



# Monthly Risk-Return Report

## As of July 31, 2016

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|                                |        |
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Based on actual BNY Mellon data through June 2016 and preliminary data for July 2016



### Asset Allocation and Policy Guidelines

As of July 31, 2016

| Asset Class                          | Assets and Allocation |               | Policy Target | Minimum Target | Maximum Target | Difference         |                |
|--------------------------------------|-----------------------|---------------|---------------|----------------|----------------|--------------------|----------------|
|                                      | \$ (MM)               | %             |               |                |                | From Policy Target | Within Target? |
| Total Public Markets Equity          | 4,797                 | 44.0%         | 45.0%         | 42.0%          | 48.0%          | -1.0%              | Yes            |
| Global Equity                        | 647                   | 5.9%          | 3.0%          | 0.0%           | 6.0%           | 2.9%               | Yes            |
| US Equity                            | 1,608                 | 14.7%         | 18.0%         | 13.0%          | 23.0%          | -3.3%              | Yes            |
| Non-US Equity Developed              | 1,526                 | 14.0%         | 15.0%         | 12.0%          | 18.0%          | -1.0%              | Yes            |
| Non-US Equity Emerging               | 1,017                 | 9.3%          | 9.0%          | 6.0%           | 11.0%          | 0.3%               | Yes            |
| Fixed Income                         | 2,898                 | 26.6%         | 24.0%         | 21.0%          | 27.0%          | 2.6%               | Yes            |
| Alternative Beta/Opportunistic/Other | 834                   | 7.7%          | 8.0%          | 7.0%           | 9.0%           | -0.3%              | Yes            |
| Total Private Assets                 | 2,375                 | 21.8%         | 23.0%         | 10.0%          | N/A            | -1.2%              | Yes            |
| Real Estate                          | 963                   | 8.8%          | 9.0%          | 5.0%           | N/A            | -0.2%              | Yes            |
| Private Equity                       | 770                   | 7.1%          | 8.0%          | 3.0%           | N/A            | -0.9%              | Yes            |
| Private Real Assets                  | 642                   | 5.9%          | 6.0%          | 3.0%           | N/A            | -0.1%              | Yes            |
| <b>Total Invested</b>                | <b>10,904</b>         | <b>100.0%</b> |               |                |                |                    |                |



## Portfolio and Benchmark Returns

As of July 31, 2016

|                                                                                       | MTD  | QTD  | FYTD | CYTD  | 1 Year | 3 Years | 5 Years |
|---------------------------------------------------------------------------------------|------|------|------|-------|--------|---------|---------|
| <b>SDCERA Total Trust Fund</b>                                                        | 2.4% | 2.4% | 2.4% | 5.1%  | 2.5%   | 5.6%    | 6.2%    |
| Actuarial Rate of Return                                                              | 0.6% | 1.9% | 0.6% | 4.4%  | 7.5%   | 7.7%    | 7.8%    |
| SDCERA Policy Benchmark                                                               | 2.8% | 2.8% | 2.8% | 5.4%  | 2.7%   | 5.4%    | 5.8%    |
| Balanced Benchmark                                                                    | 3.3% | 3.3% | 3.3% | 6.0%  | 1.9%   | 5.6%    | 6.0%    |
| <b>SDCERA Public Markets</b>                                                          | 3.5% | 3.5% | 3.5% | 6.8%  | 0.8%   | 5.3%    | 8.0%    |
| Balanced Benchmark                                                                    | 3.3% | 3.3% | 3.3% | 6.0%  | 1.9%   | 5.6%    | 6.0%    |
| <b>Equities</b>                                                                       |      |      |      |       |        |         |         |
| <b>Global Equity</b>                                                                  | 4.3% | 4.3% | 4.3% | 5.9%  | -0.1%  | 6.8%    | 8.1%    |
| MSCI ACWI IMI                                                                         | 4.5% | 4.5% | 4.5% | 5.9%  | -0.2%  | 6.0%    | 6.7%    |
| <b>US Equity</b>                                                                      | 4.0% | 4.0% | 4.0% | 7.5%  | 3.7%   | 9.0%    | 9.7%    |
| MSCI USA IMI                                                                          | 4.0% | 4.0% | 4.0% | 7.5%  | 4.0%   | 10.0%   | 12.3%   |
| <b>Non-US Equity Developed</b>                                                        | 5.1% | 5.1% | 5.1% | 0.7%  | -7.1%  |         |         |
| MSCI EAFE                                                                             | 5.2% | 5.2% | 5.2% | 0.7%  | -6.4%  |         |         |
| <b>Non-US Emerging</b>                                                                | 4.9% | 4.9% | 4.9% | 13.1% | 3.1%   | -0.1%   | -1.3%   |
| MSCI Emerging Markets                                                                 | 4.9% | 4.9% | 4.9% | 10.9% | -0.8%  | -0.1%   | -2.6%   |
| <b>Total Public Markets Equity</b>                                                    | 4.6% | 4.6% | 4.6% | 6.0%  | -1.7%  | 5.6%    | 7.7%    |
| MSCI ACWI IMI                                                                         | 4.5% | 4.5% | 4.5% | 5.9%  | -0.2%  | 6.0%    | 6.7%    |
| <b>Fixed Income</b>                                                                   |      |      |      |       |        |         |         |
| <b>Fixed Income</b>                                                                   | 1.4% | 1.4% | 1.4% | 9.3%  | 6.6%   | 4.8%    | 6.5%    |
| Barclay's US Intermediate Aggregate                                                   | 0.3% | 0.3% | 0.3% | 4.1%  | 4.2%   | 3.3%    | 2.8%    |
| <b>Alternative Beta/Oppportunistic/Other/HF</b>                                       |      |      |      |       |        |         |         |
| <b>Hedgefunds and Relative Value</b>                                                  | 0.8% | 0.8% | 0.8% | -3.8% | -1.0%  | 3.3%    | 3.4%    |
| <b>Managed Futures</b>                                                                | 2.6% | 2.6% | 2.6% | 6.8%  | 3.3%   | 10.1%   | 6.5%    |
| US T-Bills Plus 500 basis points                                                      | 0.4% | 0.4% | 0.4% | 3.0%  | 5.2%   | 5.1%    | 5.1%    |
| <b>Private Assets</b>                                                                 |      |      |      |       |        |         |         |
| <i>The industry standard is to present private asset returns with a quarterly lag</i> |      |      |      |       |        |         |         |
| <b>Real Estate</b>                                                                    | 0.1% | 0.1% | 0.1% | 6.2%  | 14.7%  | 13.3%   |         |
| NCREIF ODCE Plus 50 basis Points                                                      | 0.7% | 0.7% | 0.7% | 4.9%  | 10.8%  | 12.4%   |         |
| <b>Private Equity</b>                                                                 | 0.8% | 0.8% | 0.8% | 5.4%  | 5.4%   | 11.0%   | 11.3%   |
| MSCI ACWI IMI Plus 200 Basis Points                                                   | 4.6% | 4.6% | 4.6% | 7.1%  | 1.8%   | 8.1%    | 8.9%    |
| <b>Private Real Assets</b>                                                            | 0.0% | 0.0% | 0.0% | -2.8% | -3.5%  | 2.9%    | 0.6%    |
| MSCI ACWI IMI Plus 200 Basis Points                                                   | 4.6% | 4.6% | 4.6% | 7.1%  | 1.8%   | 8.1%    | 8.9%    |

Please note: The MSCI EAFE (3 yr & 5 yr) and Real Estate (5 yr) returns are blank because the current composite returns calculated by BNY Mellon do not cover these time periods. The SDCERA Benchmark is before fees and includes an unattainable benchmark index of Global Stocks + 2% for the private market assets and NCREIF ODCE plus 50 basis points for Real Estate.



## Portfolio Risk and Tracking Error

| As of July 31, 2016                            | 5/31/16<br>Trailing three years | 6/30/16<br>Trailing three years | 7/31/16<br>Trailing three years |                       |                   |                       |
|------------------------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------|-------------------|-----------------------|
| <b>Total Trust Fund</b>                        | <b>Volatility</b>               | <b>Tracking Error</b>           | <b>Volatility</b>               | <b>Tracking Error</b> | <b>Volatility</b> | <b>Tracking Error</b> |
| SDCERA Total Trust Fund Assets                 | 5.8%                            | N/A                             | 5.5%                            | N/A                   | 5.5%              | N/A                   |
| SDCERA Policy Benchmark                        | 6.7%                            | 2.0%                            | 6.5%                            | 1.9%                  | 6.6%              | 2.0%                  |
|                                                | <b>Forecasted</b>               | <b>Forecasted</b>               | <b>Forecasted</b>               | <b>Forecasted</b>     | <b>Forecasted</b> | <b>Forecasted</b>     |
| <b>Total Trust Fund</b>                        | <b>Volatility</b>               | <b>Tracking Error</b>           | <b>Volatility</b>               | <b>Tracking Error</b> | <b>Volatility</b> | <b>Tracking Error</b> |
| SDCERA Total Trust Fund Assets                 | 8.8%                            | N/A                             | 8.9%                            | N/A                   | 8.8%              | N/A                   |
| SDCERA Policy Benchmark                        | 8.8%                            | 1.5%                            | 8.7%                            | 1.5%                  | 8.7%              | 1.5%                  |
| Balanced Benchmark                             | 9.7%                            | 1.8%                            | 9.5%                            | 1.7%                  | 9.6%              | 1.9%                  |
| SDCERA Public-Only Assets                      | 8.8%                            | N/A                             | 9.0%                            | N/A                   | 9.0%              | N/A                   |
| SDCERA Public Benchmark                        | 8.1%                            | 1.5%                            | 7.9%                            | 1.7%                  | 8.0%              | 1.7%                  |
| <b>Equities</b>                                |                                 |                                 |                                 |                       |                   |                       |
| Global Equity                                  | 14.3%                           |                                 | 13.8%                           |                       | 13.7%             |                       |
| MSCI ACWI IMI                                  | 13.9%                           | 1.9%                            | 13.7%                           | 1.7%                  | 13.7%             | 1.7%                  |
| US Equity                                      | 13.2%                           |                                 | 12.8%                           |                       | 12.2%             |                       |
| MSCI USA IMI                                   | 13.8%                           | 0.9%                            | 13.6%                           | 1.1%                  | 13.7%             | 1.6%                  |
| Non-US Equity Developed                        | 16.7%                           |                                 | 16.0%                           |                       | 16.1%             |                       |
| MSCI EAFE                                      | 15.9%                           | 1.0%                            | 15.5%                           | 0.7%                  | 15.6%             | 0.7%                  |
| Non-US Emerging                                | 17.1%                           |                                 | 16.8%                           |                       | 16.8%             |                       |
| MSCI Emerging Markets                          | 17.3%                           | 1.1%                            | 17.0%                           | 1.1%                  | 16.9%             | 1.0%                  |
| <b>Fixed Income</b>                            |                                 |                                 |                                 |                       |                   |                       |
| Fixed Income                                   | 3.6%                            |                                 | 4.5%                            |                       | 4.5%              |                       |
| Barclay's US Intermediate Aggregate            | 3.1%                            | 2.0%                            | 3.2%                            | 2.5%                  | 2.9%              | 2.6%                  |
| <b>Alternative Beta/Opportunistic/Other/HF</b> |                                 |                                 |                                 |                       |                   |                       |
| Alternative Beta/Opportunistic/Other/HF        | 7.5%                            |                                 | 5.8%                            |                       | 6.9%              |                       |
| 50% Barclays CTA, 50% HFRI Macro               | 3.8%                            | 6.9%                            | 3.9%                            | 5.6%                  | 3.9%              | 6.5%                  |
| <b>Private Assets</b>                          |                                 |                                 |                                 |                       |                   |                       |
| Real Estate                                    | 9.0%                            |                                 | 9.0%                            |                       | 9.0%              |                       |
| NCREIF ODCE + 50 bps                           | 9.5%                            | 1.4%                            | 9.5%                            | 1.5%                  | 9.4%              | 1.5%                  |
| Private Equity                                 | 16.5%                           |                                 | 16.4%                           |                       | 16.6%             |                       |
| MSCI ACWI IMI + 200 bps                        | 13.9%                           | 8.4%                            | 13.7%                           | 8.4%                  | 13.7%             | 8.6%                  |
| Private Real Assets                            | 16.2%                           |                                 | 15.8%                           |                       | 15.9%             |                       |
| MSCI ACWI IMI + 200 bps                        | 13.9%                           | 8.8%                            | 13.7%                           | 8.5%                  | 13.7%             | 8.6%                  |



### Public Markets Portfolio Changes in July 2016

#### Allocation Changes (millions)

Increase Cantab: \$140  
 Increase PIMCO R2000 Passive Plus: \$30  
 Increase DFA EM Value: \$30  
 Increase Blackrock EM Index: \$30  
 Decrease Cash/Short Term Assets: -\$230  
 Increase Blackrock S&P Index: \$25  
 Decrease Blackrock ACWI Index: -\$25  
 Increase Blackrock US AG: \$300  
 Decrease Blackrock Global Fixed: -\$300

|  | Portfolio % |       | Portfolio \$ millions |         | Summary Comments                                                     |
|--|-------------|-------|-----------------------|---------|----------------------------------------------------------------------|
|  | Begin       | End   | Begin                 | End     |                                                                      |
|  | 1.3%        | 2.5%  | \$133                 | \$277   | Portfolio diversification and maintain market exposure               |
|  | 0.6%        | 0.9%  | \$63                  | \$97    | Portfolio diversification and maintain market exposure               |
|  | 1.3%        | 1.6%  | \$131                 | \$169   | Portfolio diversification and maintain market exposure               |
|  | 2.7%        | 2.9%  | \$274                 | \$318   | Portfolio diversification and maintain market exposure               |
|  | 0.9%        | 1.1%  | \$95                  | \$119   | Decrease to fund portfolios                                          |
|  | 1.6%        | 1.8%  | \$167                 | \$198   | Internal rebalance to maintain guidelines                            |
|  | 6.3%        | 5.3%  | \$644                 | \$574   | Internal rebalance to maintain guidelines                            |
|  | 7.9%        | 10.0% | \$813                 | \$1,087 | Add to US fixed income exposure to increase yield and lower duration |
|  | 5.6%        | 2.6%  | \$575                 | \$279   | Realize capital gains and rebalance to US fixed income               |

### Private Market Portfolio Changes in July 2016

|  | Portfolio % |     | Portfolio \$ millions |     | Summary Comments |
|--|-------------|-----|-----------------------|-----|------------------|
|  | Begin       | End | Begin                 | End |                  |
|  |             |     |                       |     |                  |

## Benchmarks

- The actuarial rate of return represents the long-term return assumption adopted by the Board of Retirement based on the analysis provided by SDCERA's actuary. SDCERA's actuarial rate of return is 7.5 percent.
- The SDCERA Policy benchmark is composed as follows: 45% MSCI ACWI IMI, 24% Barclays US Intermediate Aggregate Index, 8% US T-Bills, 23% SDCERA Private Asset Benchmark.
- The SDCERA Balanced benchmark is composed of 70% MSCI ACWI IMI index and 30% Barclay's U.S. Aggregate index – this is an investable index and represents an alternative to asset allocation and to active managers.
- The Total Public Markets Equity Benchmark is the MSCI ACWI IMI Index.
- The Global Equity Benchmark is the MSCI ACWI IMI Index.
- The US Equity Benchmark is the MSCI USA IMI Stock Market Index.
- The Non-US Equity (Developed) Benchmark is the MSCI EAFE IMI Index.
- The Non-US Equity Emerging Markets Benchmark is the MSCI Emerging Markets IMI Index.
- The Total Fixed Income Benchmark is the Barclay's U.S. Intermediate Aggregate Index and is a broad based benchmark that measures the investment grade, U.S. fixed-rate, and taxable bond market.
- The Alternative Beta/ Opportunistic/Other Benchmark is the T-Bills plus 500 basis points.
- The Total Private Assets Benchmark is composed of 1/3 NCREIF and 2/3 MSCI ACWI IMI index plus 200 basis points.
- The Real Estate Benchmark is the NCREIF ODCE Index plus 50 basis points.
- The Private Equity Benchmark is the MSCI ACWI IMI plus 200 basis points.
- The Private Real Assets Benchmark is the MSCI ACWI IMI plus 200 basis points.

- The MSCI ACWI Investable Market Index (IMI) captures large, mid and small cap representation across 23 Developed Markets (DM) and 23 Emerging Markets (EM) countries.
- The SDCERA Public Markets Risk Benchmark is an aggregate of 58.44% ACWI IMI, 31.77% Barclay's Intermediate Aggregate, 5.19% Barclay's CTA, and 5.19% HFRI Macro.
- The Barclay CTA index is an index of 535 representative commodity-trading advisors.
- The HFRI Macro index is based on investment managers which trade a broad range of strategies predicated on movements in underlying economic variables.

Note: The MSCI and T-Bills benchmarks plus a basis point spread (500, 50, and 200) are not investable indexes. The purpose of having a higher-than-market index benchmark, such as MSCI ACWI plus 200 basis points, is to set the expectation for that asset class. For example, the illiquid nature and lower transparency of Private Equity is matched by an expectation of higher returns than can be realized in public markets.