Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: SEPTEMBER 30, 2018

Participant Plan Performance Review for

West Virginia Investment Management Board

	6/30/2018		9/30/2018		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**	**19,628,299**	**100.0**								
Pension Assets	**15,795,451**	**81.0**	**15,897,375**	**81.0**								
Public Employees' Retirement System	6,718,698	34.5	6,789,231	34.6	0.2	1.8	1.8	7.6	11.0	8.6	9.1	6.9
Teachers' Retirement System	7,691,788	39.5	7,708,222	39.3	0.2	1.8	1.8	7.6	10.9	8.5	8.9	6.7
EMS Retirement System	78,921	0.4	80,355	0.4	0.2	1.8	1.8	7.6	11.0	8.6	9.1	
Public Safety Retirement System	682,799	3.5	683,494	3.5	0.2	1.8	1.8	7.7	11.0	8.6	9.1	6.9
Judges' Retirement System	204,484	1.0	207,198	1.1	0.2	1.8	1.8	7.7	11.0	8.6	9.1	6.9
State Police Retirement System	188,912	1.0	193,830	1.0	0.2	1.8	1.8	7.6	11.0	8.6	9.1	6.8
Deputy Sheriffs' Retirement System	219,368	1.1	223,637	1.1	0.2	1.8	1.8	7.6	11.0	8.6	9.1	6.9
Municipal Police & Firefighter Retirement System	7,843	0.0	8,677	0.0	0.1	1.8	1.8	7.4	10.6	8.3		
Municipal Model A	1,514	0.0	1,590	0.0	0.2	1.8	1.8	7.7	10.9	8.5		
Municipal Model C	1,124	0.0	1,141	0.0	0.1	1.7	1.7					
Insurance Assets	**2,785,522**	**14.3**	**2,784,763**	**14.2**								
Workers' Compensation Old Fund	1,185,505	6.0	1,166,594	5.9	0.0	1.1	1.1	3.0	6.4	4.7	5.6	
Workers' Comp. Self-Insured Guaranty Risk Pool	33,908	0.2	33,948	0.2	0.1	1.1	1.1	3.3	6.3	4.8	4.3	
Workers' Comp. Self-Insured Security Risk Pool	53,204	0.3	52,906	0.3	0.1	1.2	1.2	3.3	6.3			
Workers' Comp. Uninsured Employers' Fund	12,881	0.1	13,077	0.1	0.1	1.1	1.1	3.5	6.1	4.7	4.0	
Pneumoconiosis	245,797	1.3	244,011	1.2	0.1	1.1	1.1	3.3	6.2	4.8	6.0	5.7
Board of Risk & Insurance Management	151,588	0.8	153,327	0.8	0.1	1.1	1.1	3.3	6.2	4.8	6.6	
Public Employees' Insurance Agency	198,826	1.0	200,687	1.0	0.0	0.9	0.9	2.9	6.0	4.7	6.1	
WV Retiree Health Benefit Trust Fund	903,813	4.6	920,213	4.7	0.2	1.8	1.8	7.6	11.0	8.6	9.4	
Endowment Assets	**925,255**	**4.7**	**946,161**	**4.8**								
Berkeley County Development Authority	7,742	0.0	7,882	0.0	0.2	1.8	1.8	7.6				
Wildlife Fund	63,823	0.3	65,213	0.3	0.2	1.8	1.8	7.6	11.0	8.6	9.1	7.3
Prepaid Tuition Trust	42,256	0.2	38,383	0.2	(0.1)	0.3	0.3	1.8	7.5	6.3	7.9	
Revenue Shortfall Reserve Fund	167,666	0.9	185,254	0.9	(0.5)	(0.2)	(0.2)	(0.3)	2.3	2.0	3.4	
Revenue Shortfall Reserve Fund - Part B	438,711	2.3	441,888	2.4	(0.2)	0.7	0.7	1.5	5.9	4.4	5.4	
WV DEP Trust	9,658	0.0	9,136	0.0	0.3	2.2	2.2	5.9	10.2	7.5		
WV DEP Agency	195,399	1.0	198,405	1.0	0.2	1.5	1.5	3.7	7.5			

Composite Asset Allocation & Performance Net of Fees

Period Ending: September 30, 2018

	Asset ($000)	%	Performance % 1 Month	3 Month	FYTD	1 Year	3 Year	5 Year	10 Year	20 Year
Investment Pools Composite	19,636,658	100.00								
Total Equity Composite	9,456,968	48.16	0.25	3.27	3.27	7.63	14.06	9.56	10.19	8.03
+/- Total Equity Base Index (b)			*0.04*	*(0.52)*	*(0.52)*	*(2.12)*	*0.16*	*0.41*	*1.24*	*0.81*
Domestic Equity Composite	4,698,282	23.93	(0.09)	6.55	6.55	16.79	16.22	13.32	12.05	8.74
+/- Russell 3000 Index			*(0.26)*	*(0.57)*	*(0.57)*	*(0.79)*	*(0.85)*	*(0.14)*	*0.04*	*0.92*
International Equity Composite	4,758,686	24.23	0.58	0.16	0.16	(0.53)	11.87	5.78	8.13	7.75
+/- MSCI AC World ex US IMI Index (c)			*0.32*	*(0.32)*	*(0.32)*	*(2.79)*	*1.22*	*0.92*	*2.33*	*1.43*
Fixed Income Composite	3,494,790	17.80	(0.03)	0.34	0.34	(0.54)	3.23	3.12	5.08	5.12
+/- Bloomberg Barclays Capital Universal (d)			*0.40*	*0.07*	*0.07*	*0.46*	*1.25*	*0.59*	*0.86*	*0.44*
Core Fixed Income Composite	1,068,237	5.44	(0.64)	0.05	0.05	(0.86)	1.55	2.52		
+/- Bloomberg Barclays Capital Aggregate			*0.00*	*0.03*	*0.03*	*0.36*	*0.24*	*0.36*		
Total Return Fixed Income Composite *(k)*	2,426,553	12.36	0.24	0.47	0.47	(0.41)	3.97	3.37	5.48	5.62
+/- Bloomberg Barclays Capital Universal			*0.67*	*0.20*	*0.20*	*0.59*	*1.99*	*0.84*	*1.26*	*0.82*
TIPS Composite	389,394	1.98	(1.05)	(0.80)	(0.80)	0.46	2.06	1.37		
+/- Bloomberg Barclays Capital U.S.TIPS			*0.00*	*0.02*	*0.02*	*0.05*	*0.02*	*0.00*		
Cash Composite	75,043	0.38	0.15	0.47	0.47	1.52	0.83	0.54	0.39	2.01
+/- Citigroup 90 Day T-Bill (e)			*(0.02)*	*(0.03)*	*(0.03)*	*(0.05)*	*0.03*	*0.04*	*(0.02)*	*(0.03)*
Private Equity Composite	1,773,950	9.04	0.03	0.73	0.73	21.16	16.95	16.12	12.32	
+/- Russell 3000 + 3% (f, g)								*(0.52)*	*(3.49)*	
Real Estate Composite	1,792,867	9.13	(0.13)	(0.04)	(0.04)	9.24	9.02	9.82	7.71	
+/- NCREIF + 1% (f)								*(0.95)*	*0.49*	
Hedge Fund Composite	2,196,120	11.18	0.57	0.59	0.59	5.42	3.39	4.11	5.15	
+/- HFRI FOF + 1% (h)			*0.66*	*0.07*	*0.07*	*1.34*	*(0.90)*	*0.52*	*1.08*	
Opportunistic Income Composite	457,526	2.33	0.01	0.02	0.02	4.99	3.67			
+/- CS Leveraged Loan + 2.5%			*(0.88)*	*(2.53)*	*(2.53)*	*(3.09)*	*(4.26)*			

	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	25.5	27.5	25.9	27.5	13.9	15.0	10.5	10.0	10.6	10.0	10.7	10.0	2.7	0.0	0.2	0.0
Teachers' Retirement System	25.7	27.5	26.0	27.5	13.7	15.0	10.5	10.0	10.6	10.0	10.7	10.0	2.7	0.0	0.1	0.0
EMS Retirement System	25.5	27.5	25.9	27.5	14.2	15.0	10.4	10.0	10.6	10.0	10.6	10.0	2.7	0.0	0.1	0.0
Public Safety Retirement System	25.5	27.5	25.9	27.5	14.4	15.0	10.5	10.0	10.5	10.0	10.5	10.0	2.7	0.0	0.0	0.0
Judges' Retirement System	25.6	27.5	25.9	27.5	13.9	15.0	10.5	10.0	10.6	10.0	10.7	10.0	2.7	0.0	0.1	0.0
State Police Retirement System	25.6	27.5	25.8	27.5	14.2	15.0	10.4	10.0	10.5	10.0	10.5	10.0	2.7	0.0	0.3	0.0
Deputy Sheriffs' Retirement System	25.4	27.5	25.9	27.5	14.3	15.0	10.4	10.0	10.6	10.0	10.6	10.0	2.7	0.0	0.1	0.0
Municipal Police & Firefighter Retirement System	25.2	27.5	24.2	27.5	14.3	15.0	10.0	10.0	10.1	10.0	9.6	10.0	2.6	0.0	4.0	0.0
Municipal Model A	24.9	27.5	24.7	27.5	13.3	15.0	9.7	10.0	9.8	10.0	9.5	10.0	2.5	0.0	5.6	0.0
Municipal Model C	24.4	25.0	24.2	25.0	27.9	30.0	5.2	5.0	5.2	5.0	10.0	10.0	1.3	0.0	1.8	0.0
Insurance Assets																
Workers' Compensation Old Fund	15.2	15.0	15.3	15.0	49.8	50.0	0.0	0.0	0.0	0.0	16.9	15.0	0.0	0.0	2.8	5.0
Workers' Comp. Self-Insured Guaranty Risk Pool	15.0	15.0	15.1	15.0	43.3	45.0	0.0	0.0	0.0	0.0	22.0	20.0	0.0	0.0	4.6	5.0
Workers' Comp. Self-Insured Security Risk Pool	14.9	15.0	15.2	15.0	43.7	45.0	0.0	0.0	0.0	0.0	22.2	20.0	0.0	0.0	4.0	5.0
Workers' Comp. Uninsured Employers Fund	14.8	15.0	15.0	15.0	38.2	40.0	0.0	0.0	0.0	0.0	21.6	20.0	0.0	0.0	10.4	10.0
Pneumoconiosis	14.5	15.0	14.9	15.0	44.2	45.0	0.0	0.0	0.0	0.0	22.1	20.0	0.0	0.0	4.3	5.0
Board of Risk & Insurance Mgmt.	14.9	15.0	15.0	15.0	43.5	45.0	0.0	0.0	0.0	0.0	21.6	20.0	0.0	0.0	5.0	5.0
Public Employees' Insurance Agency	12.5	12.5	12.6	12.5	53.2	55.0	0.0	0.0	0.0	0.0	21.6	20.0	0.0	0.0	0.1	0.0
WV Retiree Health Benefit Trust Fund	25.7	27.5	25.9	27.5	14.1	15.0	10.5	10.0	10.5	10.0	10.6	10.0	2.7	0.0	0.0	0.0
Endowment Assets																
Berkeley County Development Authority	25.6	27.5	25.9	27.5	14.2	15.0	10.5	10.0	10.5	10.0	10.6	10.0	2.7	0.0	0.0	0.0
Wildlife Fund	25.6	27.5	25.3	27.5	14.9	15.0	10.4	10.0	10.4	10.0	10.3	10.0	2.7	0.0	0.4	0.0
Prepaid Tuition Trust	0.0	0.0	0.0	0.0	80.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0
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	11.2	11.3	11.4	11.3	77.4	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	31.3	32.5	32.8	32.5	14.4	15.0	0.0	0.0	0.0	0.0	21.5	20.0	0.0	0.0	0.0	0.0
WV DEP Agency	19.9	20.0	20.0	20.0	38.5	40.0	0.0	0.0	0.0	0.0	21.6	20.0	0.0	0.0	0.0	0.0

(a) As of January 2014, the PERS Base is 30% Russell 3000, 30% MSCI ACW ex USA (IMI), and 40% Bloomberg Barclays Capital Universal. From April 2008 to December 2013, the PERS Base 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 Base Index is 50% Russell 3000 and 50% MSCI ACW ex USA (IMI). From April 2008 to December 2013, the Total Equity Base 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.

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