Verus

# PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

**PERIOD ENDING: JUNE 30, 2019**

Participant Plan Performance Review for

## West Virginia Investment Management Board

| | 6/30/2018 | | 6/30/2019 | | Performance % | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Asset ($000) | % | Asset ($000) | % | 1 Month | 3 Month | FYTD | 1 Year | 3 Year | 5 Year | 10 Year | 20 Year |
| **WVIMB Fund Assets** | **19,506,228** | **100.0** | **19,986,151** | **100.0** | | | | | | | | |
| **Pension Assets** | **15,795,451** | **81.0** | **16,174,170** | **80.9** | | | | | | | | |
| Public Employees' Retirement System | 6,718,698 | 34.5 | 6,895,387 | 34.5 | 4.4 | 3.9 | 6.0 | 6.0 | 10.4 | 7.0 | 10.2 | 6.8 |
| Teachers' Retirement System | 7,691,788 | 39.5 | 7,836,784 | 39.1 | 4.4 | 3.9 | 6.0 | 6.0 | 10.4 | 6.9 | 10.1 | 6.7 |
| EMS Retirement System | 78,921 | 0.4 | 84,650 | 0.4 | 4.4 | 3.9 | 6.0 | 6.0 | 10.4 | 6.9 | 10.1 | |
| Public Safety Retirement System | 682,799 | 3.5 | 689,820 | 3.5 | 4.4 | 3.9 | 5.9 | 5.9 | 10.4 | 6.9 | 10.2 | 6.9 |
| Judges' Retirement System | 204,484 | 1.0 | 212,655 | 1.1 | 4.4 | 3.9 | 6.0 | 6.0 | 10.5 | 7.0 | 10.2 | 6.8 |
| State Police Retirement System | 188,912 | 1.0 | 207,101 | 1.0 | 4.4 | 3.9 | 6.0 | 6.0 | 10.4 | 7.0 | 10.1 | 6.8 |
| Deputy Sheriffs' Retirement System | 219,368 | 1.1 | 232,576 | 1.2 | 4.4 | 3.9 | 6.0 | 6.0 | 10.4 | 6.9 | 10.2 | 6.8 |
| Municipal Police & Firefighter Retirement System | 7,843 | 0.0 | 11,090 | 0.1 | 4.3 | 3.8 | 6.1 | 6.1 | 10.2 | 6.8 | | |
| Municipal Model A | 1,514 | 0.0 | 2,925 | 0.0 | 4.4 | 3.9 | 6.4 | 6.4 | 10.6 | 7.0 | | |
| Municipal Model C | 1,124 | 0.0 | 1,182 | 0.0 | 4.0 | 3.4 | 5.5 | 5.5 | | | | |
| **Insurance Assets** | **2,785,522** | **14.3** | **2,829,801** | **14.2** | | | | | | | | |
| Workers' Compensation Old Fund | 1,185,505 | 6.0 | 1,105,721 | 5.5 | 2.7 | 2.7 | 4.9 | 4.9 | 6.0 | 4.1 | 6.1 | |
| Workers' Comp. Self-Insured Guaranty Risk Pool | 33,908 | 0.2 | 34,207 | 0.2 | 2.7 | 2.6 | 4.7 | 4.7 | 6.3 | 4.1 | 4.6 | |
| Workers' Comp. Self-Insured Security Risk Pool | 53,204 | 0.3 | 52,220 | 0.3 | 2.7 | 2.6 | 4.6 | 4.6 | 6.3 | 4.0 | | |
| Workers' Comp. Uninsured Employers' Fund | 12,881 | 0.1 | 13,468 | 0.1 | 2.6 | 2.5 | 4.4 | 4.4 | 6.1 | 3.9 | 4.3 | |
| Pneumoconiosis | 245,797 | 1.3 | 238,605 | 1.2 | 2.7 | 2.6 | 4.6 | 4.6 | 6.2 | 4.0 | 6.4 | 5.7 |
| Board of Risk & Insurance Management | 151,588 | 0.8 | 158,696 | 0.8 | 2.7 | 2.6 | 4.7 | 4.7 | 6.2 | 4.0 | 6.5 | |
| Public Employees' Insurance Agency | 198,826 | 1.0 | 225,314 | 1.1 | 2.4 | 2.7 | 5.1 | 5.1 | 6.2 | 4.0 | 6.4 | |
| WV Retiree Health Benefit Trust Fund | 903,813 | 4.6 | 1,001,570 | 5.0 | 4.4 | 3.9 | 6.1 | 6.1 | 10.5 | 7.0 | 9.1 | |
| **Endowment Assets** | **925,255** | **4.7** | **982,180** | **4.9** | | | | | | | | |
| Berkeley County Development Authority | 7,742 | 0.0 | 6,177 | 0.0 | 4.4 | 3.9 | 6.0 | 6.0 | 10.4 | | | |
| Wildlife Fund | 63,823 | 0.3 | 65,000 | 0.3 | 4.4 | 3.9 | 6.1 | 6.1 | 10.5 | 7.0 | 10.2 | 7.3 |
| Prepaid Tuition Trust | 42,256 | 0.2 | 34,513 | 0.2 | 1.2 | 2.5 | 6.7 | 6.7 | 7.8 | 5.6 | 8.9 | 6.6 |
| Revenue Shortfall Reserve Fund | 167,666 | 0.9 | 197,342 | 1.0 | 1.2 | 2.9 | 6.3 | 6.3 | 3.1 | 2.4 | 4.8 | |
| Revenue Shortfall Reserve Fund - Part B | 438,711 | 2.3 | 465,189 | 2.4 | 2.4 | 3.0 | 6.0 | 6.0 | 6.0 | 4.1 | 6.7 | |
| WV DEP Trust | 9,658 | 0.0 | 9,258 | 0.0 | 4.5 | 2.8 | 3.6 | 3.6 | 9.2 | 5.4 | | |
| WV DEP Agency | 195,399 | 1.0 | 204,701 | 1.0 | 3.3 | 2.8 | 4.8 | 4.8 | 7.3 | 4.6 | | |

| | Asset ($000) | % | Performance % 1 Month | 3 Month | FYTD | 1 Year | 3 Year | 5 Year | 10 Year | 20 Year |
|---|---|---|---|---|---|---|---|---|---|---|
| Investment Pools Composite | 19,995,157 | 100.00 | | | | | | | | |
| Total Equity Composite | 9,370,418 | 46.87 | 6.39 | 3.24 | 3.12 | 3.12 | 11.71 | 6.41 | 11.71 | 6.65 |
| *+/- Total Equity Base Index (b)* | | | *(0.20)* | *(0.56)* | *(2.11)* | *(2.11)* | *(0.33)* | *(0.13)* | *0.78* | *0.88* |
| Domestic Equity Composite | 4,590,729 | 22.96 | 6.93 | 4.24 | 7.52 | 7.52 | 13.43 | 9.79 | 14.72 | 7.22 |
| *+/- Russell 3000 Index* | | | *(0.09)* | *0.14* | *(1.46)* | *(1.46)* | *(0.59)* | *(0.40)* | *0.05* | *0.92* |
| International Equity Composite | 4,779,689 | 23.91 | 5.88 | 2.27 | (1.04) | (1.04) | 9.91 | 2.97 | 8.55 | 6.85 |
| *+/- MSCI AC World ex US IMI Index (c)* | | | *0.03* | *(0.71)* | *(1.79)* | *(1.79)* | *0.24* | *0.25* | *1.47* | *1.86* |
| Fixed Income Composite | 3,189,436 | 15.95 | 1.54 | 2.98 | 7.71 | 7.71 | 4.25 | 3.55 | 5.29 | 5.59 |
| *+/- Bloomberg Barclays Capital Universal (d)* | | | *0.13* | *(0.13)* | *(0.36)* | *(0.36)* | *1.41* | *0.37* | *0.92* | *0.46* |
| Core Fixed Income Composite | 968,551 | 4.84 | 1.19 | 3.20 | 8.29 | 8.29 | 2.68 | 3.38 | 4.56 | |
| *+/- Bloomberg Barclays Capital Aggregate* | | | *(0.07)* | *0.12* | *0.42* | *0.42* | *0.37* | *0.43* | *0.66* | |
| Total Return Fixed Income Composite *(k)* | 2,220,885 | 11.11 | 1.69 | 2.89 | 7.46 | 7.46 | 4.94 | 3.61 | 5.59 | 6.05 |
| *+/- Bloomberg Barclays Capital Universal* | | | *0.28* | *(0.22)* | *(0.61)* | *(0.61)* | *2.10* | *0.43* | *1.22* | *0.86* |
| TIPS Composite | 403,344 | 2.02 | 0.86 | 2.87 | 4.90 | 4.90 | 2.12 | 1.76 | | |
| *+/- Bloomberg Barclays Capital U.S.TIPS* | | | *0.00* | *0.00* | *0.06* | *0.06* | *0.04* | *0.01* | | |
| Cash Composite | 186,066 | 0.93 | 0.18 | 0.59 | 2.23 | 2.23 | 1.35 | 0.87 | 0.50 | 1.93 |
| *+/- Citigroup 90 Day T-Bill (e)* | | | *(0.02)* | *(0.02)* | *(0.06)* | *(0.06)* | *(0.01)* | *0.03* | *(0.04)* | *(0.02)* |
| Private Equity Composite | 1,936,083 | 9.68 | 6.07 | 12.37 | 20.85 | 20.85 | 20.60 | 16.61 | 16.20 | |
| *+/- Russell 3000 + 3% (f, g)* | | | | | | | | *3.42* | *(2.10)* | |
| Real Estate Composite | 1,936,163 | 9.68 | 1.70 | 2.85 | 7.30 | 7.30 | 8.35 | 9.31 | 9.50 | |
| *+/- NCREIF + 1% (f)* | | | | | | | | *(0.81)* | *0.00* | |
| Hedge Fund Composite | 2,372,261 | 11.86 | 1.05 | 1.72 | 2.58 | 2.58 | 4.90 | 3.13 | 5.22 | |
| *+/- HFRI FOF + 1% (h)* | | | *(0.60)* | *(0.03)* | *0.42* | *0.42* | *(0.35)* | *(0.06)* | *1.42* | |
| Opportunistic Income Composite | 601,386 | 3.01 | 1.86 | 4.52 | 7.50 | 7.50 | 5.77 | | | |
| *+/- CS Leveraged Loan + 2% (l)* | | | *1.47* | *2.44* | *1.35* | *1.35* | *(1.78)* | | | |

| | Equity | | Fixed Income | | Private Equity | | Real Estate | | Hedge Funds | | Opportunistic Income | | Cash | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Actual % | Strategy % | Actual % | Strategy % | Actual % | Strategy % | Actual % | Strategy % | Actual % | Strategy % | Actual % | Strategy % | Actual % | Strategy % |
| **Pension Assets** | | | | | | | | | | | | | | |
| Public Employees' Retirement System | 50.3 | 55.0 | 12.0 | 15.0 | 11.3 | 10.0 | 11.3 | 10.0 | 11.4 | 10.0 | 3.5 | 0.0 | 0.2 | 0.0 |
| Teachers' Retirement System | 49.9 | 55.0 | 11.7 | 15.0 | 11.2 | 10.0 | 11.2 | 10.0 | 11.4 | 10.0 | 3.5 | 0.0 | 1.1 | 0.0 |
| EMS Retirement System | 50.2 | 55.0 | 12.6 | 15.0 | 11.0 | 10.0 | 11.0 | 10.0 | 11.4 | 10.0 | 3.4 | 0.0 | 0.4 | 0.0 |
| Public Safety Retirement System | 49.1 | 55.0 | 11.3 | 15.0 | 11.3 | 10.0 | 11.3 | 10.0 | 11.2 | 10.0 | 3.5 | 0.0 | 2.3 | 0.0 |
| Judges' Retirement System | 50.3 | 55.0 | 12.2 | 15.0 | 11.2 | 10.0 | 11.2 | 10.0 | 11.4 | 10.0 | 3.5 | 0.0 | 0.2 | 0.0 |
| State Police Retirement System | 50.3 | 55.0 | 12.6 | 15.0 | 10.9 | 10.0 | 10.9 | 10.0 | 11.4 | 10.0 | 3.4 | 0.0 | 0.5 | 0.0 |
| Deputy Sheriffs' Retirement System | 50.4 | 55.0 | 12.4 | 15.0 | 11.1 | 10.0 | 11.1 | 10.0 | 11.4 | 10.0 | 3.4 | 0.0 | 0.2 | 0.0 |
| Municipal Police & Firefighter Retirement System | 48.3 | 55.0 | 12.7 | 15.0 | 10.3 | 10.0 | 10.3 | 10.0 | 10.9 | 10.0 | 3.2 | 0.0 | 4.3 | 0.0 |
| Municipal Model A | 50.5 | 55.0 | 12.2 | 15.0 | 10.9 | 10.0 | 10.9 | 10.0 | 11.4 | 10.0 | 3.4 | 0.0 | 0.7 | 0.0 |
| Municipal Model C | 47.6 | 50.0 | 26.8 | 30.0 | 5.4 | 5.0 | 5.4 | 5.0 | 11.5 | 10.0 | 1.7 | 0.0 | 1.6 | 0.0 |
| **Insurance Assets** | | | | | | | | | | | | | | |
| Workers' Compensation Old Fund | 30.0 | 30.0 | 49.1 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 17.4 | 15.0 | 0.0 | 0.0 | 3.5 | 5.0 |
| Workers' Comp. Self-Insured Guaranty Risk Pool | 29.7 | 30.0 | 42.7 | 45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.1 | 20.0 | 0.0 | 0.0 | 4.5 | 5.0 |
| Workers' Comp. Self-Insured Security Risk Pool | 29.9 | 30.0 | 42.8 | 45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.3 | 20.0 | 0.0 | 0.0 | 4.0 | 5.0 |
| Workers' Comp. Uninsured Employers Fund | 29.8 | 30.0 | 37.5 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.2 | 20.0 | 0.0 | 0.0 | 9.5 | 10.0 |
| Pneumoconiosis | 29.8 | 30.0 | 42.8 | 45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.2 | 20.0 | 0.0 | 0.0 | 4.2 | 5.0 |
| Board of Risk & Insurance Mgmt. | 29.6 | 30.0 | 42.5 | 45.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.9 | 20.0 | 0.0 | 0.0 | 5.0 | 5.0 |
| Public Employees' Insurance Agency | 24.4 | 25.0 | 52.7 | 55.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.9 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WV Retiree Health Benefit Trust Fund | 50.5 | 55.0 | 12.7 | 15.0 | 11.0 | 10.0 | 11.0 | 10.0 | 11.4 | 10.0 | 3.4 | 0.0 | 0.0 | 0.0 |
| **Endowment Assets** | | | | | | | | | | | | | | |
| Berkeley County Development Authority | 50.6 | 55.0 | 12.7 | 15.0 | 10.9 | 10.0 | 10.9 | 10.0 | 11.5 | 10.0 | 3.4 | 0.0 | 0.0 | 0.0 |
| Wildlife Fund | 50.3 | 55.0 | 12.6 | 15.0 | 11.1 | 10.0 | 11.1 | 10.0 | 11.4 | 10.0 | 3.4 | 0.0 | 0.1 | 0.0 |
| Prepaid Tuition Trust | 0.0 | 0.0 | 80.4 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 19.6 | 20.0 |
| Revenue Shortfall Reserve Fund | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Revenue Shortfall Reserve Fund - Part B | 22.1 | 22.5 | 77.9 | 77.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WV DEP Trust | 64.6 | 65.0 | 12.3 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.1 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| WV DEP Agency | 39.6 | 40.0 | 37.4 | 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23.0 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(a) As of January 2019, the PERS Base is 60% MSCI ACWI Gross and 40% Bloomberg Barclays Capital Universal. From January 2014 to December 2018, the PERS Base was 30% Russell 3000, 30% MSCI ACWI ex USA (IMI), and 40% Bloomberg Barclays Capital Universal. From April 2008 to December 2013, the PERS Base was 30% Russell 3000, 30% MSCI ACWI ex USA (Standard), and 40% Bloomberg Barclays Capital Universal. Prior periods were 42% Russell 3000, 18% MSCI ACWI ex USA, and 40% Bloomberg Barclays Capital Aggregate.

(b) As of January 2019, the Total Equity Base Index is 100% MSCI ACWI Gross. From January 2014 to December 2018, the Total Equity Base Index was 50% Russell 3000 and 50% MSCI ACWI ex USA (IMI). From April 2008 to December 2013, the Total Equity Base Index was 50% Russell 3000 and 50% MSCI ACWI ex USA (Standard). Prior periods were 40% S&P 500, 30% Russell 2500, and 30% MSCI ACWI ex USA.

(c) Prior to January 2014, the index was the MSCI ACW ex USA (Standard).

(d) Prior to April 2008, the index was Bloomberg Barclays Capital Aggregate.

(e) Prior to January 2014, the index was Citigroup 90 Day T-Bill plus 15 basis points.

(f) The Private Equity Composite and Real Estate Composite are long-term programs whose benchmarks are only reported for 5 years and beyond.

(g) Prior to January 2014, the index was S&P 500 plus 500 basis points.

(h) Prior to January 2014, the index was Libor plus 400 basis points.

(i) Franklin Benchmark is 50% JPM EMBI Global Diversified and 50% JPM GBI EM Diversified.

(j) Prior to April 2008, the index was a custom index.

(k) From October 2015 to March 2017, performance returns from the Opportunistic Income Pool were included in the Total Return Fixed Income Composite.

(l) Prior to April 2017, the index was CS Leveraged Loan plus 250 basis points.

Note: Participant returns are net of fees. Portfolio returns are net of management fees. Returns shorter than one year are unannualized.

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