Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: OCTOBER 31, 2020

Participant Plan Performance Review for

West Virginia Investment Management Board

	6/30/2020		10/31/2020		Performance %							
	Asset ($000)	%	Asset ($000)	%	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
WVIMB Fund Assets	**20,136,091**	**100.0**	**20,602,833**	**100.0**								
Pension Assets	**16,181,269**	**80.4**	**16,521,851**	**80.1**								
Public Employees' Retirement System	6,899,129	34.3	7,079,505	34.4	(0.8)	0.7	3.7	5.0	5.8	7.9	8.1	6.8
Teachers' Retirement System	7,820,075	38.8	7,939,642	38.5	(0.8)	0.7	3.7	4.9	5.8	7.9	8.1	6.6
EMS Retirement System	88,627	0.4	92,418	0.4	(0.8)	0.6	3.7	5.0	5.8	7.9	8.1	
Public Safety Retirement System	675,608	3.4	684,203	3.3	(0.8)	0.7	3.7	5.0	5.8	7.9	8.1	6.8
Judges' Retirement System	215,698	1.1	222,439	1.1	(0.8)	0.7	3.8	5.0	5.8	7.9	8.2	6.8
State Police Retirement System	220,921	1.1	231,931	1.1	(0.8)	0.6	3.8	5.1	5.8	7.9	8.1	6.8
Deputy Sheriffs' Retirement System	239,121	1.2	247,627	1.2	(0.8)	0.6	3.7	5.0	5.8	7.9	8.1	6.8
Municipal Police & Firefighter Retirement System	14,669	0.1	16,341	0.1	(0.8)	0.7	3.8	5.3	5.8	7.8	7.3	
Municipal Model A (I)	5,851	0.0	5,996	0.0	(0.9)	0.7	4.1	5.2	6.0	8.0		
Municipal Model B (I)	1,570	0.0	1,749	0.0	(1.0)	0.5	4.1	5.1				
Insurance Assets	**2,910,807**	**14.5**	**2,998,876**	**14.6**								
Workers' Compensation Old Fund	1,013,189	5.0	1,009,889	4.9	(0.6)	0.6	3.5	5.5	4.5	5.6	5.0	
Workers' Comp. Self-Insured Guaranty Risk Pool	34,115	0.2	35,314	0.2	(0.5)	0.7	3.5	5.3	4.4	5.4	5.1	
Workers' Comp. Self-Insured Security Risk Pool	50,505	0.3	51,270	0.2	(0.5)	0.7	3.6	5.3	4.4	5.5		
Workers' Comp. Uninsured Employers' Fund	14,005	0.1	14,653	0.1	(0.5)	0.7	3.5	5.1	4.2	5.2	5.0	
Pneumoconiosis	223,717	1.1	228,343	1.1	(0.5)	0.7	3.6	5.2	4.4	5.4	5.1	5.6
Board of Risk & Insurance Management	164,662	0.8	170,528	0.8	(0.5)	0.7	3.6	5.3	4.4	5.4	5.2	
Public Employees' Insurance Agency	260,386	1.3	267,552	1.3	(0.5)	0.5	2.8	4.9	4.4	5.3	5.1	
WV Retiree Health Benefit Trust Fund	1,150,228	5.7	1,221,327	6.0	(0.9)	0.6	3.5	4.9	5.8	7.9	7.9	
Endowment Assets	**1,044,015**	**5.1**	**1,082,106**	**5.3**								
Berkeley County Development Authority	6,378	0.0	6,618	0.0	(0.8)	0.7	3.8	5.0	5.8	7.9		
Wildlife Fund	62,699	0.3	62,157	0.3	(0.8)	0.7	3.7	4.9	5.8	7.9	8.1	7.3
Revenue Shortfall Reserve Fund	272,021	1.4	287,157	1.4	0.0	0.0	0.0	3.6	3.9	3.7	3.3	
Revenue Shortfall Reserve Fund - Part B	492,955	2.4	507,576	2.6	(0.6)	0.1	3.0	6.6	5.0	5.9	5.2	
WV DEP Trust	9,053	0.0	9,524	0.0	(1.0)	1.1	5.2	4.4	4.1	6.7		
WV DEP Agency	200,909	1.0	209,074	1.0	(0.6)	0.8	4.1	5.0	4.3	5.9		

	Asset ($000)	%	1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
			Performance %							
Investment Pools Composite	20,613,038	100.00								
Portable Alpha Composite	3,810,765	18.49	(3.33)	(0.66)	4.94					
+/- S&P 500 Index			*(0.67)*	*(1.03)*	*(1.09)*					
Large Cap Domestic Equity Composite	317,124	1.54	(2.68)	0.37	6.03	9.97	9.77	11.31	13.03	6.28
+/- S&P 500 Index			*(0.02)*	*0.00*	*0.00*	*0.26*	*(0.65)*	*(0.40)*	*0.02*	*(0.02)*
Non-Large Cap Domestic Equity Composite	787,076	3.82	0.78	2.97	7.64	1.31	4.36	7.33	10.68	8.94
+/- Russell 2500 Index			*(1.03)*	*(0.70)*	*(0.16)*	*(0.80)*	*(0.18)*	*(0.84)*	*0.08*	*0.77*
International Equity Composite	4,587,799	22.26	(1.13)	1.40	6.74	(0.56)	(0.51)	5.62	5.11	6.09
+/- MSCI AC World ex US IMI Index (b)			*1.07*	*1.42*	*2.19*	*1.29*	*(0.73)*	*0.77*	*1.10*	*1.36*
Fixed Income Composite	3,567,616	17.30	(0.13)	(0.27)	1.74	5.88	5.01	4.93	4.29	5.60
+/- Bloomberg Barclays Capital Universal (c)			*0.23*	*0.84*	*1.11*	*(0.08)*	*0.03*	*0.58*	*0.46*	*0.47*
Core Fixed Income Composite	1,060,256	5.14	(0.34)	(0.85)	0.76	6.84	5.58	4.49	4.10	
+/- Bloomberg Barclays Capital Aggregate			*0.11*	*0.45*	*0.59*	*0.65*	*0.52*	*0.41*	*0.55*	
Total Return Fixed Income Composite *(j)*	2,507,360	12.16	(0.04)	(0.03)	2.17	5.38	4.73	5.10	4.37	5.97
+/- Bloomberg Barclays Capital Universal			*0.32*	*1.08*	*1.54*	*(0.58)*	*(0.25)*	*0.75*	*0.54*	*0.77*
TIPS Composite	305,397	1.48	(0.69)	0.06	2.39	9.28	5.59	4.48	3.25	
+/- Bloomberg Barclays Capital U.S.TIPS			*(0.04)*	*(0.01)*	*0.02*	*0.19*	*0.10*	*0.06*	*0.01*	
Cash Composite	388,566	1.89	0.01	0.02	0.03	0.64	1.51	1.11	0.62	1.61
+/- FTSE 3 Month US T-Bill (d)			*0.00*	*(0.01)*	*(0.01)*	*(0.22)*	*(0.11)*	*(0.05)*	*(0.04)*	*(0.04)*
Private Equity Composite	2,117,614	10.27	0.55	0.53	0.53	17.18	19.41	17.49	15.01	
+/- Russell 3000 + 3% (e, f)			*2.46*	*(1.32)*	*(7.31)*	*4.03*	*6.37*	*3.01*	*(1.33)*	
Real Estate Composite	2,009,589	9.75	0.18	0.13	0.44	(0.27)	5.34	6.81	8.44	
+/- NCREIF + 1% (e)			*(0.15)*	*0.30*	*0.85*	*(3.73)*	*(0.99)*	*(0.80)*	*(2.15)*	
Hedge Fund Composite	2,059,761	9.99	0.41	2.03	3.49	2.97	3.15	3.14	4.16	
+/- HFRI FOF + 1% (g)			*0.09*	*(0.42)*	*(1.34)*	*(3.47)*	*(0.42)*	*(0.82)*	*0.32*	
Private Credit & Income Composite	661,731	3.21	1.28	1.30	1.10	2.85	5.09	4.26		
+/- CS Leveraged Loan + 2% (e, k)			*0.94*	*(1.58)*	*(3.87)*	*(0.65)*	*0.10*	*(1.98)*		

	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	49.1	50.0	14.0	15.0	12.0	10.0	11.4	10.0	3.7	5.0	9.6	10.0	0.2	0.0
Teachers' Retirement System	49.1	50.0	13.9	15.0	12.0	10.0	11.4	10.0	3.8	5.0	9.6	10.0	0.2	0.0
EMS Retirement System	49.1	50.0	14.6	15.0	11.5	10.0	11.0	10.0	3.6	5.0	9.5	10.0	0.7	0.0
Public Safety Retirement System	49.1	50.0	13.5	15.0	12.1	10.0	11.5	10.0	3.8	5.0	9.8	10.0	0.2	0.0
Judges' Retirement System	49.2	50.0	14.1	15.0	11.9	10.0	11.3	10.0	3.7	5.0	9.8	10.0	0.0	0.0
State Police Retirement System	49.5	50.0	14.8	15.0	11.4	10.0	10.8	10.0	3.6	5.0	9.5	10.0	0.4	0.0
Deputy Sheriffs' Retirement System	49.2	50.0	14.3	15.0	11.7	10.0	11.1	10.0	3.7	5.0	9.7	10.0	0.3	0.0
Municipal Police & Firefighter Retirement System	48.6	50.0	15.4	15.0	10.5	10.0	10.0	10.0	3.3	5.0	9.2	10.0	3.0	0.0
Municipal Model A	50.1	50.0	14.0	15.0	11.2	10.0	10.6	10.0	3.5	5.0	9.8	10.0	0.8	0.0
Municipal Model B	55.3	55.0	43.9	45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0
Insurance Assets														
Workers' Compensation Old Fund	30.2	30.0	50.5	50.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	15.0	3.9	5.0
Workers' Comp. Self-Insured Guaranty Risk Pool	30.4	30.0	45.2	45.0	0.0	0.0	0.0	0.0	0.0	0.0	19.6	20.0	4.8	5.0
Workers' Comp. Self-Insured Security Risk Pool	30.3	30.0	45.2	45.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2	20.0	4.3	5.0
Workers' Comp. Uninsured Employers Fund	30.2	30.0	40.2	40.0	0.0	0.0	0.0	0.0	0.0	0.0	19.4	20.0	10.2	10.0
Pneumoconiosis	30.3	30.0	45.2	45.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	4.5	5.0
Board of Risk & Insurance Mgmt.	30.3	30.0	45.0	45.0	0.0	0.0	0.0	0.0	0.0	0.0	19.6	20.0	5.1	5.0
Public Employees' Insurance Agency	25.3	25.0	55.3	55.0	0.0	0.0	0.0	0.0	0.0	0.0	19.4	20.0	0.0	0.0
WV Retiree Health Benefit Trust Fund	50.7	50.0	15.7	15.0	10.6	10.0	10.1	10.0	3.3	5.0	9.6	10.0	0.0	0.0
Endowment Assets														
Berkeley County Development Authority	49.3	50.0	14.6	15.0	11.6	10.0	11.1	10.0	3.7	5.0	9.7	10.0	0.0	0.0
Wildlife Fund	48.5	50.0	13.8	15.0	12.3	10.0	11.7	10.0	3.8	5.0	9.9	10.0	0.0	0.0
Revenue Shortfall Reserve Fund	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
Revenue Shortfall Reserve Fund - Part B	22.4	22.5	77.6	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	65.3	65.0	15.4	15.0	0.0	0.0	0.0	0.0	0.0	0.0	19.3	20.0	0.0	0.0
WV DEP Agency	40.2	40.0	40.4	40.0	0.0	0.0	0.0	0.0	0.0	0.0	19.4	20.0	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) Prior to January 2014, the index was the MSCI ACW ex USA (Standard).

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

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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