                   |
| Farmland Pool                                    |                      |       | 2,554,706            |                   |
| Timber Pool                                      |                      |       | 959,064              |                   |
| Total Real Assets                                | 14.00%               | ± 7%  | 10,865,589           | 14.28%            |
| <b>Total Invested Assets</b>                     | <b>100.00%</b>       |       | <b>\$ 76,101,516</b> | <b>100.00%</b>    |

# Investment Section

## Teachers' Retirement System Investment Summary Schedule June 30, 2023

| Investments (at Fair Value)         | Health Reimbursement Arrangement |       |                       | % of Total Assets |
|-------------------------------------|----------------------------------|-------|-----------------------|-------------------|
|                                     | Asset Allocation                 |       | Fair Value            |                   |
|                                     | Policy                           | Range |                       |                   |
| <b>Fixed Income Securities</b>      |                                  |       |                       |                   |
| Short-term Fixed Income Pool        |                                  |       | \$ 3,384,208          |                   |
| Securities Lending Cash Pool        |                                  |       | 1,081                 |                   |
| Opportunistic Fixed Income Pool     |                                  |       | 8,270,043             |                   |
| ARMB U.S. Aggregate Fixed Income    |                                  |       | 30,778,187            |                   |
| Transition Pool                     |                                  |       | 2,914,282             |                   |
| Total Fixed Income Securities       | 19.00%                           | ± 10% | 45,347,801            | 19.62%            |
| <b>Multi-Asset</b>                  |                                  |       |                       |                   |
| Alternative Equity Strategies Pool  |                                  |       | 2,325,259             |                   |
| Tactical Allocation Strategies Pool |                                  |       | 7,957,701             |                   |
| Other Opportunistic Pool            |                                  |       | (1)                   |                   |
| Alternative Beta Pool               |                                  |       | 2,164,620             |                   |
| Alternate Fixed Income              |                                  |       | 6,309,812             |                   |
| Total Multi-Asset                   | 8.00%                            | ± 4%  | 18,757,391            | 8.11%             |
| <b>Broad Domestic Equity</b>        |                                  |       |                       |                   |
| Large Cap Pool                      |                                  |       | 52,344,303            |                   |
| Small Cap Pool                      |                                  |       | 4,714,806             |                   |
| Total Broad Domestic Equity         | 27.00%                           | ± 6%  | 57,059,109            | 24.68%            |
| <b>Global Equity Ex-U.S.</b>        |                                  |       |                       |                   |
| International Equity Pool           |                                  |       | 32,470,904            |                   |
| Emerging Markets Equity Pool        |                                  |       | 7,102,532             |                   |
| Total Global Equity Ex-U.S.         | 18.00%                           | ± 4%  | 39,573,436            | 17.12%            |
| <b>Private Equity</b>               |                                  |       |                       |                   |
| Private Equity Pool                 |                                  |       | 37,438,187            |                   |
| Total Private Equity                | 14.00%                           | ± 7%  | 37,438,187            | 16.20%            |
| <b>Real Assets</b>                  |                                  |       |                       |                   |
| Real Estate Pool                    |                                  |       | 12,092,829            |                   |
| Real Estate Investment Trust Pool   |                                  |       | 3,520,924             |                   |
| Infrastructure Private Pool         |                                  |       | 6,312,876             |                   |
| Energy Pool                         |                                  |       | 393,677               |                   |
| Farmland Pool                       |                                  |       | 7,756,116             |                   |
| Timber Pool                         |                                  |       | 2,911,668             |                   |
| Total Real Assets                   | 14.00%                           | ± 7%  | 32,988,090            | 14.27%            |
| <b>Total Invested Assets</b>        | <b>100.00%</b>                   |       | <b>\$ 231,164,014</b> | <b>100.00%</b>    |

# Investment Section

## Teachers' Retirement System Recaptured Commission Fees Year Ended June 30, 2023

| Fund  | Global Equity |              | Total        |
|---|---------------|--------------|--------------|
|   | Ex-U.S.       | Multi-Asset  |              |
| Defined Benefit Plan – Pension                                | \$ 11         | 782          | 793          |
| Postemployment Benefit – Alaska Retiree<br>Healthcare Trust   | 7             | 445          | 452          |
| Postemployment Benefit – Occupational Death<br>and Disability | -             | 1            | 1            |
| Postemployment Benefit – Retiree Medical Plan                 | -             | 9            | 9            |
| Postemployment Benefit – Health<br>Reimbursement Arrangement  | -             | 28           | 28           |
| Total Recapture Commission Fees                               | <u>\$ 18</u>  | <u>1,265</u> | <u>1,283</u> |

The ARMB's Commission Recapture program has been in place since 1995, first working with various brokers then switching to the State Street program in 2005. Under a commission recapture program, a portion of the commissions and mark-ups on trades (placed through the State Street broker network) flow directly back to the fund.

The program allows managers to place trades for commission recapture purposes. The ARMB has established direction percentages for the managers to strive for, but is only requiring best efforts to meet them given their fiduciary obligation to achieve best execution of transactions.

The current rebate arrangement with State Street Global Markets (SSGM) is: 90% of the commissions received in excess of executing the brokers' execution-only rates; 100% of commissions in excess of its execution-only rates for all trading directed through SSGM.