



Quarterly Investment Performance Analysis

Montana Board of Investments

Period Ended: December 31, 2020



Montana Board of Investments
Comparative Performance
Retirement Plans

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Public Employees' Retirement - Net	9.57	15.26	11.94	8.37	9.41	8.11	8.89	6.37	16.77	-2.63	14.80	7.32	1.86	7.90	07/01/1994
Public Employees' Benchmark	12.62	17.99	11.58	8.27	9.82	8.48	9.34	N/A	20.45	-5.57	15.35	9.12	1.40	N/A	
Difference	-3.05	-2.73	0.36	0.10	-0.41	-0.37	-0.45	N/A	-3.68	2.94	-0.55	-1.80	0.46	N/A	
Public Employees' Retirement - Gross	9.73	15.55	12.53	8.99	9.99	8.66	9.45	6.79	17.44	-2.03	15.34	7.78	2.31	8.22	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	44	44	42	65	57	8	49	
Teachers' Retirement - Net	9.56	15.25	11.93	8.37	9.41	8.11	8.89	6.37	16.78	-2.64	14.76	7.33	1.86	7.91	07/01/1994
Teachers' Benchmark	12.60	17.96	11.55	8.25	9.80	8.47	9.34	N/A	20.42	-5.57	15.32	9.11	1.40	N/A	
Difference	-3.04	-2.71	0.38	0.12	-0.39	-0.36	-0.45	N/A	-3.64	2.93	-0.56	-1.78	0.46	N/A	
Teachers' Retirement - Gross	9.72	15.54	12.52	8.99	9.98	8.66	9.45	6.79	17.45	-2.03	15.31	7.80	2.32	8.23	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	44	43	42	66	57	8	48	
Police Retirement - Net	9.58	15.26	11.95	8.38	9.42	8.11	8.89	6.33	16.80	-2.63	14.79	7.32	1.86	7.77	07/01/1994
Police Benchmark	12.63	18.01	11.60	8.27	9.82	8.48	9.34	N/A	20.44	-5.57	15.33	9.11	1.40	N/A	
Difference	-3.05	-2.75	0.35	0.11	-0.40	-0.37	-0.45	N/A	-3.64	2.94	-0.54	-1.79	0.46	N/A	
Police Retirement - Gross	9.74	15.55	12.54	9.01	10.00	8.67	9.45	6.75	17.47	-2.02	15.33	7.78	2.31	8.09	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	48	43	42	66	57	8	56	

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. Retirement plan benchmarks' inception dates were updated to 1/1/2011.



Montana Board of Investments
Comparative Performance
Retirement Plans

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Firefighters' Retirement - Net	9.58	15.26	11.95	8.38	9.42	8.11	8.89	6.33	16.79	-2.62	14.79	7.32	1.87	7.76	07/01/1994
Firefighters' Benchmark	12.63	18.01	11.59	8.27	9.82	8.48	9.34	N/A	20.44	-5.57	15.33	9.12	1.41	N/A	
Difference	-3.05	-2.75	0.36	0.11	-0.40	-0.37	-0.45	N/A	-3.65	2.95	-0.54	-1.80	0.46	N/A	
Firefighters' Retirement - Gross	9.74	15.55	12.53	9.01	10.00	8.67	9.45	6.75	17.46	-2.01	15.34	7.78	2.32	8.08	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	48	43	42	65	57	8	56	
Sheriffs' Retirement - Net	9.57	15.26	11.94	8.37	9.41	8.11	8.88	6.36	16.75	-2.62	14.80	7.33	1.86	7.79	07/01/1994
Sheriffs' Benchmark	12.61	17.99	11.58	8.27	9.82	8.48	9.33	N/A	20.43	-5.56	15.35	9.13	1.40	N/A	
Difference	-3.04	-2.73	0.36	0.10	-0.41	-0.37	-0.45	N/A	-3.68	2.94	-0.55	-1.80	0.46	N/A	
Sheriffs' Retirement - Gross	9.73	15.55	12.53	8.99	9.99	8.66	9.44	6.78	17.42	-2.02	15.34	7.79	2.32	8.11	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	46	44	42	65	57	8	54	
Highway Patrol Retirement - Net	9.57	15.24	11.94	8.38	9.41	8.11	8.89	6.38	16.78	-2.62	14.79	7.30	1.87	7.79	07/01/1994
Highway Patrol Benchmark	12.61	17.98	11.60	8.28	9.82	8.48	9.35	N/A	20.45	-5.56	15.34	9.11	1.41	N/A	
Difference	-3.04	-2.74	0.34	0.10	-0.41	-0.37	-0.46	N/A	-3.67	2.94	-0.55	-1.81	0.46	N/A	
Highway Patrol Retirement - Gross	9.73	15.54	12.53	9.00	9.99	8.67	9.45	6.79	17.45	-2.01	15.33	7.77	2.32	8.11	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	44	44	41	66	58	8	55	

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. Retirement plan benchmarks' inception dates were updated to 1/1/2011.



Montana Board of Investments
Comparative Performance
Retirement Plans

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Game Wardens' Retirement - Net	9.56	15.24	11.91	8.36	9.41	8.10	8.87	6.33	16.77	-2.62	14.81	7.31	1.88	7.81	07/01/1994
Game Wardens' Benchmark	12.61	17.98	11.56	8.27	9.82	8.48	9.33	N/A	20.45	-5.56	15.36	9.14	1.40	N/A	
Difference	-3.05	-2.74	0.35	0.09	-0.41	-0.38	-0.46	N/A	-3.68	2.94	-0.55	-1.83	0.48	N/A	
Game Wardens' Retirement - Gross	9.72	15.53	12.50	8.99	9.99	8.66	9.43	6.75	17.44	-2.01	15.35	7.78	2.33	8.12	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	48	44	42	65	57	7	53	
Judges' Retirement - Net	9.57	15.26	11.94	8.37	9.42	8.11	8.88	6.38	16.78	-2.64	14.82	7.32	1.86	7.80	07/01/1994
Judges' Benchmark	12.62	18.00	11.59	8.28	9.83	8.49	9.34	N/A	20.47	-5.57	15.37	9.13	1.40	N/A	
Difference	-3.05	-2.74	0.35	0.09	-0.41	-0.38	-0.46	N/A	-3.69	2.93	-0.55	-1.81	0.46	N/A	
Judges' Retirement - Gross	9.73	15.55	12.53	9.00	9.99	8.67	9.44	6.80	17.45	-2.03	15.36	7.79	2.32	8.12	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	34	17	9	44	43	42	65	57	8	54	
Volunteer Firefighters' Retirement - Net	9.58	15.26	11.94	8.37	9.38	8.10	8.87	6.75	16.79	-2.64	14.79	7.16	1.91	7.61	07/01/1994
Volunteer Firefighters' Benchmark	12.64	18.02	11.59	8.27	9.82	8.48	9.34	N/A	20.47	-5.59	15.33	9.11	1.41	N/A	
Difference	-3.06	-2.76	0.35	0.10	-0.44	-0.38	-0.47	N/A	-3.68	2.95	-0.54	-1.95	0.50	N/A	
Volunteer Firefighters' Retirement - Gross	9.74	15.55	12.53	9.00	9.96	8.65	9.43	7.16	17.46	-2.04	15.34	7.63	2.36	7.92	07/01/1994
All Public Plans > \$3B Total Fund Median	9.79	15.56	11.40	8.04	9.66	7.66	8.10	6.73	17.25	-2.79	16.08	7.96	0.56	8.16	
Rank	54	51	34	28	36	18	9	15	43	42	65	67	7	68	

Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. Retirement plan benchmarks' inception dates were updated to 1/1/2011.

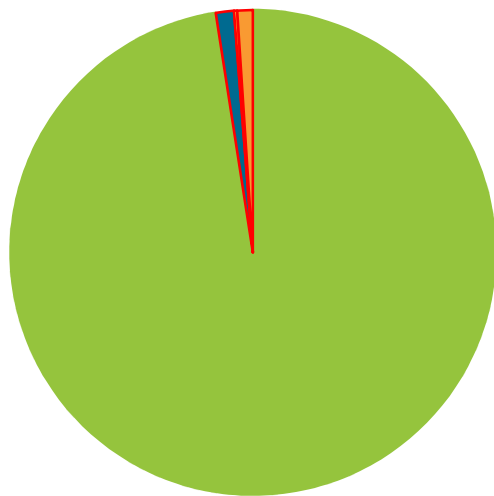


Montana Board of Investments
 Asset Allocation by Segment
 Retirement Plans

As of December 31, 2020

	Consolidated Asset Pension Pool (CAPP)		Short Term Investment Pool (STIP)		Total Fund	
	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	6,540,152,238	49.45	69,257,157	50.02	6,609,409,396	49.45
Teachers' Retirement	4,634,442,261	35.04	47,560,565	34.35	4,682,002,826	35.03
Firefighters' Retirement	535,942,758	4.05	5,470,664	3.95	541,413,422	4.05
Police Retirement	503,204,986	3.80	5,165,623	3.73	508,370,609	3.80
Sheriffs' Retirement	436,073,107	3.30	4,590,720	3.32	440,663,827	3.30
Game Wardens' Retirement	243,024,279	1.84	2,825,738	2.04	245,850,017	1.84
Highway Patrol Retirement	170,051,493	1.29	1,879,318	1.36	171,930,811	1.29
Judges' Retirement	119,746,887	0.91	1,262,017	0.91	121,008,904	0.91
Volunteer Firefighters' Retirement	43,560,763	0.33	434,207	0.31	43,994,970	0.33
Retirement Plans Total Fund Composite	13,226,198,773	98.96	138,446,009	1.04	13,364,644,782	100.00

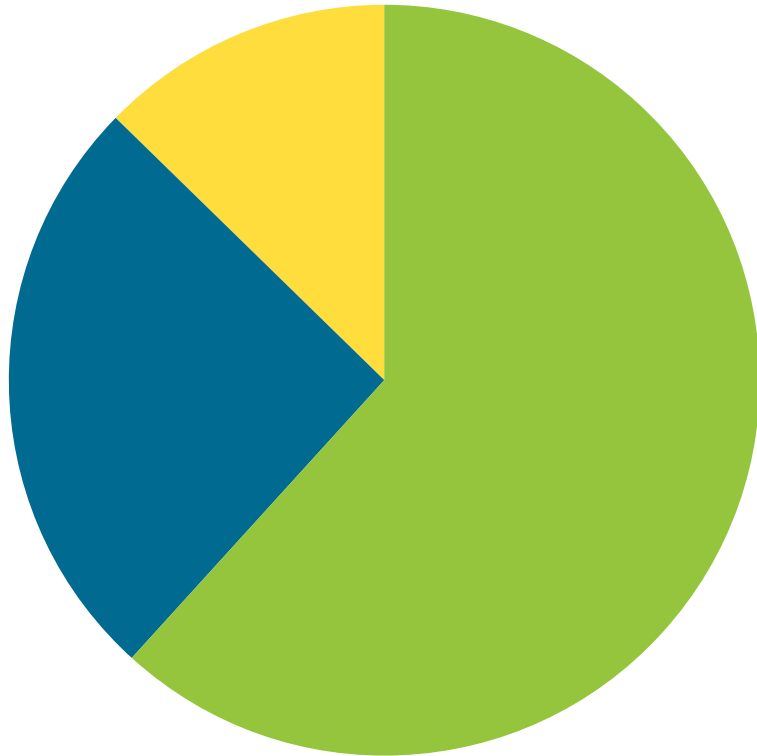
December 31, 2020 : \$13,364,644,782



Segments	Market Value (\$)	Allocation (%)
CAPP Ex Cash	13,037,154,732	97.55
CAPP Cash Pension	162,035,878	1.21
CAPP Asset Class Cash	27,008,164	0.20
Short Term Investment Pool (STIP)	138,446,009	1.04
Total Cash	327,490,050	2.45

Allocations shown may not sum up to 100% exactly due to rounding. Retirement Plan market values may differ from State Street due to uninvested amounts not included in segment totals.

December 31, 2020 : \$21,421,163,238



	Market Value (\$)	Allocation (%)
Consolidated Asset Pension Pool (CAPP)	13,226,198,725	61.74
Short Term Investment Pool	5,476,872,721	25.57
Trust Funds Investment Pool	2,718,091,792	12.69

Allocations shown may not sum up to 100% exactly due to rounding. Market values do not include pending transactions.

Montana Board of Investments
Comparative Performance
Investment Pools

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Consolidated Asset Pension Pool (CAPP)	9.68	15.44	12.10	8.49	N/A	N/A	N/A	17.12	-2.74	N/A	N/A	N/A	9.62	04/01/2017
CAPP Custom Benchmark	12.77	18.21	11.73	8.38	N/A	N/A	N/A	20.88	-5.73	N/A	N/A	N/A	9.60	
Difference	-3.09	-2.77	0.37	0.11	N/A	N/A	N/A	-3.76	2.99	N/A	N/A	N/A	0.02	
Trust Funds Investment Pool	0.84	1.77	7.23	5.49	4.90	4.74	4.79	8.98	0.45	4.01	4.02	1.83	6.15	10/01/1995
Bloomberg US Agg Bond Index	0.67	1.29	7.51	5.34	4.44	4.09	3.84	8.72	0.01	3.54	2.65	0.55	5.28	
Difference	0.17	0.48	-0.28	0.15	0.46	0.65	0.95	0.26	0.44	0.47	1.37	1.28	0.87	
Short Term Investment Pool	0.06	0.15	0.73	1.66	1.34	1.00	0.78	2.28	1.98	1.11	0.61	0.22	2.38	04/01/1997
Short Term Custom Index	0.02	0.05	0.36	1.48	1.22	0.92	0.71	2.14	1.95	1.15	0.52	0.21	2.29	
Difference	0.04	0.10	0.37	0.18	0.12	0.08	0.07	0.14	0.03	-0.04	0.09	0.01	0.09	
iMoney.net Money Fund (Gross) Median	0.04	0.11	0.73	1.77	1.43	1.08	0.83	2.45	2.15	1.21	0.61	0.25	2.37	
Difference	0.02	0.04	0.00	-0.11	-0.09	-0.08	-0.05	-0.17	-0.17	-0.10	0.00	-0.03	0.01	

Performance shown is net of all manager fees and expenses (Net-All). Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. See the Addendum for custom index specification. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
 Asset Allocation
 Consolidated Asset Pension Pool (CAPP)

As of December 31, 2020

December 31, 2020 : \$13,226,198,777



	Market Value (\$)	Allocation (%)
Domestic Equity	4,307,338,006	32.57
International Equity	2,474,267,460	18.71
Core Fixed Income	2,095,750,611	15.85
Private Investments	1,789,789,828	13.53
Real Estate	1,117,935,411	8.45
Non-Core Fixed Income	724,046,039	5.47
Natural Resources	555,035,544	4.20
Cash Pension	162,035,878	1.23

Allocations shown may not sum up to 100% due to rounding.

Montana Board of Investments
Comparative Performance
Consolidated Asset Pension Pool (CAPP)

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Domestic Equity	15.59	25.37	20.09	13.41	14.45	12.10	13.32	30.75	-7.09	20.79	11.46	0.86	10.03	05/01/2003
Domestic Equity Custom Index	14.70	25.28	21.10	14.61	15.55	13.00	13.96	31.14	-5.20	21.05	13.03	1.01	10.84	
Difference	0.89	0.09	-1.01	-1.20	-1.10	-0.90	-0.64	-0.39	-1.89	-0.26	-1.57	-0.15	-0.81	
International Equity	17.08	26.13	13.35	5.79	9.61	5.60	5.48	22.86	-14.99	28.67	3.87	-3.57	5.26	04/01/1997
International Equity Custom Index	17.22	25.19	11.12	4.83	8.98	5.00	5.04	21.63	-14.76	27.81	4.41	-4.60	5.46	
Difference	-0.14	0.94	2.23	0.96	0.63	0.60	0.44	1.23	-0.23	0.86	-0.54	1.03	-0.20	
Core Fixed Income	0.43	1.42	8.25	5.32	4.28	4.10	4.14	6.90	0.95	2.29	3.19	0.79	6.06	04/01/1995
Bloomberg US Agg Bond Index	0.67	1.29	7.51	5.34	4.44	4.09	3.84	8.72	0.01	3.54	2.65	0.55	5.49	
Difference	-0.24	0.13	0.74	-0.02	-0.16	0.01	0.30	-1.82	0.94	-1.25	0.54	0.24	0.57	
Non-Core Fixed Income	5.77	10.43	6.40	5.83	7.16	5.12	6.37	13.98	-2.27	5.99	12.47	-2.52	8.17	06/01/2009
Bloomberg US HY 2% Issuer Cap Index	6.44	11.32	7.05	6.21	8.57	5.73	6.79	14.32	-2.08	7.50	17.13	-4.43	9.19	
Difference	-0.67	-0.89	-0.65	-0.38	-1.41	-0.61	-0.42	-0.34	-0.19	-1.51	-4.66	1.91	-1.02	
Natural Resources	6.43	3.62	-13.43	-3.67	N/A	N/A	N/A	-2.18	5.55	N/A	N/A	N/A	-1.41	04/01/2017
MSCI ACW Cmdbty Producers Index (USD) (Net)	24.79	19.25	-12.32	-4.36	5.67	-2.57	-2.54	13.06	-11.75	13.70	32.44	-25.83	0.28	
Difference	-18.36	-15.63	-1.11	0.69	N/A	N/A	N/A	-15.24	17.30	N/A	N/A	N/A	-1.69	
Real Estate	2.09	2.06	-0.35	5.19	6.70	8.51	9.37	6.97	9.19	9.17	8.82	14.27	3.82	06/01/2006
Real Estate Custom Index	0.27	-1.49	-19.66	-1.19	2.21	5.08	7.44	25.84	-4.57	5.99	9.08	13.86	4.33	
Difference	1.82	3.55	19.31	6.38	4.49	3.43	1.93	-18.87	13.76	3.18	-0.26	0.41	-0.51	
Cash Pension	0.06	0.11	0.84	1.70	N/A	N/A	N/A	2.28	2.00	N/A	N/A	N/A	1.58	05/01/2017
Short Term Custom Index	0.02	0.05	0.36	1.48	1.22	0.92	0.71	2.14	1.95	1.15	0.52	0.21	1.44	
Difference	0.04	0.06	0.48	0.22	N/A	N/A	N/A	0.14	0.05	N/A	N/A	N/A	0.14	
Private Investments*	7.82	15.59	10.91	11.80	11.57	11.48	12.51	12.95	11.55	15.20	7.37	7.20	12.19	05/01/2002
Private Equity Custom Index	28.90	36.13	18.90	10.88	14.58	14.14	16.21	27.38	-9.99	20.59	20.11	3.68	11.71	
Difference	-21.08	-20.54	-7.99	0.92	-3.01	-2.66	-3.70	-14.43	21.54	-5.39	-12.74	3.52	0.48	

For additional information on the Private Equity Custom Index, please see the Addendum. *Performance is based on the prior quarter's fair market value adjusted for cash flows during the most recent quarterly period.

Performance shown is net of all manager fees and expenses (Net-All). Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Please see Addendum for custom index specification. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Investment Pools

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Domestic Equity	15.65	25.52	20.37	13.74	14.79	12.42	13.66	31.13	-6.78	21.16	11.77	1.14	10.33	05/01/2003
All Public Plans-US Equity Segment Median	15.76	25.13	18.92	13.46	14.57	11.77	13.18	30.04	-5.83	20.31	12.78	0.14	10.54	
Rank	51	43	32	46	41	35	32	28	74	32	74	24	69	
Population	74	71	67	61	58	54	40	65	66	88	90	81	13	
International Equity	17.17	26.33	13.71	6.13	9.97	5.95	5.84	23.28	-14.72	29.06	4.24	-3.25	5.68	04/01/1997
All Public Plans-Intl. Equity Segment Median	17.24	25.81	12.76	6.32	9.97	6.19	6.46	23.71	-13.63	28.81	4.00	-2.54	N/A	
Rank	54	44	45	56	52	60	74	62	78	46	44	64	N/A	
Population	74	71	68	62	61	56	40	65	68	83	88	77	N/A	
Core Fixed Income	0.45	1.44	8.31	5.37	4.32	4.14	4.18	6.94	1.00	2.34	3.21	0.82	6.19	04/01/1995
All Public Plans-US Fixed Income Segment Median	1.70	3.46	8.59	5.73	5.48	4.65	4.63	9.25	-0.25	4.54	4.61	0.21	N/A	
Rank	83	81	58	73	84	75	72	86	12	90	73	28	N/A	
Population	80	78	74	68	66	62	48	68	72	84	90	77	N/A	
Trust Funds Investment Pool	0.86	1.81	7.30	5.57	4.98	4.83	4.89	9.06	0.53	4.10	4.12	1.89	6.21	10/01/1995
All Public Plans-US Fixed Income Segment Median	1.70	3.46	8.59	5.73	5.48	4.65	4.63	9.25	-0.25	4.54	4.61	0.21	N/A	
Rank	77	75	78	61	71	44	43	53	22	62	61	5	N/A	
Population	80	78	74	68	66	62	48	68	72	84	90	77	N/A	
Real Estate	2.32	2.50	1.11	6.87	8.34	10.09	10.96	8.65	11.12	10.91	10.26	15.68	5.28	06/01/2006
All Public Plans-Real Estate Segment Median	2.21	2.07	1.66	6.16	7.57	9.41	10.72	7.65	9.04	8.92	9.98	13.42	N/A	
Rank	39	39	72	40	45	40	44	39	15	27	47	10	N/A	
Population	47	42	38	26	22	17	13	35	27	31	28	26	N/A	

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Equity Composites

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Domestic Large Cap Equity - Net	14.05	24.26	21.44	14.89	15.48	13.18	13.97	31.06	-4.71	21.66	11.30	1.76	9.50	12/01/2006
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	9.52	
Difference	1.90	2.10	3.04	0.71	0.26	0.26	0.09	-0.43	-0.33	-0.17	-0.66	0.38	-0.02	
Domestic Large Cap Equity - Gross	14.10	24.37	21.66	15.10	15.67	13.36	14.18	31.29	-4.52	21.82	11.45	1.91	9.73	12/01/2006
IM U.S. Large Cap Equity (SA+CF) Median	12.76	22.72	17.55	13.15	14.46	12.33	13.62	30.25	-5.01	21.72	11.04	0.96	9.64	
Rank	37	35	33	34	35	33	35	41	45	49	47	40	47	
Domestic Large Cap Active - Net	16.05	24.50	21.48	14.43	14.88	12.89	13.83	31.03	-5.88	21.85	9.63	2.40	9.07	07/01/2007
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	9.29	
Difference	3.90	2.34	3.08	0.25	-0.34	-0.03	-0.05	-0.46	-1.50	0.02	-2.33	1.02	-0.22	
Domestic Large Cap Active - Gross	16.22	24.87	22.24	15.11	15.50	13.48	14.41	31.82	-5.34	22.40	10.12	2.88	9.59	07/01/2007
IM U.S. Large Cap Equity (SA+CF) Median	12.76	22.73	17.55	13.23	14.49	12.33	13.65	30.25	-5.01	21.72	11.04	0.96	9.40	
Rank	23	29	32	34	37	32	33	34	55	42	57	32	44	
Domestic Mid Cap Equity - Net	24.38	30.21	13.53	9.07	11.72	8.69	11.24	28.03	-10.75	19.45	12.30	-3.29	8.93	01/01/2005
Russell Mid Cap Index	19.91	28.86	17.10	11.61	13.40	10.96	12.41	30.54	-9.06	18.52	13.80	-2.44	9.95	
Difference	4.47	1.35	-3.57	-2.54	-1.68	-2.27	-1.17	-2.51	-1.69	0.93	-1.50	-0.85	-1.02	
Domestic Mid Cap Equity - Gross	24.38	30.21	13.53	9.28	12.12	9.15	11.75	28.11	-10.28	20.18	12.97	-2.71	9.40	01/01/2005
IM U.S. Mid Cap Equity (SA+CF) Median	20.35	29.71	16.04	11.22	13.48	10.44	12.38	30.14	-9.08	19.52	12.76	-1.12	10.40	
Rank	15	46	60	56	63	67	59	65	58	48	49	69	81	
Domestic Small Cap Equity - Net	28.68	34.62	13.09	8.37	11.92	8.95	11.20	25.76	-10.51	15.65	19.31	-1.61	11.81	03/01/2003
Russell 2000 Index	31.37	37.85	19.96	10.25	13.26	9.34	11.20	25.53	-11.01	14.65	21.31	-4.41	11.49	
Difference	-2.69	-3.23	-6.87	-1.88	-1.34	-0.39	0.00	0.23	0.50	1.00	-2.00	2.80	0.32	
Domestic Small Cap Equity - Gross	28.80	34.89	13.51	8.82	12.44	9.52	11.84	26.25	-10.09	16.27	19.97	-0.93	12.35	03/01/2003
IM U.S. Small Cap Equity (SA+CF) Median	28.76	35.60	16.37	9.14	12.93	9.43	11.74	25.86	-10.62	15.16	20.87	-2.38	12.65	
Rank	50	57	56	52	54	50	49	48	48	44	57	36	58	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Equity Composites

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
International Large Cap Passive - Net	16.96	24.25	10.81	5.02	9.19	5.18	5.17	21.59	-14.04	27.79	4.87	-4.71	7.29	06/01/2009
MSCI ACW Ex US Index (USD) (Net)	17.01	24.33	10.65	4.88	8.93	4.82	4.92	21.51	-14.20	27.19	4.50	-5.66	7.07	
Difference	-0.05	-0.08	0.16	0.14	0.26	0.36	0.25	0.08	0.16	0.60	0.37	0.95	0.22	
International Large Cap Passive - Gross	16.97	24.29	10.88	5.08	9.26	5.26	5.25	21.66	-13.98	27.88	4.96	-4.63	7.37	06/01/2009
International Equity Active - Net	17.21	28.26	15.91	6.93	10.42	6.71	6.48	25.83	-16.18	30.82	2.63	0.41	4.33	04/01/1997
MSCI ACW Ex US Index (USD) (Net)	17.01	24.33	10.65	4.88	8.93	4.82	4.92	21.51	-14.20	27.19	4.50	-5.66	5.53	
Difference	0.20	3.93	5.26	2.05	1.49	1.89	1.56	4.32	-1.98	3.63	-1.87	6.07	-1.20	
International Equity Active - Gross	17.35	28.59	16.50	7.48	10.99	7.26	7.00	26.48	-15.73	31.50	3.17	0.90	4.85	04/01/1997
IM International Large Cap Core Equity (SA+CF) Median	15.52	23.50	10.83	5.61	8.64	5.77	6.98	23.49	-14.36	26.34	1.60	0.33	7.08	
Rank	22	19	28	28	24	23	50	28	68	12	31	43	100	
International Value - Net	19.71	26.66	9.31	4.33	9.41	5.48	5.24	20.76	-13.97	30.72	5.59	-5.94	3.03	11/01/2006
MSCI ACW Ex US Val Index (USD) (Net)	20.42	23.16	-0.77	-0.41	5.70	1.71	2.78	15.72	-13.97	22.66	8.92	-10.06	2.10	
Difference	-0.71	3.50	10.08	4.74	3.71	3.77	2.46	5.04	0.00	8.06	-3.33	4.12	0.93	
International Value - Gross	19.86	26.98	9.87	4.87	9.97	6.03	5.81	21.37	-13.52	31.39	6.17	-5.46	3.61	11/01/2006
IM International Large Cap Value Equity (SA+CF) Median	18.20	25.18	5.00	2.59	7.33	4.29	6.14	21.16	-14.52	26.02	4.28	-2.02	4.65	
Rank	38	37	33	39	23	24	57	46	40	12	30	81	70	
International Growth - Net	15.47	28.60	23.08	10.71	11.79	7.57	7.11	31.39	-16.09	28.01	0.51	1.69	5.00	11/01/2006
MSCI ACW Ex US Grth Index (USD) (Net)	13.92	25.49	22.20	10.02	11.97	7.80	6.94	27.34	-14.43	32.01	0.12	-1.25	5.65	
Difference	1.55	3.11	0.88	0.69	-0.18	-0.23	0.17	4.05	-1.66	-4.00	0.39	2.94	-0.65	
International Growth - Gross	15.62	28.93	23.74	11.32	12.42	8.15	7.67	32.10	-15.61	28.74	1.12	2.21	5.56	11/01/2006
IM International Large Cap Growth Equity (SA+CF) Median	14.99	25.89	20.46	10.50	11.96	8.14	8.63	28.31	-13.91	31.37	-0.04	2.31	6.49	
Rank	43	24	41	44	45	50	67	19	66	69	34	51	72	
International Small Cap - Net	16.79	29.83	14.63	4.83	9.41	6.64	7.03	23.91	-18.90	33.61	1.84	5.16	5.49	09/01/2006
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	18.56	31.01	14.24	4.59	9.37	6.37	5.95	22.42	-18.20	31.65	3.91	2.60	5.96	
Difference	-1.77	-1.18	0.39	0.24	0.04	0.27	1.08	1.49	-0.70	1.96	-2.07	2.56	-0.47	

Gross of fees performance is not available (N/A) for the International Small Cap composite which currently consists of DFA Intl Sm Co;I (DFISX), DFA Emg Mkts Sm Cap;I (DEMSX), BlackRock ACWI Ex-US Small Cap (CF), Templeton Investment Counsel (SA), and American Century Investment Mgmt (SA).

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.



Montana Board of Investments
Comparative Performance
Equity Sub Composites

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Domestic Large Cap Passive - Net	13.03	23.89	21.26	15.13	15.71	13.17	14.08	30.99	-3.94	21.34	12.01	0.83	6.87	05/01/2000
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	6.77	
Difference	0.88	1.73	2.86	0.95	0.49	0.25	0.20	-0.50	0.44	-0.49	0.05	-0.55	0.10	
Domestic Large Cap Passive - Gross	13.03	23.90	21.27	15.14	15.72	13.18	14.10	31.00	-3.93	21.35	12.03	0.84	6.91	05/01/2000
IM U.S. Large Cap Index Equity (SA+CF) Median	13.44	23.45	19.98	14.43	15.35	12.91	13.88	31.42	-4.75	21.74	12.02	0.96	6.98	
Rank	54	49	20	18	24	23	21	66	20	61	49	59	54	
Domestic Large Cap Enhanced - Net	13.45	24.29	18.62	14.70	15.52	13.34	14.29	32.81	-4.20	24.21	9.73	3.18	9.77	06/01/2006
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	9.99	
Difference	1.30	2.13	0.22	0.52	0.30	0.42	0.41	1.32	0.18	2.38	-2.23	1.80	-0.22	
Domestic Large Cap Enhanced - Gross	13.54	24.47	18.97	15.02	15.83	13.66	14.62	33.17	-3.96	24.53	10.05	3.50	10.09	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	12.15	21.56	16.00	12.94	14.26	12.33	13.58	30.00	-5.15	21.84	10.54	1.43	10.10	
Rank	29	21	37	23	19	17	19	14	30	21	58	25	51	
Domestic Large Cap 130/30 - Net	16.69	24.69	22.12	14.02	14.33	12.49	13.77	30.67	-7.10	20.28	9.54	1.61	10.79	03/01/2008
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	10.73	
Difference	4.54	2.53	3.72	-0.16	-0.89	-0.43	-0.11	-0.82	-2.72	-1.55	-2.42	0.23	0.06	
Domestic Large Cap 130/30 - Gross	16.87	25.10	22.93	14.86	15.13	13.26	14.54	31.57	-6.32	21.10	10.22	2.26	11.54	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	12.15	21.56	15.79	12.92	14.25	12.33	13.57	30.00	-5.15	21.84	10.54	1.43	10.72	
Rank	8	16	21	25	36	27	19	33	71	62	55	38	20	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all composites. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Domestic Large Cap Equity														
BlackRock MSCI US Equity Index (SA) - Net	13.14	24.04	21.33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21.28	04/01/2019
MSCI US Index (USD) (Gross)	13.15	24.06	21.37	15.12	15.73	13.22	14.12	31.64	-4.50	21.90	11.61	1.32	21.33	
Difference	-0.01	-0.02	-0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.05	
BlackRock MSCI US Equity Index (SA) - Gross	13.14	24.04	21.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21.30	04/01/2019
SPDR S&P 500 ETF (SPY) - Net	12.13	22.20	19.28	14.10	N/A	N/A	N/A	31.49	-5.30	N/A	N/A	N/A	15.49	07/01/2017
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	15.55	
Difference	-0.02	0.04	0.88	-0.08	N/A	N/A	N/A	0.00	-0.92	N/A	N/A	N/A	-0.06	
Northern Trust MSCI US Index (SA) - Net	13.14	24.03	21.34	N/A	N/A	N/A	N/A	31.70	N/A	N/A	N/A	N/A	19.92	11/01/2018
MSCI US Index (USD) (Gross)	13.15	24.06	21.37	15.12	15.73	13.22	14.12	31.64	-4.50	21.90	11.61	1.32	19.92	
Difference	-0.01	-0.03	-0.03	N/A	N/A	N/A	N/A	0.06	N/A	N/A	N/A	N/A	0.00	
Northern Trust MSCI US Index (SA) - Gross	13.14	24.04	21.36	N/A	N/A	N/A	N/A	31.71	N/A	N/A	N/A	N/A	19.93	11/01/2018
IM U.S. Large Cap Core Equity (SA+CF) Median	12.15	21.56	16.00	12.94	14.26	12.33	13.58	30.00	-5.15	21.84	10.54	1.43	17.04	
Rank	32	26	26	N/A	N/A	N/A	N/A	32	N/A	N/A	N/A	N/A	24	
T. Rowe U.S. Structured Research (SA) - Net	13.45	24.29	18.62	14.70	15.67	13.37	14.27	32.81	-4.20	23.94	10.68	3.30	10.51	06/01/2006
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	9.99	
Difference	1.30	2.13	0.22	0.52	0.45	0.45	0.39	1.32	0.18	2.11	-1.28	1.92	0.52	
T. Rowe U.S. Structured Research (SA) - Gross	13.54	24.47	18.97	15.02	15.97	13.69	14.60	33.17	-3.96	24.24	10.98	3.61	10.83	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	12.15	21.56	15.79	12.92	14.25	12.33	13.57	30.00	-5.15	21.84	10.54	1.43	10.09	
Rank	29	21	37	23	17	17	19	14	30	24	46	24	24	
Jacobs Levy 130/30 (SA) - Net	20.28	24.03	17.03	N/A	N/A	N/A	N/A	31.63	N/A	N/A	N/A	N/A	13.87	04/01/2018
MSCI US Index (USD) (Gross)	13.15	24.06	21.37	15.12	15.73	13.22	14.12	31.64	-4.50	21.90	11.61	1.32	16.88	
Difference	7.13	-0.03	-4.34	N/A	N/A	N/A	N/A	-0.01	N/A	N/A	N/A	N/A	-3.01	
Jacobs Levy 130/30 (SA) - Gross	20.48	24.44	17.81	N/A	N/A	N/A	N/A	32.55	N/A	N/A	N/A	N/A	14.70	04/01/2018
IM U.S. Large Cap Core Equity (SA+CF) Median	12.15	21.56	16.00	12.94	14.26	12.33	13.58	30.00	-5.15	21.84	10.54	1.43	14.23	
Rank	2	22	45	N/A	N/A	N/A	N/A	21	N/A	N/A	N/A	N/A	46	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
J.P. Morgan 130/30 (SA) - Net	12.44	24.61	27.16	15.60	15.93	13.43	14.31	30.55	-6.93	22.86	10.30	0.01	12.01	03/01/2008
S&P 500 Index (Cap Wtd)	12.15	22.16	18.40	14.18	15.22	12.92	13.88	31.49	-4.38	21.83	11.96	1.38	10.73	
Difference	0.29	2.45	8.76	1.42	0.71	0.51	0.43	-0.94	-2.55	1.03	-1.66	-1.37	1.28	
J.P. Morgan 130/30 (SA) - Gross	12.60	25.01	28.00	16.45	16.78	14.25	15.14	31.42	-6.13	23.79	11.09	0.72	12.82	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	12.15	21.56	15.79	12.92	14.25	12.33	13.57	30.00	-5.15	21.84	10.54	1.43	10.72	
Rank	41	17	5	11	9	9	9	36	67	28	45	59	3	
Domestic Mid Cap Equity														
iShares:Core S&P Md-Cp (IJH) - Net	24.38	30.21	13.53	7.24	N/A	N/A	N/A	26.24	-13.95	N/A	N/A	N/A	9.04	07/01/2017
S&P Mid Cap 400 Index (Cap Wtd)	24.37	30.31	13.66	8.45	12.35	9.78	11.51	26.20	-11.08	16.24	20.74	-2.18	10.06	
Difference	0.01	-0.10	-0.13	-1.21	N/A	N/A	N/A	0.04	-2.87	N/A	N/A	N/A	-1.02	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Domestic Equity Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Domestic Small Cap Equity														
Vaughan Nelson Management (SA) - Net	27.97	33.93	9.83	5.88	8.85	7.60	9.97	25.34	-13.78	6.83	20.50	0.16	9.17	03/01/2007
Russell 2000 Val Index	33.36	36.77	4.63	3.72	9.65	6.25	8.66	22.39	-12.86	7.84	31.74	-7.47	5.88	
Difference	-5.39	-2.84	5.20	2.16	-0.80	1.35	1.31	2.95	-0.92	-1.01	-11.24	7.63	3.29	
Vaughan Nelson Management (SA) - Gross	28.19	34.41	10.64	6.66	9.68	8.44	10.85	26.25	-13.13	7.66	21.49	0.98	10.06	03/01/2007
IM U.S. Small Cap Value Equity (SA+CF) Median	29.84	33.93	5.20	4.43	9.66	6.92	9.97	25.07	-14.11	11.61	26.80	-4.29	7.96	
Rank	61	48	29	29	49	22	31	35	38	77	76	9	15	
BlackRock MSCI US Sm Cap Equity Index (CF) - Net	28.86	36.11	18.93	10.88	N/A	N/A	N/A	27.30	-9.96	N/A	N/A	N/A	12.46	07/01/2017
MSCI US Sm Cap Index (USD) (Net)	28.75	35.81	18.32	10.35	13.33	9.76	11.60	26.74	-10.40	16.75	19.15	-4.11	11.93	
Difference	0.11	0.30	0.61	0.53	N/A	N/A	N/A	0.56	0.44	N/A	N/A	N/A	0.53	
BlackRock MSCI US Sm Cap Equity Index (CF) - Gross	28.87	36.13	18.96	10.92	N/A	N/A	N/A	27.34	-9.93	N/A	N/A	N/A	12.50	07/01/2017
DFA US Sm Cap Tr (CF) - Net	29.24	34.36	11.65	6.02	10.65	7.80	10.80	21.66	-12.27	11.86	24.42	-2.64	11.72	03/01/2003
Russell 2000 Index	31.37	37.85	19.96	10.25	13.26	9.34	11.20	25.53	-11.01	14.65	21.31	-4.41	11.49	
Difference	-2.13	-3.49	-8.31	-4.23	-2.61	-1.54	-0.40	-3.87	-1.26	-2.79	3.11	1.77	0.23	
DFA US Sm Cap Tr (CF) - Gross	29.34	34.58	12.00	6.38	11.03	8.17	11.18	22.07	-11.95	12.25	24.85	-2.29	12.05	03/01/2003
IM U.S. Small Cap Core Equity (SA+CF) Median	28.02	34.88	17.66	10.02	13.23	9.90	11.87	25.11	-10.69	15.13	20.77	-1.36	12.83	
Rank	40	53	71	75	78	79	72	73	64	72	21	62	66	
iShares:Russ 2000 ETF (IWM) - Net	31.29	38.14	20.90	N/A	N/A	N/A	N/A	25.52	N/A	N/A	N/A	N/A	11.55	05/01/2018
Russell 2000 Index	31.37	37.85	19.96	10.25	13.26	9.34	11.20	25.53	-11.01	14.65	21.31	-4.41	11.27	
Difference	-0.08	0.29	0.94	N/A	N/A	N/A	N/A	-0.01	N/A	N/A	N/A	N/A	0.28	

Gross of fees performance is not available (N/A) for the following funds: SPDR S&P 500 ETF (SPY), iShares:Core S&P Md-Cp (IJH), and iShares:Russ 2000 ETF (IWM).

The current annual expense ratios for the SPDR S&P 500 ETF (SPY), iShares:Core S&P Md-Cp (IJH), and iShares:Russ 2000 ETF (IWM) are 0.09%, 0.05%, and 0.19%, respectively.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
International Equity Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
International Developed Large Cap Equity														
Acadian Asset Non-US Equity (SA) - Net	21.71	27.15	8.89	4.01	11.25	6.68	6.97	19.38	-13.44	34.76	12.40	-7.75	3.90	11/01/2006
MSCI ACW Ex US Val Index (USD) (Net)	20.42	23.16	-0.77	-0.41	5.70	1.71	2.78	15.72	-13.97	22.66	8.92	-10.06	2.10	
Difference	1.29	3.99	9.66	4.42	5.55	4.97	4.19	3.66	0.53	12.10	3.48	2.31	1.80	
Acadian Asset Non-US Equity (SA) - Gross	21.86	27.48	9.45	4.54	11.83	7.23	7.54	19.98	-12.99	35.45	13.01	-7.26	4.48	11/01/2006
IM ACWI Ex US Value (SA+CF) Median	19.83	27.51	6.52	4.49	8.57	4.58	5.88	21.34	-14.78	26.02	4.87	-3.25	4.61	
Rank	38	51	43	49	20	18	24	59	26	8	10	85	60	
Lazard Asset Management (SA) - Net	18.43	26.34	9.59	4.55	7.78	N/A	N/A	21.70	-14.32	27.00	0.22	N/A	5.16	06/01/2015
Lazard Custom Index	17.01	24.33	10.65	4.33	8.69	3.76	4.22	21.51	-15.55	22.66	8.92	-10.06	4.67	
Difference	1.42	2.01	-1.06	0.22	-0.91	N/A	N/A	0.19	1.23	4.34	-8.70	N/A	0.49	
Lazard Asset Management (SA) - Gross	18.57	26.65	10.14	5.08	8.34	N/A	N/A	22.31	-13.88	27.65	0.77	N/A	5.71	06/01/2015
IM ACWI Ex US Value (SA+CF) Median	19.83	27.51	6.52	4.49	8.57	4.58	5.88	21.34	-14.78	26.02	4.87	-3.25	5.53	
Rank	56	54	40	43	52	N/A	N/A	43	35	38	86	N/A	49	
BlackRock ACW Ex US SuperFund A (CF) - Net	17.03	24.33	10.81	5.09	9.16	5.04	5.13	21.77	-13.99	27.49	4.77	-5.49	7.28	06/01/2009
MSCI ACW Ex US Index (USD) (Net)	17.01	24.33	10.65	4.88	8.93	4.82	4.92	21.51	-14.20	27.19	4.50	-5.66	7.07	
Difference	0.02	0.00	0.16	0.21	0.23	0.22	0.21	0.26	0.21	0.30	0.27	0.17	0.21	
BlackRock ACW Ex US SuperFund A (CF) - Gross	17.05	24.37	10.89	5.16	9.24	5.11	5.21	21.85	-13.93	27.58	4.86	-5.42	7.36	06/01/2009
IM All ACWI Ex US (SA+CF) Median	16.77	26.90	13.90	6.77	9.78	6.15	7.03	24.92	-14.64	28.74	2.11	-0.59	9.01	
Rank	48	68	59	64	56	66	86	65	43	62	25	84	86	
iShares:MSCI EAFE ETF (EFA) - Net	15.72	20.99	7.71	4.62	N/A	N/A	N/A	22.03	-12.88	N/A	N/A	N/A	6.55	07/01/2017
MSCI EAFE Index (USD) (Net)	16.05	21.61	7.82	4.28	7.45	4.39	5.51	22.01	-13.79	25.03	1.00	-0.81	6.48	
Difference	-0.33	-0.62	-0.11	0.34	N/A	N/A	N/A	0.02	0.91	N/A	N/A	N/A	0.07	
Baillie Gifford (SA) - Net	17.14	33.08	34.22	14.22	14.66	N/A	N/A	34.34	-17.35	31.99	0.73	N/A	11.54	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	13.92	25.49	22.20	10.02	11.97	7.80	6.94	27.34	-14.43	32.01	0.12	-1.25	8.85	
Difference	3.22	7.59	12.02	4.20	2.69	N/A	N/A	7.00	-2.92	-0.02	0.61	N/A	2.69	
Baillie Gifford (SA) - Gross	17.27	33.39	34.86	14.78	15.23	N/A	N/A	34.99	-16.93	32.66	1.28	N/A	12.10	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	15.42	27.53	22.91	11.32	13.06	8.83	8.92	29.56	-13.78	32.56	-0.76	1.29	9.90	
Rank	27	8	13	17	22	N/A	N/A	9	85	49	33	N/A	23	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.



Montana Board of Investments
Comparative Performance
International Equity Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Invesco (SA) - Net	14.07	24.96	14.84	8.00	9.56	N/A	N/A	29.29	-15.17	24.92	0.32	N/A	6.82	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	13.92	25.49	22.20	10.02	11.97	7.80	6.94	27.34	-14.43	32.01	0.12	-1.25	8.85	
Difference	0.15	-0.53	-7.36	-2.02	-2.41	N/A	N/A	1.95	-0.74	-7.09	0.20	N/A	-2.03	
Invesco (SA) - Gross	14.23	25.31	15.51	8.64	10.24	N/A	N/A	30.05	-14.64	25.70	1.01	N/A	7.49	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	15.42	27.53	22.91	11.32	13.06	8.83	8.92	29.56	-13.78	32.56	-0.76	1.29	9.90	
Rank	67	71	88	75	84	N/A	N/A	44	56	91	36	N/A	85	
International Developed Small Cap Equity														
American Century Investment Mgmt (SA) - Net	16.66	29.67	31.60	10.51	12.94	N/A	N/A	29.44	-20.76	43.80	-5.31	11.32	9.33	03/01/2014
MSCI ACW Ex US Sm Cap Grth Index (USD) (Net)	16.16	31.35	23.69	8.00	10.92	8.09	6.97	24.61	-18.27	33.64	-0.28	6.50	7.74	
Difference	0.50	-1.68	7.91	2.51	2.02	N/A	N/A	4.83	-2.49	10.16	-5.03	4.82	1.59	
American Century Investment Mgmt (SA) - Gross	16.90	30.20	32.68	11.43	13.89	N/A	N/A	30.50	-20.09	44.99	-4.49	12.25	10.25	03/01/2014
IM ACWI Ex US Growth (SA+CF) Median	15.42	27.53	22.91	11.32	13.06	8.83	8.92	29.56	-13.78	32.56	-0.76	1.29	8.98	
Rank	32	28	26	49	29	N/A	N/A	42	100	6	79	1	28	
BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Net	18.48	30.94	14.46	4.88	9.68	6.65	N/A	22.68	-17.85	31.96	4.26	2.87	8.39	02/01/2012
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	18.56	31.01	14.24	4.59	9.37	6.37	5.95	22.42	-18.20	31.65	3.91	2.60	8.14	
Difference	-0.08	-0.07	0.22	0.29	0.31	0.28	N/A	0.26	0.35	0.31	0.35	0.27	0.25	
BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Gross	18.51	31.02	14.51	5.00	9.82	6.81	N/A	22.90	-17.74	32.15	4.44	3.04	8.55	02/01/2012
DFA Intl Sm Co;l (DFISX) - Net	17.96	29.37	9.24	3.03	8.53	5.91	6.71	24.21	-19.41	30.24	5.74	5.89	7.90	11/01/2004
MSCI Wrld Ex US Sm Cap Index (USD) (Net)	17.55	29.45	12.78	5.04	9.63	6.76	6.98	25.41	-18.07	31.04	4.32	5.46	7.75	
Difference	0.41	-0.08	-3.54	-2.01	-1.10	-0.85	-0.27	-1.20	-1.34	-0.80	1.42	0.43	0.15	
Templeton Investment Counsel (SA) - Net	14.65	29.82	9.98	3.64	7.93	N/A	N/A	24.17	-18.48	33.07	-1.13	1.81	5.38	03/01/2014
Templeton Custom Index	18.56	31.01	14.24	3.92	9.52	5.82	5.73	22.42	-19.75	29.72	8.24	-1.25	5.49	
Difference	-3.91	-1.19	-4.26	-0.28	-1.59	N/A	N/A	1.75	1.27	3.35	-9.37	3.06	-0.11	
Templeton Investment Counsel (SA) - Gross	14.88	30.35	10.91	4.52	8.86	N/A	N/A	25.20	-17.78	34.21	-0.23	2.73	6.30	03/01/2014
IM ACWI Ex US Value (SA+CF) Median	19.83	27.51	6.52	4.49	8.57	4.58	5.88	21.34	-14.78	26.02	4.87	-3.25	4.67	
Rank	87	31	34	50	46	N/A	N/A	26	84	8	89	9	25	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.

Montana Board of Investments
Comparative Performance
International Equity Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
International Emerging Equity														
BlackRock MSCI Emg Mkts Index NL (CF) - Net	19.49	30.76	17.93	5.92	12.54	5.90	N/A	18.12	-14.69	37.05	10.85	-15.15	4.95	02/01/2012
MSCI Emg Mkts Index (USD) (Net)	19.70	31.14	18.31	6.17	12.81	6.17	3.63	18.44	-14.58	37.28	11.19	-14.92	5.21	
Difference	-0.21	-0.38	-0.38	-0.25	-0.27	-0.27	N/A	-0.32	-0.11	-0.23	-0.34	-0.23	-0.26	
BlackRock MSCI Emg Mkts Index NL (CF) - Gross	19.52	30.83	18.05	6.04	12.68	6.05	N/A	18.25	-14.60	37.16	11.08	-14.99	5.12	02/01/2012
iShares:MSCI Em Mkts (EEM) - Net	18.38	30.43	16.99	4.91	N/A	N/A	N/A	18.12	-16.45	36.86	N/A	N/A	12.12	01/01/2017
MSCI Emg Mkts Index (USD) (Net)	19.70	31.14	18.31	6.17	12.81	6.17	3.63	18.44	-14.58	37.28	11.19	-14.92	13.22	
Difference	-1.32	-0.71	-1.32	-1.26	N/A	N/A	N/A	-0.32	-1.87	-0.42	N/A	N/A	-1.10	
DFA Emg Mkts Sm Cap;I (DEMSX) - Net	19.42	31.41	13.79	2.53	N/A	N/A	N/A	14.88	-17.56	N/A	N/A	N/A	8.52	02/01/2017
MSCI Emg Mkts Sm Cap Index (USD) (Net)	22.22	36.70	19.29	2.69	8.19	4.87	2.29	11.51	-18.59	33.84	2.28	-6.85	8.66	
Difference	-2.80	-5.29	-5.50	-0.16	N/A	N/A	N/A	3.37	1.03	N/A	N/A	N/A	-0.14	

Gross of fees performance is not available (N/A) for the following funds: iShares:MSCI EAFE ETF (EFA), International Equity Pool STIF, DFA Intl Sm Co;I (DFISX), iShares:MSCI Em Mkts (EEM), and DFA Emg Mkts Sm Cap;I (DEMSX).

The current annual expense ratios for the iShares:MSCI EAFE ETF (EFA), DFA Intl Sm Co;I (DFISX), iShares:MSCI Em Mkts (EEM), and DFA Emg Mkts Sm Cap;I (DEMSX) are 0.32%, 0.52%, 0.68%, and 0.67%, respectively.

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. A peer group of similar managers may not exist for all funds. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences. See the Addendum for custom index specification.

Montana Board of Investments
Comparative Performance
Core Fixed Income Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
US Fixed Income Aggregate - Net	0.24	1.01	7.65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.97	12/01/2019
Bloomberg US Agg Bond Index	0.67	1.29	7.51	5.34	4.44	4.09	3.84	8.72	0.01	3.54	2.65	0.55	6.84	
Difference	-0.43	-0.28	0.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13	
TIPS Portfolio (Internal) - Net	1.84	4.72	9.47	5.36	N/A	N/A	N/A	6.96	-0.13	N/A	N/A	N/A	4.50	04/01/2017
Bloomberg US Trsy Infl Notes 1-10 Yr Index	1.60	4.15	8.39	4.93	4.13	2.99	2.88	6.85	-0.25	1.90	4.01	-0.52	4.15	
Difference	0.24	0.57	1.08	0.43	N/A	N/A	N/A	0.11	0.12	N/A	N/A	N/A	0.35	
Reams Asset Core Plus (SA) - Net	1.82	3.82	17.14	8.65	6.64	5.36	5.26	8.08	1.31	3.21	4.18	0.07	6.42	10/01/2008
Reams Custom Index	1.29	2.29	7.58	5.36	4.76	4.24	4.11	8.72	0.01	3.83	3.91	0.43	4.86	
Difference	0.53	1.53	9.56	3.29	1.88	1.12	1.15	-0.64	1.30	-0.62	0.27	-0.36	1.56	
Reams Asset Core Plus (SA) - Gross	1.86	3.91	17.35	8.85	6.83	5.55	5.45	8.28	1.49	3.38	4.35	0.24	6.60	10/01/2008
IM U.S. Broad Market Core+ FI (SA+CF) Median	2.05	3.75	8.97	6.18	5.67	4.88	4.87	9.83	-0.28	4.81	4.68	0.31	6.04	
Rank	55	46	1	2	15	12	24	91	4	95	58	53	27	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Non-Core Fixed Income Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Neuberger Berman High Yield (SA) - Net	5.80	10.93	6.30	5.82	7.59	4.99	6.22	13.75	-1.99	5.80	14.98	-4.32	7.09	01/01/2010
Bloomberg US HY 2% Issuer Cap Index	6.44	11.32	7.05	6.21	8.57	5.73	6.79	14.32	-2.08	7.50	17.13	-4.43	7.51	
Difference	-0.64	-0.39	-0.75	-0.39	-0.98	-0.74	-0.57	-0.57	0.09	-1.70	-2.15	0.11	-0.42	
Neuberger Berman High Yield (SA) - Gross	5.90	11.15	6.75	6.29	8.06	5.45	6.69	14.26	-1.56	6.27	15.50	-3.89	7.57	01/01/2010
IM U.S. High Yield Bonds (SA+CF) Median	5.95	10.88	6.54	5.89	8.03	5.63	6.74	14.17	-1.64	7.49	14.07	-2.11	7.49	
Rank	54	47	44	39	50	58	54	50	49	79	33	74	47	
Oaktree US High Yield (SA) (CAPP) - Net	6.09	10.85	6.56	5.70	N/A	N/A	N/A	15.44	-3.99	N/A	N/A	N/A	5.70	01/01/2018
Bloomberg US HY 2% Issuer Cap Index	6.44	11.32	7.05	6.21	8.57	5.73	6.79	14.32	-2.08	7.50	17.13	-4.43	6.21	
Difference	-0.35	-0.47	-0.49	-0.51	N/A	N/A	N/A	1.12	-1.91	N/A	N/A	N/A	-0.51	
Oaktree US High Yield (SA) (CAPP) - Gross	6.22	11.13	7.07	6.24	N/A	N/A	N/A	16.02	-3.47	N/A	N/A	N/A	6.24	01/01/2018
IM U.S. High Yield Bonds (SA+CF) Median	5.95	10.88	6.54	5.89	8.03	5.64	6.74	14.17	-1.66	7.49	14.07	-2.11	5.89	
Rank	41	47	39	41	N/A	N/A	N/A	15	92	N/A	N/A	N/A	41	
Shenkman High Yield Fixed Income (SA) (CAPP) - Net	5.67	9.83	6.32	5.81	N/A	N/A	N/A	13.65	-1.96	N/A	N/A	N/A	5.52	12/01/2017
Bloomberg US HY 2% Issuer Cap Index	6.44	11.32	7.05	6.21	8.57	5.73	6.79	14.32	-2.08	7.50	17.13	-4.43	6.15	
Difference	-0.77	-1.49	-0.73	-0.40	N/A	N/A	N/A	-0.67	0.12	N/A	N/A	N/A	-0.63	
Shenkman High Yield Fixed Income (SA) (CAPP) - Gross	5.79	10.08	6.82	6.32	N/A	N/A	N/A	14.18	-1.46	N/A	N/A	N/A	6.02	12/01/2017
IM U.S. High Yield Bonds (SA+CF) Median	5.95	10.88	6.54	5.89	8.03	5.64	6.74	14.17	-1.66	7.49	14.07	-2.11	5.83	
Rank	55	68	43	36	N/A	N/A	N/A	50	46	N/A	N/A	N/A	46	
Cohen & Steers Preferred Securities (SA) - Net	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.62	11/01/2020
Cohen & Steers Preferred Securities Custom Benchmark	4.08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.08	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.54	
Cohen & Steers Preferred Securities (SA) - Gross	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.69	11/01/2020
Payden & Rygel EMD (SA) - Net	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2021
Payden & Rygel EMD Custom Benchmark	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Payden & Rygel EMD (SA) - Gross	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2021

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
TFIP Fixed Income Managers

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Trust Funds Investment Pool Fixed Income	0.98	2.29	8.84	5.99	5.04	4.72	4.59	9.12	0.25	3.83	3.44	1.03	6.09	10/01/1995
Bloomberg US Agg Bond Index	0.67	1.29	7.51	5.34	4.44	4.09	3.84	8.72	0.01	3.54	2.65	0.55	5.28	
Difference	0.31	1.00	1.33	0.65	0.60	0.63	0.75	0.40	0.24	0.29	0.79	0.48	0.81	
Trust Funds Investment Pool Fixed Income	0.98	2.29	8.84	5.99	5.04	4.72	4.59	9.12	0.25	3.83	3.44	1.03	6.09	10/01/1995
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	1.13	2.22	8.60	5.88	5.04	4.58	4.41	9.18	0.07	4.03	3.10	0.82	5.67	
Rank	58	47	40	41	51	37	32	54	32	62	42	28	10	
Shenkman High Yield Fixed Income (SA) (TFIP) - Net	5.66	9.81	6.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.73	07/01/2019
Bloomberg US HY 2% Issuer Cap Index	6.44	11.32	7.05	6.21	8.57	5.73	6.79	14.32	-2.08	7.50	17.13	-4.43	7.41	
Difference	-0.78	-1.51	-1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.68	
Shenkman High Yield Fixed Income (SA) (TFIP) - Gross	5.79	10.07	6.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.23	07/01/2019
IM U.S. High Yield Bonds (SA+CF) Median	5.95	10.88	6.54	5.89	8.03	5.64	6.74	14.17	-1.66	7.49	14.07	-2.11	7.07	
Rank	55	68	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	47	
Oaktree US High Yield (SA) (TFIP) - Net	6.13	10.81	6.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.76	08/01/2019
Bloomberg US HY 2% Issuer Cap Index	6.44	11.32	7.05	6.21	8.57	5.73	6.79	14.32	-2.08	7.50	17.13	-4.43	7.43	
Difference	-0.31	-0.51	-0.33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.33	
Oaktree US High Yield (SA) (TFIP) - Gross	6.26	11.08	7.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.29	08/01/2019
IM U.S. High Yield Bonds (SA+CF) Median	5.95	10.88	6.54	5.89	8.03	5.64	6.74	14.17	-1.66	7.49	14.07	-2.11	7.17	
Rank	40	48	35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22	
Neuberger Berman High Yield (SA) (TFIP) - Net	5.95	11.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19.97	04/01/2020
Bloomberg US HY 2% Issuer Cap Index	6.44	11.32	7.05	6.21	8.57	5.73	6.79	14.32	-2.08	7.50	17.13	-4.43	22.60	
Difference	-0.49	-0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.63	
Neuberger Berman High Yield (SA) (TFIP) - Gross	6.06	11.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20.34	04/01/2020
IM U.S. High Yield Bonds (SA+CF) Median	5.95	10.88	6.54	5.89	8.03	5.64	6.74	14.17	-1.66	7.49	14.07	-2.11	21.17	
Rank	44	41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	

Net performance shown is net of all manager fees and expenses (Net-All). Gross returns are compared to median performance of similar managers. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Trust Accounts

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Abandoned Mine Trust	0.06	0.15	0.73	1.66	1.42	1.36	1.44	2.41	1.85	1.04	1.10	0.90	3.87	12/01/1993
Barker Hughesville St Response	0.77	1.59	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.44	05/01/2020
Belt Water Treatment Plant Fund	0.77	1.65	6.80	N/A	N/A	N/A	N/A	8.56	N/A	N/A	N/A	N/A	6.12	03/01/2018
Big Sky Economic Development Fund	0.82	1.74	7.12	5.36	4.80	4.65	4.70	8.67	0.48	3.97	3.98	1.82	5.10	07/01/2005
Butte Area One Restoration	0.68	1.44	6.07	4.66	3.90	3.46	3.24	6.76	1.24	2.92	2.60	1.20	3.61	11/01/2008
Clark Fork River Restoration	0.67	1.40	5.65	4.52	3.82	3.53	3.42	7.04	0.96	2.85	2.72	1.37	3.89	11/01/2008
Coal Tax Cultural Trust Fund	0.81	1.72	6.99	5.31	4.77	4.62	4.68	8.64	0.47	3.96	3.95	1.79	6.09	12/01/1993
Coal Tax Park Acquisition	0.78	1.67	6.86	5.26	4.73	4.57	4.65	8.63	0.48	3.96	3.90	1.78	6.06	12/01/1993
East Helena Compensation Fund	0.18	0.43	2.65	3.11	2.80	2.56	N/A	5.52	1.20	2.56	2.12	0.91	2.22	01/01/2013
Endowment for Children	0.82	1.75	7.01	5.28	4.68	4.53	4.59	8.54	0.46	3.89	3.66	1.70	5.16	08/01/2007
Flying J CECRA Facilities Fund	0.79	1.68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.50	05/01/2020
FWP License Account	0.37	0.58	1.85	2.22	1.72	1.40	1.29	3.33	1.50	1.11	0.84	0.61	2.93	11/01/1997
FWP Mitigation Trust Fund	0.58	1.06	3.84	3.46	2.43	2.06	1.93	5.46	1.14	1.15	0.67	0.87	3.92	12/01/1993
FWP Real Property Trust	0.79	1.67	6.83	5.26	4.68	4.50	4.54	8.62	0.51	3.80	3.82	1.73	5.46	12/01/1993
Group Benefits	0.20	0.43	2.05	2.47	1.97	1.73	1.60	4.01	1.37	1.30	1.16	1.06	3.85	12/01/1993
Harold Hamm Endowment	0.77	1.64	6.71	5.19	N/A	N/A	N/A	8.45	0.57	1.11	N/A	N/A	3.76	07/01/2016
Libby Asbestos Site State Cost	0.75	1.65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.48	05/01/2020
Luttrell Pit - Operational & Maintenance	0.76	1.55	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.38	05/01/2020
Montana Pole	0.63	1.34	5.61	4.57	4.06	3.90	3.91	7.48	0.74	3.38	3.23	1.56	5.17	09/01/1996
Montana State University	0.13	0.31	1.30	2.01	1.68	1.37	1.20	2.87	1.87	1.39	0.95	0.39	2.02	08/01/2004
Montana Tech-UM Agency Funds	0.10	0.22	1.01	1.83	1.48	1.15	0.94	2.56	1.91	1.22	0.72	0.27	1.80	03/01/2003
MT BOI - Clark Fork Site	0.78	1.64	6.65	5.06	4.48	4.19	4.06	8.00	0.67	3.64	3.63	1.56	4.56	11/01/2008
MT BOI UOFM Other	0.33	1.12	3.47	3.14	2.78	2.51	2.22	4.54	1.42	2.15	2.34	1.13	3.03	08/01/2002
MUS Group Insurance	0.17	0.38	1.70	2.35	1.89	1.71	N/A	3.39	1.96	1.09	1.33	1.26	1.50	10/01/2011
MUS Workers Compensation	0.28	0.61	2.55	2.86	N/A	N/A	N/A	4.43	1.62	1.80	N/A	N/A	2.24	04/01/2016

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Montana Board of Investments
Comparative Performance
Trust Accounts

As of December 31, 2020

	QTD	FYTD	CYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Older Montanans Trust	0.82	1.72	7.19	5.37	4.77	4.58	4.36	8.62	0.49	3.87	3.86	1.72	5.01	08/01/2007
Permanent Coal Trust Excl Crp	0.72	1.46	5.57	4.53	4.17	4.17	4.35	6.81	1.28	3.49	3.79	2.23	5.74	12/01/1993
PERS Defined Cont Disability	10.84	17.13	14.06	9.43	9.20	N/A	N/A	20.77	-4.88	14.57	3.42	N/A	8.62	09/01/2015
Potter Trust Fund	0.78	1.68	6.78	5.20	N/A	N/A	N/A	8.47	0.51	3.87	N/A	N/A	4.26	06/01/2016
Resource Indemnity Trust	0.84	1.77	7.23	5.45	4.87	4.72	4.76	8.88	0.44	4.01	4.02	1.82	6.17	12/01/1993
School Facilities Fund	0.81	1.72	6.97	4.85	N/A	N/A	N/A	7.88	-0.13	N/A	N/A	N/A	4.85	01/01/2018
Smelter Hill Up Restorative	0.72	1.46	5.62	4.26	3.28	2.82	2.50	5.64	1.57	1.85	1.79	0.92	2.59	11/01/2008
State Fund Insurance	2.31	4.05	7.62	5.81	5.19	4.73	4.87	9.65	0.38	5.05	3.50	2.21	5.69	12/01/1993
Streamside Tailings Operable Unit	0.75	1.60	6.47	4.94	4.41	4.28	4.29	7.92	0.57	3.69	3.58	1.69	5.42	02/01/1999
Subsequent Injury Fund	0.06	0.15	0.73	1.66	1.34	1.00	0.81	2.28	1.98	1.11	0.61	0.22	2.99	12/01/1993
Tobacco Trust Fund	0.82	1.75	7.10	5.35	4.80	4.66	4.71	8.67	0.46	3.96	3.99	1.82	5.73	01/01/2001
Treasurers	0.05	0.12	0.63	1.62	1.32	1.01	0.79	2.28	1.97	1.07	0.68	0.27	2.83	12/01/1993
Treasure State Endowment	0.83	1.75	7.15	5.41	4.84	4.69	4.73	8.81	0.46	4.00	3.98	1.82	6.04	12/01/1993
Treasure State Reg. Water System	0.83	1.75	7.15	5.41	4.83	4.67	4.72	8.80	0.45	4.00	3.96	1.82	5.87	06/01/2000
Trust and Legacy Account	0.83	1.77	7.19	5.42	4.85	4.71	4.73	8.84	0.43	4.00	4.01	1.82	6.74	07/01/1991
UCFRB Assess/Litig Cost Rec	0.76	1.63	6.68	5.17	4.62	4.44	4.40	8.50	0.49	3.77	3.84	1.65	5.77	07/01/1999
UCFRB Restoration Fund	0.80	1.68	6.90	5.31	4.63	4.44	4.48	8.52	0.67	3.73	3.52	1.70	5.69	06/01/1999
Upper Blackfoot Response	0.13	0.31	1.55	2.42	2.18	1.90	1.73	4.24	1.49	1.90	1.74	0.84	1.67	09/01/2010
Weed Control Trust	0.84	1.77	7.23	5.45	4.88	4.72	4.68	8.88	0.44	4.01	4.02	1.82	5.34	12/01/1993
Wildlife Habitat Trust	0.77	1.65	6.75	5.21	4.64	4.48	4.51	8.54	0.51	3.78	3.79	1.73	5.47	12/01/1993
Zortman/Landusky LT H2O	0.06	0.15	0.73	1.66	1.47	1.42	2.56	2.28	1.98	1.01	1.36	0.84	6.28	09/01/1999
Z/L Long Term H2O Trust Fund	0.06	0.15	0.73	1.66	1.49	1.48	2.45	2.28	1.98	1.08	1.39	1.15	4.16	09/01/2005

Performance shown is gross of fees. Fiscal year ends on 06/30. Since inception performance may vary from State Street reported performance due to calculation methodology differences.

Performance Notes

- All gross and net performance data is provided by State Street Analytics (SSA). Reported gross returns for the retirement plans prior to 07/01/2002 are net of all fees.
- Gross performance for the retirement plans is calculated with fee accruals provided by Montana's Accounting department.
- Gross of fees performance is not available (N/A) for the following funds: SPDR S&P 500 ETF (SPY), Domestic Equity Pool STIF, iShares:Core S&P Md-Cp (IJH), iShares:Russ 2000 ETF (IWM), DFA Intl Sm Co;I (DFISX), iShares:MSCI EAFE ETF (EFA), International Equity Pool STIF, iShares:MSCI Em Mkts (EEM), and DFA Emg Mkts Sm Cap;I (DEMSX). The current annual expense ratios are as listed below.

Index Notes

- Retirement plan custom benchmarks are provided by State Street Bank and are calculated daily using actual allocations.
- The CAPP Custom Benchmark consists of the portfolio weighted average of the primary benchmark for each CAPP asset class.
- The Short Term Custom Benchmark consists of 100% ICE 1 Mo LIBOR Index (USD) through 4/30/2018, and 100% Federal Reserve US Treasury 1 Mo Constant Maturity Index thereafter.
- The Domestic Equity Custom Index consists of 100% S&P 1500 Comp Index through 04/30/2017 and 100% MSCI USA IM Index (USD) (Gross) thereafter.
- The International Equity Custom Index consists of 100% MSCI EAFE Index (USD) (Net) through 10/31/2006, 100% MSCI ACW Ex US Index (USD) (Net) through 06/30/2007, 92.5% MSCI ACW Ex US Index (USD) (Net) and 7.5% MSCI ACW Ex US SC IM Index (USD) (Net) through 02/28/2014, and 100% MSCI ACW Ex-US IM Index thereafter.
- The Real Estate Custom Index consists of 100% NCREIF ODCE Index (AWA) (Net) (1 Qtr Lag) through 03/31/2017, 100% MSCI US REIT Index (USD) (Gross) through 06/30/2020, and 100% NCREIF ODCE Value Weighted (1 Qtr Lag) Index thereafter.
- The Private Equity Custom Index consists of 100% S&P 1500 Comp Index+4% (1 Qtr Lag) through 04/30/2017 and 100% MSCI US Small Cap Index (USD) (Gross) thereafter.
- The Lazard Custom Index consists of 100% MSCI ACW Ex US Value Index (USD) (Net) through 6/30/2018 and 100% MSCI ACW Ex US Index (USD) (Net) thereafter.
- The Templeton Custom Index consists of 100% MSCI ACW Ex US Small Cap Value Index (USD) (Net) through 5/31/2018, and 100% MSCI ACW Ex US Small Cap Index (USD) (Net) thereafter.
- The Reams Custom Index consists of 100% Bloomberg US Unv Bond Index through 03/31/2017, 100% Bloomberg US Agg Bond Index through 12/31/2019, and 100% Bloomberg US Unv Bond Index thereafter.
- The Cohen & Steers Custom Index consists of 60% ICE BofAML US IG Institutional Capital Securities Index, 20% ICE BofAML Core Fixed Rate Preferred Securities Index, and 20% Bloomberg Barclays Developed Market USD Contingent Capital Index.
- The Payden & Rygel Custom Index consists of 70% JP Morgan EMBI Global Diversified Index, 30% JP Morgan GBI-EM Global Diversified Index.

Trust Accounts Comments

- Barker Hughesville St Response, Libby Asbestos Site State Cost, Flying J CECRA Facilities Fund, and Luttrell Pit - Operations and Maintenance were added in 05/2020.
- The Belt Water Treatment Plant Fund was added in 03/2018.
- The School Facilities Fund was added in 01/2018.
- The Potter Trust Fund and the Harold Hamm Endowment were added in 06/2016.
- MUS Workers Compensation was added in 04/2016.

Manager Transition Comments

- Neuberger Berman High Yield (SA) and TFIP Private Real Estate were funded in the Trust Fund Investment Pool during Q1 2020.
- Post High Yield Plus (SA), GMO:Bchmk-Fr All;III (GBMFX), and PIMCO:All Asset;Inst (PAAIX) were liquidated during Q3 2019.
- Oaktree US High Yield Fixed Income (SA) and Shenkman High Yield Fixed Income (SA) were funded in the Trust Fund Investment Pool during Q3 2019.
- Artisan Partners (SA), Iridian Asset Management (SA), Congress Mid Cap Growth (SA), TimeSquare Capital Management (SA), and Alliance Bernstein (SA) were liquidated in Q2 2019.
- BlackRock MSCI US Equity Index (CF) was transitioned into a separately managed account during Q1 2019.
- Northern Trust MSCI US Equity Index (SA), GMO:Bchmk-Fr All;III (GBMFX), and PIMCO:All Asset;Inst (PAAIX) were funded during Q4 2018.
- Voya Investment Management (SA) was liquidated in 07/2018.
- iShares:Russ 2000 ETF (IWM) was funded in 04/2018.
- Jacobs Levy 130/30 Large Cap (SA) was funded in 03/2018.
- Congress Mid Cap Growth (SA) was funded in 02/2018.
- Oaktree US High Yield (SA) and Shenkman High Yield Fixed Income (SA) were funded in 12/2017.
- Analytic Investors 130/30 (SA) was liquidated in 09/2017.
- BlackRock MSCI US Equity Index (CF), BlackRock MSCI US Sm Cap Equity Index (CF), and iShares:Core S&P Md-Cp (IJH) were funded in 06/2017.
- SPDR S&P 500 ETF (SPY) and iShares:MSCI EAFE ETF (EFA) were re-funded in 06/2017.

Addendum

- INTECH Enhanced Plus was liquidated in 06/2017.
- Residual assets from the liquidation of AllianceBernstein Int'l Value (SA), Martin Currie (SA), Hansberger Global Investors (SA), and Aberdeen Total Return Bond Strategy (SA) were distributed in 06/2017.
- BlackRock Equity Index Fund A (CF) and BlackRock Mid Cap Equity Index A (CF) were liquidated in 05/2017.

Manager Transition Comments (cont.)

- DFA Emg Mkts Sm Cap;I (DEMSX) was funded in 02/2017.
- SPDR S&P 500 ETF (SPY) was liquidated in 01/2017.
- iShares:MSCI Em Mkts (EEM) was funded in 12/2016.
- SPDR S&P 500 ETF (SPY) was initially funded in 09/2015, was then liquidated in 12/2015, and was re-funded in 10/2016.
- Wells Capital Management (SA), Domestic Equity Pool SPIF, and International Equity Pool SPIF were liquidated in 10/2016. Wells Capital Management (SA) residual assets from liquidation were distributed in 03/2017.
- Nicholas Investment Partners was liquidated in 07/2016. Residual assets from liquidation were distributed in 03/2017.
- Effective 07/2016, the Metropolitan West Capital Management legal entity merged into the Wells Capital Management Incorporated legal entity. The Metropolitan West Capital Mgmt (SA) has been updated to Wells Capital Management (SA) to reflect the change.
- iShares S&P SmallCap 600 Index ETF (IJR) was liquidated in 01/2016.
- Effective 05/2014, ING rebranded to Voya. The ING Investment Management (SA) has been updated to Voya Investment Management (SA) to reflect the change.
- Cohen & Steers Preferred Securities (SA) was funded in 10/2020.
- Payden & Rygel EMD (SA) was funded in 12/2020.

Miscellaneous Comments

- Fiscal year ends on 06/30.
- During Q4 2019 Diversifying Strategies investments were liquidated and Investment Grade Credit, US Treasury & Agency, and TIPS were consolidated into the Core Fixed Income composite.
- Non-Core Fixed Income currently consists of High Yield.
- Private Investments currently consist of Private Equity, Private Credit, Venture Capital, and Passive ETFs.

**Montana Board of Investments
Fee Schedule**

As of December 31, 2020

	Fee Schedule	Market Value As of 12/31/2020 (\$)
SPDR S&P 500 ETF (SPY)	0.09 % of Assets	92,398,078
iShares:Core S&P Md-Cp (IJH)	0.05 % of Assets	33,423,487
iShares:Russ 2000 ETF (IWM)	0.19 % of Assets	980
iShares:MSCI EAFE ETF (EFA)	0.32 % of Assets	151,319,040
DFA Intl Sm Co;I (DFISX)	0.52 % of Assets	103,612,379
iShares:MSCI Em Mkts (EEM)	0.68 % of Assets	60,469,401
DFA Emg Mkts Sm Cap;I (DEMSX)	0.67 % of Assets	32,237,152

ETF fees are sourced from Morningstar and/or the investment manager. Mutual Fund fees are provided by staff.

PORTLAND

BOISE

CHICAGO

NEW YORK

Disclaimer of Warranties and Limitation of Liability - This document was prepared by RVK, Inc. (RVK) and may include information and data from some or all of the following sources: client staff; custodian banks; investment managers; specialty investment consultants; actuaries; plan administrators/record-keepers; index providers; as well as other third-party sources as directed by the client or as we believe necessary or appropriate. RVK has taken reasonable care to ensure the accuracy of the information or data, but makes no warranties and disclaims responsibility for the accuracy or completeness of information or data provided or methodologies employed by any external source. This document is provided for the client's internal use only and does not constitute a recommendation by RVK or an offer of, or a solicitation for, any particular security and it is not intended to convey any guarantees as to the future performance of the investment products, asset classes, or capital markets.

