PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: JUNE 30, 2017

Participant Plan Performance Review for

West Virginia Investment Management Board

	6/30/2016		6/30/2017		Performance %						
	Asset ($000)	%	Asset ($000)	%	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year
WVIMB Fund Assets	**16,747,244**	**100.0**	**18,341,428**	**100.0**							
Pension Assets	**13,230,134**	**79.0**	**14,846,407**	**80.9**							
Public Employees' Retirement System	5,597,558	33.4	6,311,880	34.4	1.0	4.2	15.8	15.8	6.4	9.9	6.0
Teachers' Retirement System	6,513,312	38.9	7,259,593	39.6	1.0	4.2	15.7	15.7	6.3	9.9	5.7
EMS Retirement System	58,844	0.4	70,455	0.4	1.0	4.2	15.8	15.8	6.4	9.9	
Public Safety Retirement System	578,762	3.5	641,748	3.5	1.0	4.2	15.8	15.8	6.4	9.9	6.0
Judges' Retirement System	167,178	1.0	189,956	1.0	1.0	4.2	15.9	15.9	6.4	9.9	6.0
State Police Retirement System	138,127	0.8	166,483	0.9	1.0	4.2	15.8	15.8	6.4	9.9	6.0
Deputy Sheriffs' Retirement System	171,949	1.0	199,466	1.1	1.0	4.2	15.8	15.8	6.4	9.9	6.0
Municipal Police & Firefighter Retirement System	3,080	0.0	5,375	0.0	1.0	4.2	15.5	15.5	6.2	9.4	
Municipal Model A	1,324	0.0	1,451	0.0	1.0	4.3	15.8	15.8	6.3		
Insurance Assets	**2,545,860**	**15.2**	**2,644,524**	**14.5**							
Workers' Compensation Old Fund	1,284,843	7.7	1,260,911	6.9	0.2	2.3	8.5	8.5	3.6	4.9	4.0
Workers' Comp. Self-Insured Guaranty Risk Pool	33,418	0.2	33,211	0.2	0.2	2.2	9.1	9.1	3.5	5.4	4.1
Workers' Comp. Self-Insured Security Risk Pool	53,881	0.3	53,908	0.3	0.2	2.2	9.2	9.2	3.5		
Workers' Comp. Uninsured Employers' Fund	10,841	0.1	11,797	0.1	0.2	2.1	8.8	8.8	3.3	5.2	3.9
Pneumoconiosis	246,635	1.5	250,631	1.4	0.2	2.2	9.1	9.1	3.5	5.4	4.6
Board of Risk & Insurance Management	132,322	0.8	144,341	0.8	0.2	2.2	9.1	9.1	3.4	5.4	5.1
Public Employees' Insurance Agency	176,829	1.0	153,908	0.8	0.1	2.0	8.8	8.8	3.5	5.3	4.8
WV Retiree Health Benefit Trust Fund	607,091	3.6	735,817	4.0	1.0	4.2	15.8	15.8	6.4	9.7	
Endowment Assets	**971,250**	**5.8**	**850,497**	**4.6**							
Berkeley County Development Authority	6,089	0.0	7,057	0.0	1.0	4.2	15.9	15.9			
Wildlife Fund	54,571	0.3	63,883	0.3	1.0	4.2	15.9	15.9	6.4	9.9	6.0
Prepaid Tuition Trust	54,948	0.3	49,025	0.3	0.5	3.2	12.0	12.0	5.6	7.9	5.5
Revenue Shortfall Reserve Fund	336,013	2.0	145,150	0.8	(0.2)	0.7	1.8	1.8	1.6	1.8	1.4
Revenue Shortfall Reserve Fund - Part B	390,670	2.4	425,111	2.4	0.3	2.6	8.8	8.8	3.7	5.0	3.0
WV DEP Trust	7,808	0.1	9,044	0.0	0.4	3.4	15.8	15.8	5.1	9.1	
WV DEP Agency	121,151	0.7	151,227	0.8	0.4	2.8	11.5	11.5	4.2		

	Asset ($000)	%	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year
			Performance %						
Investment Pools Composite	18,350,958	100.00							
Total Equity Composite	9,077,582	49.48	0.64	4.70	22.04	22.04	6.11	12.45	5.52
+/- Total Equity Policy Index (b)			*0.01*	*0.17*	*2.21*	*2.21*	*0.75*	*1.15*	*1.23*
US Equity Composite	4,267,660	23.27	0.66	3.30	18.03	18.03	8.87	14.61	7.27
+/- Russell 3000 Index			*(0.24)*	*0.28*	*(0.48)*	*(0.48)*	*(0.23)*	*0.03*	*0.01*
Large Cap Composite	3,546,893	19.34	0.39	3.67	17.06	17.06	9.76	14.69	7.35
+/- S&P 500 Index			*(0.23)*	*0.58*	*(0.84)*	*(0.84)*	*0.15*	*0.06*	*0.17*
Non-Large Cap Composite	720,767	3.93	1.98	1.50	22.06	22.06	5.30	13.65	7.28
+/- Russell 2500 Index			*(0.52)*	*(0.63)*	*2.22*	*2.22*	*(1.63)*	*(0.39)*	*(0.14)*
International Equity Composite	4,809,922	26.21	0.62	5.94	25.73	25.73	3.11	10.09	3.59
+/- MSCI AC World ex US IMI Index (c)			*0.25*	*(0.11)*	*4.76*	*4.76*	*1.52*	*2.14*	*1.89*
Fixed Income Composite	3,328,279	18.13	0.49	2.20	4.56	4.56	3.19	3.60	4.72
+/- Bloomberg Barclays Capital Universal (d)			*0.58*	*0.68*	*3.65*	*3.65*	*0.43*	*0.87*	*(0.12)*
Core Fixed Income Composite	998,981	5.44	(0.08)	1.53	0.09	0.09	2.96	2.76	
+/- Bloomberg Barclays Capital Aggregate			*0.02*	*0.08*	*0.40*	*0.40*	*0.48*	*0.55*	
Total Return Fixed Income Composite *(k)*	2,329,298	12.69	0.74	2.49	6.58	6.58	3.26	4.02	5.02
+/- Bloomberg Barclays Capital Universal			*0.83*	*0.97*	*5.67*	*5.67*	*0.50*	*1.29*	*0.29*
TIPS Composite	328,221	1.79	(0.94)	(0.42)	(0.63)	(0.63)	0.60	0.26	
+/- Bloomberg Barclays Capital U.S.TIPS			*0.01*	*(0.02)*	*0.00*	*0.00*	*(0.03)*	*(0.01)*	
Cash Composite	218,066	1.19	0.07	0.19	0.50	0.50	0.28	0.23	0.67
+/- Citigroup 90 Day T-Bill (e)			*0.00*	*0.01*	*0.04*	*0.04*	*0.08*	*0.04*	*0.01*
Private Equity Composite	1,627,252	8.86	3.87	9.25	19.68	19.68	13.73	13.86	
+/- Russell 3000 + 3% (f, g)								*(4.00)*	
Real Estate Composite	1,641,127	8.94	2.31	4.34	8.39	8.39	9.96	10.23	
+/- NCREIF + 1% (f)								*(1.46)*	
Hedge Fund Composite	1,825,908	9.95	(0.39)	0.02	5.74	5.74	2.24	5.15	
+/- HFRI FOF + 1% (h)			*(0.44)*	*(1.03)*	*(1.74)*	*(1.74)*	*(0.31)*	*1.82*	
Opportunistic Income Composite	304,523	1.66	1.68	2.68	4.85	4.85			
+/- CS Leveraged Loan + 2.5%			*1.54*	*1.31*	*(5.14)*	*(5.14)*			

	Domestic Equity		Int'l 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 %	Actual %	Strategy %
Pension Assets																
Public Employees' Retirement System	25.0	27.5	28.2	27.5	14.2	15.0	10.5	10.0	10.4	10.0	9.5	10.0	2.0	0.0	0.2	0.0
Teachers' Retirement System	24.5	27.5	27.8	27.5	13.8	15.0	10.3	10.0	10.6	10.0	9.5	10.0	1.9	0.0	1.6	0.0
EMS Retirement System	25.3	27.5	28.1	27.5	14.6	15.0	10.4	10.0	10.0	10.0	9.2	10.0	1.9	0.0	0.5	0.0
Public Safety Retirement System	24.5	27.5	27.5	27.5	13.2	15.0	10.2	10.0	10.5	10.0	9.3	10.0	1.9	0.0	2.9	0.0
Judges' Retirement System	25.4	27.5	28.2	27.5	14.3	15.0	10.5	10.0	10.1	10.0	9.3	10.0	2.0	0.0	0.2	0.0
State Police Retirement System	25.2	27.5	28.1	27.5	14.8	15.0	10.4	10.0	10.0	10.0	9.0	10.0	1.9	0.0	0.6	0.0
Deputy Sheriffs' Retirement System	25.3	27.5	28.1	27.5	14.5	15.0	10.4	10.0	10.0	10.0	9.2	10.0	2.0	0.0	0.5	0.0
Municipal Police & Firefighter Retirement System	24.1	27.5	26.4	27.5	14.3	15.0	9.8	10.0	9.5	10.0	8.3	10.0	1.9	0.0	5.7	0.0
Municipal Model A	26.5	27.5	29.5	27.5	13.4	15.0	10.6	10.0	10.2	10.0	9.7	10.0	0.0	0.0	0.1	0.0
Insurance Assets																
Workers' Compensation Old Fund	14.7	15.0	16.5	15.0	50.3	50.0	0.0	0.0	0.0	0.0	14.8	15.0	0.0	0.0	3.7	5.0
Workers' Comp. Self-Insured Guaranty Risk Pool	14.8	15.0	16.6	15.0	46.0	45.0	0.0	0.0	0.0	0.0	20.1	20.0	0.0	0.0	2.5	5.0
Workers' Comp. Self-Insured Security Risk Pool	14.7	15.0	16.6	15.0	45.5	45.0	0.0	0.0	0.0	0.0	19.8	20.0	0.0	0.0	3.4	5.0
Workers' Comp. Uninsured Employers Fund	14.9	15.0	16.3	15.0	39.6	40.0	0.0	0.0	0.0	0.0	19.3	20.0	0.0	0.0	9.9	10.0
Pneumoconiosis	14.7	15.0	16.3	15.0	45.3	45.0	0.0	0.0	0.0	0.0	19.9	20.0	0.0	0.0	3.8	5.0
Board of Risk & Insurance Mgmt.	14.7	15.0	16.3	15.0	44.8	45.0	0.0	0.0	0.0	0.0	19.2	20.0	0.0	0.0	5.0	5.0
Public Employees' Insurance Agency	12.3	12.5	13.7	12.5	54.7	55.0	0.0	0.0	0.0	0.0	19.3	20.0	0.0	0.0	0.0	0.0
WV Retiree Health Benefit Trust Fund	25.3	27.5	28.1	27.5	14.8	15.0	10.4	10.0	10.1	10.0	9.3	10.0	2.0	0.0	0.0	0.0
Endowment Assets																
Berkeley County Development Authority	25.3	27.5	28.1	27.5	14.8	15.0	10.4	10.0	10.1	10.0	9.3	10.0	2.0	0.0	0.0	0.0
Wildlife Fund	25.3	27.5	28.1	27.5	14.8	15.0	10.4	10.0	10.1	10.0	9.2	10.0	2.0	0.0	0.1	0.0
Prepaid Tuition Trust	27.4	27.5	23.2	22.5	47.4	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Revenue Shortfall Reserve Fund	0.0	0.0	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	14.6	15.0	16.2	15.0	69.2	70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WV DEP Trust	31.7	32.5	34.7	32.5	14.9	15.0	0.0	0.0	0.0	0.0	18.7	20.0	0.0	0.0	0.0	0.0
WV DEP Agency	19.2	20.0	21.3	20.0	39.3	40.0	0.0	0.0	0.0	0.0	18.6	20.0	0.0	0.0	1.6	0.0

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

(b) As of January 2014, the Total Equity Policy Index is 50% Russell 3000 and 50% MSCI ACW ex USA (IMI). From April 2008 to December 2013, the Total Equity Policy Index was 50% Russell 3000 and 50% MSCI ACW ex USA (Standard). Prior periods were 40% S&P 500, 30% Russell 2500, and 30% MSCI ACW 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 are included in the Total Return Fixed Income Composite.

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

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 InvestorForce, 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.