



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2022

Participant Plan Performance Review for

West Virginia Investment Management Board

Participant Plans Allocation & Performance Net of Fees

Period Ending: June 30, 2022

	6/30/2021		6/30/2022		Performance %							
	Asset (\$000)	%	Asset (\$000)	%	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
WVIMB Fund Assets	25,345,298	100.0	22,991,842	100.0								
Pension Assets	20,619,195	81.3	18,829,116	81.9								
Public Employees' Retirement System	8,807,095	34.7	8,004,835	34.8	(4.8)	(7.8)	(6.4)	(6.4)	8.5	8.2	9.1	7.9
Teachers' Retirement System	9,886,658	39.0	8,980,424	39.1	(4.8)	(7.8)	(6.3)	(6.3)	8.5	8.2	9.0	7.7
EMS Retirement System	118,769	0.5	112,407	0.5	(4.8)	(7.8)	(6.4)	(6.4)	8.5	8.2	9.0	
Public Safety Retirement System	851,520	3.4	767,508	3.3	(4.8)	(7.8)	(6.3)	(6.3)	8.5	8.2	9.1	7.9
Judges' Retirement System	280,670	1.1	259,323	1.1	(4.8)	(7.8)	(6.4)	(6.4)	8.5	8.2	9.1	7.9
State Police Retirement System	301,156	1.2	289,417	1.3	(4.8)	(7.8)	(6.4)	(6.4)	8.5	8.2	9.1	7.9
Deputy Sheriffs' Retirement System	314,633	1.2	293,315	1.3	(4.8)	(7.8)	(6.4)	(6.4)	8.5	8.2	9.1	7.9
Municipal Police & Firefighter Retirement System	23,816	0.1	26,796	0.1	(4.7)	(7.7)	(6.3)	(6.3)	8.4	8.1	8.8	
Natural Resources Police Office Retirement System	25,063	0.1	24,467	0.1	(4.8)	(7.8)	(6.4)	(6.4)				
Municipal Model A (I)	7,477	0.0	68,337	0.3	(4.8)	(7.8)	(6.0)	(6.0)	8.7	8.5		
Municipal Model B (I)	2,338	0.0	2,287	0.0	(5.5)	(10.2)	(13.0)	(13.0)	3.9			
Insurance Assets	3,524,704	14.0	3,007,901	13.1								
Workers' Compensation Old Fund	1,086,608	4.3	881,990	3.8	(4.0)	(7.4)	(9.6)	(9.6)	3.4	4.0	4.5	
Workers' Comp. Self-Insured Guaranty Risk Pool	39,772	0.2	35,691	0.1	(3.8)	(7.0)	(8.9)	(8.9)	3.8	4.2	4.8	
Workers' Comp. Self-Insured Security Risk Pool	56,201	0.2	48,590	0.2	(3.8)	(7.0)	(8.9)	(8.9)	3.8	4.2		
Workers' Comp. Uninsured Employers' Fund	16,909	0.1	15,559	0.1	(3.8)	(7.0)	(8.9)	(8.9)	3.6	4.1	4.6	
Pneumoconiosis	247,663	1.0	207,487	0.9	(3.8)	(7.0)	(8.9)	(8.9)	3.8	4.2	4.8	5.3
Board of Risk & Insurance Management	194,839	0.8	175,463	0.8	(3.8)	(7.0)	(8.9)	(8.9)	3.8	4.2	4.8	
Public Employees' Insurance Agency	270,948	1.1	134,812	0.6	(3.7)	(6.9)	(9.0)	(9.0)	3.2	3.9	4.6	
WV Retiree Health Benefit Trust Fund	1,611,764	6.3	1,508,309	6.6	(4.8)	(7.8)	(6.4)	(6.4)	8.5	8.2	8.9	
Endowment Assets	1,201,399	4.7	1,154,825	5.0								
Berkeley County Development Authority	8,428	0.0	7,886	0.0	(4.8)	(7.8)	(6.4)	(6.4)	8.5	8.2		
Wildlife Fund	78,281	0.3	73,641	0.3	(4.8)	(7.8)	(6.4)	(6.4)	8.4	8.2	9.0	7.9
WV State Parks and Recreation Endowment Fund	6,465	0.0	14,770	0.1	(4.6)	(7.5)	(6.5)	(6.5)				
Revenue Shortfall Reserve Fund	293,538	1.2	329,802	1.4	(2.6)	(5.3)	(8.0)	(8.0)	(0.2)	1.3	1.5	
Revenue Shortfall Reserve Fund - Part B	557,458	2.2	498,719	2.2	(3.7)	(7.3)	(10.5)	(10.5)	2.3	3.2	4.1	
WV DEP Trust	11,837	0.0	10,357	0.0	(6.0)	(10.8)	(11.8)	(11.8)	5.7	5.8	7.5	
WV DEP Agency	245,392	1.0	219,650	1.0	(4.4)	(8.2)	(10.5)	(10.5)	4.0	4.5		

Composite Asset Allocation & Performance Net of Fees

Period Ending: June 30, 2022

	Asset (\$000)	%	Performance %								
			1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year	
Investment Pools Composite	23,001,986	100.00									
Portable Alpha Composite +/- S&P 500 Index	4,750,876	20.65	(8.78) (0.53)	(16.40) (0.30)	(10.86) (0.24)	(10.86) (0.24)					
Large Cap Domestic Equity Composite +/- S&P 500 Index	308,837	1.34	(8.25) 0.00	(16.09) 0.01	(10.69) (0.07)	(10.69) (0.07)	10.58 (0.02)	11.06 (0.25)	12.86 (0.10)	9.05 (0.03)	
Non-Large Cap Domestic Equity Composite +/- Russell 2500 Index	855,561	3.72	(11.22) (1.67)	(20.81) (3.83)	(20.51) 0.49	(20.51) 0.49	5.55 (0.36)	6.76 (0.28)	10.15 (0.34)	9.02 (0.22)	
International Equity Composite +/- MSCI AC World ex US IMI Index (b)	4,167,056	18.12	(8.06) 0.85	(12.75) 1.35	(19.23) 0.23	(19.23) 0.23	3.29 1.29	3.08 0.11	6.53 1.10	7.16 0.85	
Fixed Income Composite +/- Bloomberg Universal (c)	3,946,142	17.16	(2.01) (0.01)	(4.44) 0.69	(10.63) 0.26	(10.63) 0.26	(0.10) 0.84	1.56 0.62	2.57 0.74	4.31 0.55	
Core Fixed Income Composite +/- Bloomberg US Aggregate	1,189,220	5.17	(1.31) 0.26	(4.29) 0.40	(9.32) 0.97	(9.32) 0.97	0.04 0.97	1.61 0.73	2.18 0.64		
Total Return Fixed Income Composite (j) +/- Bloomberg Universal	2,756,922	11.99	(2.31) (0.31)	(4.51) 0.62	(11.19) (0.30)	(11.19) (0.30)	(0.20) 0.74	1.51 0.57	2.76 0.93	4.69 0.82	
TIPS Composite +/- Bloomberg US TIPS	440,765	1.92	(3.17) (0.01)	(6.09) (0.01)	(5.14) 0.00	(5.14) 0.00	3.12 0.08	3.29 0.08	1.76 0.03		
Cash Composite +/- FTSE 3 Month US T-Bill (d)	145,429	0.63	0.07 0.00	0.12 (0.02)	0.15 (0.04)	0.15 (0.04)	0.50 (0.11)	1.01 (0.08)	0.62 (0.02)	1.29 (0.04)	
Private Equity Composite +/- Russell 3000 + 3% (e, f)	2,801,844	12.18	(3.57) 4.55	(1.71) 14.25	8.59 19.46	8.59 19.46	26.48 13.71	24.28 10.68	18.96 3.25		
Real Estate Composite +/- NCREIF + 1% (e)	2,431,968	10.57	2.56 0.73	5.58 0.00	16.39 (6.49)	16.39 (6.49)	9.13 (1.48)	8.81 (0.74)	9.52 (1.09)		
Hedge Fund Composite +/- HFRI FOF + 1% (g)	2,296,584	9.98	(1.07) 0.16	(0.90) 2.78	1.64 6.13	1.64 6.13	6.41 1.47	5.64 1.02	5.39 1.42		
Private Credit & Income Composite +/- CS Leveraged Loan + 2% (e, k)	856,925	3.73	0.41 2.30	3.63 7.49	7.29 7.97	7.29 7.97	7.05 3.02	6.72 1.75			

Participant Plans Allocation vs. Strategy

Period Ending: June 30, 2022

	Equity		Fixed Income		Private Equity		Real Estate		Private Credit & Income		Hedge Funds		Cash	
	Actual %	Strategy %	Actual %	Strategy %	Actual %	Strategy %	Actual %	Strategy %	Actual %	Strategy %	Actual %	Strategy %	Actual %	Strategy %

Pension Assets

Public Employees' Retirement System	46.5	50.0	13.6	15.0	13.8	10.0	12.0	10.0	4.2	5.0	9.8	10.0	0.1	0.0
Teachers' Retirement System	46.0	50.0	13.5	15.0	13.6	10.0	11.8	10.0	4.2	5.0	9.7	10.0	1.2	0.0
EMS Retirement System	46.2	50.0	13.8	15.0	13.7	10.0	11.9	10.0	4.2	5.0	9.8	10.0	0.4	0.0
Public Safety Retirement System	46.1	50.0	14.0	15.0	13.8	10.0	12.0	10.0	4.2	5.0	9.8	10.0	0.1	0.0
Judges' Retirement System	46.4	50.0	13.7	15.0	13.7	10.0	11.9	10.0	4.2	5.0	9.8	10.0	0.3	0.0
State Police Retirement System	46.1	50.0	14.0	15.0	13.7	10.0	11.9	10.0	4.2	5.0	9.7	10.0	0.4	0.0
Deputy Sheriffs' Retirement System	46.3	50.0	13.8	15.0	13.7	10.0	11.9	10.0	4.2	5.0	9.8	10.0	0.3	0.0
Municipal Police & Firefighter Retirement System	44.9	50.0	14.3	15.0	13.5	10.0	11.7	10.0	4.1	5.0	9.6	10.0	1.9	0.0
Natural Resources Police Office Retirement System	45.9	50.0	13.9	15.0	13.6	10.0	11.8	10.0	4.2	5.0	9.7	10.0	0.9	0.0
Municipal Model A	45.8	50.0	13.7	15.0	13.6	10.0	11.8	10.0	4.2	5.0	9.7	10.0	1.2	0.0
Municipal Model B	51.9	55.0	44.0	45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0

Insurance Assets

Workers' Compensation Old Fund	29.7	30.0	54.6	50.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9	15.0	0.8	5.0
Workers' Comp. Self-Insured Guaranty Risk Pool	28.3	30.0	47.0	45.0	0.0	0.0	0.0	0.0	0.0	0.0	19.6	20.0	5.1	5.0
Workers' Comp. Self-Insured Security Risk Pool	28.5	30.0	47.2	45.0	0.0	0.0	0.0	0.0	0.0	0.0	19.7	20.0	4.6	5.0
Workers' Comp. Uninsured Employers Fund	28.3	30.0	47.1	45.0	0.0	0.0	0.0	0.0	0.0	0.0	19.6	20.0	5.0	5.0
Pneumoconiosis	28.5	30.0	47.2	45.0	0.0	0.0	0.0	0.0	0.0	0.0	19.7	20.0	4.6	5.0
Board of Risk & Insurance Mgmt.	28.6	30.0	47.5	45.0	0.0	0.0	0.0	0.0	0.0	0.0	19.8	20.0	4.1	5.0
Public Employees' Insurance Agency	25.2	25.0	51.0	55.0	0.0	0.0	0.0	0.0	0.0	0.0	23.8	20.0	0.0	0.0
WV Retiree Health Benefit Trust Fund	46.2	50.0	14.2	15.0	13.7	10.0	11.9	10.0	4.2	5.0	9.8	10.0	0.0	0.0

Endowment Assets

Berkeley County Development Authority	46.1	50.0	14.2	15.0	13.8	10.0	11.9	10.0	4.2	5.0	9.8	10.0	0.0	0.0
Wildlife Fund	46.2	50.0	14.1	15.0	13.7	10.0	11.9	10.0	4.2	5.0	9.8	10.0	0.1	0.0
WV State Parks and Recreation Endowment Fund	42.7	50.0	13.6	15.0	12.8	10.0	11.1	10.0	3.9	5.0	9.1	10.0	6.8	0.0
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	21.2	22.5	78.8	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	63.2	65.0	16.8	15.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	0.0
WV DEP Agency	38.1	40.0	42.2	40.0	0.0	0.0	0.0	0.0	0.0	0.0	19.7	20.0	0.0	0.0

- (a) As of January 2019, the PERS Base is 60% MSCI ACWI Gross and 40% Bloomberg Universal. From January 2014 to December 2018, the PERS Base was 30% Russell 3000, 30% MSCI ACWI ex USA (IMI), and 40% Bloomberg Universal. From April 2008 to December 2013, the PERS Base was 30% Russell 3000, 30% MSCI ACWI ex USA (Standard), and 40% Bloomberg Universal. Prior periods were 42% Russell 3000, 18% MSCI ACWI ex USA, and 40% Bloomberg US Aggregate.
- (b) Prior to January 2014, the index was the MSCI ACW ex USA (Standard).
- (c) Prior to April 2008, the index was Bloomberg US Aggregate.
- (d) Prior to January 2014, the index was FTSE 3 Month US T-Bill plus 15 basis points.
- (e) Private Equity, Real Estate, and Private Credit & Income consist primarily of private market investments. The time lag in determining the fair value of these investments makes the comparison to their public market benchmarks less meaningful over shorter time periods.
- (f) Prior to January 2014, the index was S&P 500 plus 500 basis points.
- (g) Prior to January 2014, the index was Libor plus 400 basis points.
- (h) As of July 2019, the Franklin Benchmark is 50% JPM EMBI Global Diversified ex GCC and 50% JPM GBI EM Diversified. Prior periods were 50% JPM EMBI Global Diversified and 50% JPM GBI EM Diversified.
- (i) Prior to April 2008, the index was a custom index.
- (j) From October 2015 to March 2017, performance returns from the Opportunistic Income Pool were included in the Total Return Fixed Income Composite.
- (k) Prior to April 2017, the index was CS Leveraged Loan plus 250 basis points.
- (l) In July 2020 the municipal plan potential investment models were condensed to Model A and Model B. The June 30, 2020 asset values for Model C and Model D are included in Model A. Model B was formerly Model F.
- (m) From January 2021 to August 2021, the index was S&P 500 Index 2.2x minus 3 Month Libor minus 15 basis points. Prior to January 2021, the index was S&P 500 Index 2.5x minus 3 Month Libor minus 15 basis points.

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

Disclaimer

This report contains confidential and proprietary information and is subject to the terms and conditions of the Consulting Agreement. It is being provided for use solely by the customer. The report may not be sold or otherwise provided, in whole or in part, to any other person or entity without written permission from Verus Advisory, Inc., (hereinafter Verus) or as required by law or any regulatory authority. The information presented does not constitute a recommendation by Verus and cannot be used for advertising or sales promotion purposes. This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities or any other financial instruments or products.

The information presented has been prepared using data from third party sources that Verus believes to be reliable. While Verus exercised reasonable professional care in preparing the report, it cannot guarantee the accuracy of the information provided by third party sources. Therefore, Verus makes no representations or warranties as to the accuracy of the information presented. Verus takes no responsibility or liability (including damages) for any error, omission, or inaccuracy in the data supplied by any third party. Nothing contained herein is, or should be relied on as a promise, representation, or guarantee as to future performance or a particular outcome. Even with portfolio diversification, asset allocation, and a long-term approach, investing involves risk of loss that the investor should be prepared to bear.

The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

Verus will make every reasonable effort to obtain and include accurate market values. However, if managers or custodians are unable to provide the reporting period's market values prior to the report issuance, Verus may use the last reported market value or make estimates based on the manager's stated or estimated returns and other information available at the time. These estimates may differ materially from the actual value. Hedge fund market values presented in this report are provided by the fund manager or custodian. Market values presented for private equity investments reflect the last reported NAV by the custodian or manager net of capital calls and distributions as of the end of the reporting period. These values are estimates and may differ materially from the investments actual value. Private equity managers report performance using an internal rate of return (IRR), which differs from the time-weighted rate of return (TWRR) calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.