



Quarterly Investment Performance Analysis

Montana Board of Investments

Period Ended: June 30, 2018



Montana Board of Investments
Comparative Performance
Retirement Plans

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Public Employees' Retirement - Net	1.60	1.71	8.84	7.54	8.79	8.45	6.76	6.11	14.80	7.32	1.86	8.07	17.38	7.74	07/01/1994
Public Employees' Benchmark	2.59	1.30	9.18	7.92	9.33	8.96	N/A	N/A	15.35	9.09	1.40	9.08	17.94	N/A	
Difference	-0.99	0.41	-0.34	-0.38	-0.54	-0.51	N/A	N/A	-0.55	-1.77	0.46	-1.01	-0.56	N/A	
Public Employees' Retirement - Gross	1.77	2.04	9.46	8.05	9.31	8.98	7.31	6.46	15.34	7.78	2.31	8.61	17.96	8.03	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	28	10	5	2	8	65	64	58	5	7	7	67	
Teachers' Retirement - Net	1.60	1.71	8.82	7.53	8.79	8.45	6.76	6.12	14.76	7.33	1.86	8.09	17.38	7.76	07/01/1994
Teachers' Benchmark	2.59	1.30	9.16	7.91	9.32	8.95	N/A	N/A	15.32	9.08	1.40	9.11	17.94	N/A	
Difference	-0.99	0.41	-0.34	-0.38	-0.53	-0.50	N/A	N/A	-0.56	-1.75	0.46	-1.02	-0.56	N/A	
Teachers' Retirement - Gross	1.78	2.04	9.44	8.04	9.31	8.98	7.32	6.46	15.31	7.80	2.32	8.63	17.96	8.05	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	31	10	5	2	8	61	65	58	5	7	7	66	
Police Retirement - Net	1.60	1.70	8.83	7.53	8.79	8.44	6.74	6.03	14.79	7.32	1.86	8.07	17.41	7.60	07/01/1994
Police Benchmark	2.59	1.30	9.16	7.92	9.32	8.94	N/A	N/A	15.33	9.08	1.41	9.10	17.92	N/A	
Difference	-0.99	0.40	-0.33	-0.39	-0.53	-0.50	N/A	N/A	-0.54	-1.76	0.45	-1.03	-0.51	N/A	
Police Retirement - Gross	1.77	2.04	9.45	8.05	9.31	8.97	7.29	6.37	15.33	7.78	2.31	8.61	18.00	7.89	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	30	10	5	3	9	78	64	58	5	7	7	78	

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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Firefighters' Retirement - Net	1.60	1.70	8.83	7.54	8.79	8.44	6.76	6.04	14.79	7.32	1.87	8.07	17.41	7.59	07/01/1994
Firefighters' Benchmark	2.59	1.30	9.16	7.92	9.32	8.94	N/A	N/A	15.33	9.09	1.41	9.10	17.92	N/A	
Difference	-0.99	0.40	-0.33	-0.38	-0.53	-0.50	N/A	N/A	-0.54	-1.77	0.46	-1.03	-0.51	N/A	
Firefighters' Retirement - Gross	1.77	2.04	9.45	8.05	9.32	8.97	7.31	6.38	15.34	7.78	2.32	8.61	17.99	7.88	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	29	10	5	2	8	77	64	58	5	7	7	78	
Sheriffs' Retirement - Net	1.60	1.70	8.83	7.54	8.79	8.44	6.75	6.08	14.80	7.33	1.86	8.05	17.35	7.63	07/01/1994
Sheriffs' Benchmark	2.59	1.30	9.17	7.93	9.32	8.95	N/A	N/A	15.34	9.10	1.40	9.07	17.91	N/A	
Difference	-0.99	0.40	-0.34	-0.39	-0.53	-0.51	N/A	N/A	-0.54	-1.77	0.46	-1.02	-0.56	N/A	
Sheriffs' Retirement - Gross	1.77	2.04	9.45	8.06	9.31	8.97	7.30	6.42	15.34	7.79	2.32	8.59	17.93	7.92	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	29	10	5	3	8	76	64	58	5	7	8	76	
Highway Patrol Retirement - Net	1.60	1.72	8.86	7.54	8.79	8.45	6.76	6.06	14.79	7.30	1.87	8.08	17.38	7.62	07/01/1994
Highway Patrol Benchmark	2.59	1.31	9.18	7.92	9.33	8.96	N/A	N/A	15.34	9.09	1.41	9.10	17.94	N/A	
Difference	-0.99	0.41	-0.32	-0.38	-0.54	-0.51	N/A	N/A	-0.55	-1.79	0.46	-1.02	-0.56	N/A	
Highway Patrol Retirement - Gross	1.78	2.06	9.48	8.05	9.31	8.98	7.31	6.40	15.33	7.77	2.32	8.62	17.96	7.91	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	28	10	5	2	8	77	64	58	5	7	7	76	

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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Game Wardens' Retirement - Net	1.60	1.71	8.85	7.55	8.79	8.44	6.75	6.05	14.81	7.31	1.88	8.03	17.34	7.64	07/01/1994
Game Wardens' Benchmark	2.59	1.31	9.18	7.94	9.33	8.95	N/A	N/A	15.36	9.11	1.41	9.06	17.90	N/A	
Difference	-0.99	0.40	-0.33	-0.39	-0.54	-0.51	N/A	N/A	-0.55	-1.80	0.47	-1.03	-0.56	N/A	
Game Wardens' Retirement - Gross	1.77	2.05	9.47	8.06	9.31	8.97	7.29	6.39	15.35	7.78	2.33	8.57	17.92	7.93	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	28	10	5	3	9	77	63	58	5	7	8	75	
Judges' Retirement - Net	1.60	1.70	8.84	7.55	8.79	8.44	6.77	6.07	14.82	7.32	1.86	8.06	17.36	7.64	07/01/1994
Judges' Benchmark	2.60	1.31	9.19	7.94	9.33	8.95	N/A	N/A	15.37	9.10	1.40	9.08	17.92	N/A	
Difference	-1.00	0.39	-0.35	-0.39	-0.54	-0.51	N/A	N/A	-0.55	-1.78	0.46	-1.02	-0.56	N/A	
Judges' Retirement - Gross	1.77	2.04	9.46	8.06	9.32	8.98	7.32	6.41	15.36	7.79	2.32	8.60	17.94	7.92	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	7	6	28	10	5	2	8	76	63	58	5	7	8	75	
Volunteer Firefighters' Retirement - Net	1.60	1.70	8.84	7.48	8.78	8.44	6.75	6.39	14.79	7.16	1.91	8.09	17.42	7.42	07/01/1994
Volunteer Firefighters' Benchmark	2.60	1.30	9.19	7.91	9.33	8.96	N/A	N/A	15.33	9.08	1.42	9.11	17.97	N/A	
Difference	-1.00	0.40	-0.35	-0.43	-0.55	-0.52	N/A	N/A	-0.54	-1.92	0.49	-1.02	-0.55	N/A	
Volunteer Firefighters' Retirement - Gross	1.76	2.03	9.46	7.99	9.30	8.97	7.30	6.73	15.34	7.63	2.36	8.63	18.00	7.71	07/01/1994
All Public Plans > \$3B Total Fund Median	1.10	1.21	8.89	7.31	8.21	7.61	6.70	6.60	16.05	7.98	0.52	6.78	14.60	8.34	
Rank	8	6	28	12	6	3	8	36	64	65	5	7	7	83	

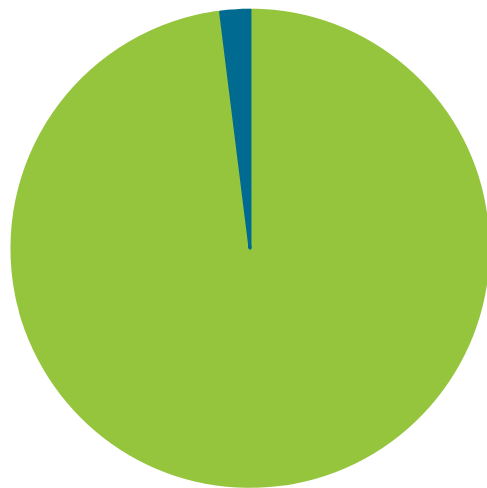
Net performance shown is net of all manager fees and expenses (Net-All). All Public Plans > \$3B Total Fund Median is reported gross of fees. Benchmark returns reflect unmanaged indices which are not impacted by management fees. Fiscal year ends on 06/30. Since inception performance may vary from State 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 June 30, 2018

	Consolidated Asset Pension Pool (CAPP)		Short Term Investment Pool (STIP)		Total Fund	
	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	5,652,702,748	49.98	111,857,006	48.89	5,764,559,755	49.96
Teachers' Retirement	4,032,275,091	35.66	83,403,698	36.46	4,115,678,789	35.67
Police Retirement	393,801,835	3.48	7,771,206	3.40	401,573,041	3.48
Firefighters' Retirement	408,717,941	3.61	8,169,550	3.57	416,887,491	3.61
Sheriffs' Retirement	350,934,847	3.10	6,781,803	2.96	357,716,650	3.10
Highway Patrol Retirement	145,456,441	1.29	2,581,012	1.13	148,037,453	1.28
Game Wardens' Retirement	189,125,334	1.67	3,514,760	1.54	192,640,094	1.67
Judges' Retirement	100,269,073	0.89	1,876,607	0.82	102,145,680	0.89
Volunteer Firefighters' Retirement	35,567,709	0.31	2,814,558	1.23	38,382,267	0.33
Retirement Plans Total Fund Composite	11,308,851,019	98.02	228,770,200	1.98	11,537,621,218	100.00

June 30, 2018 : \$11,537,621,218

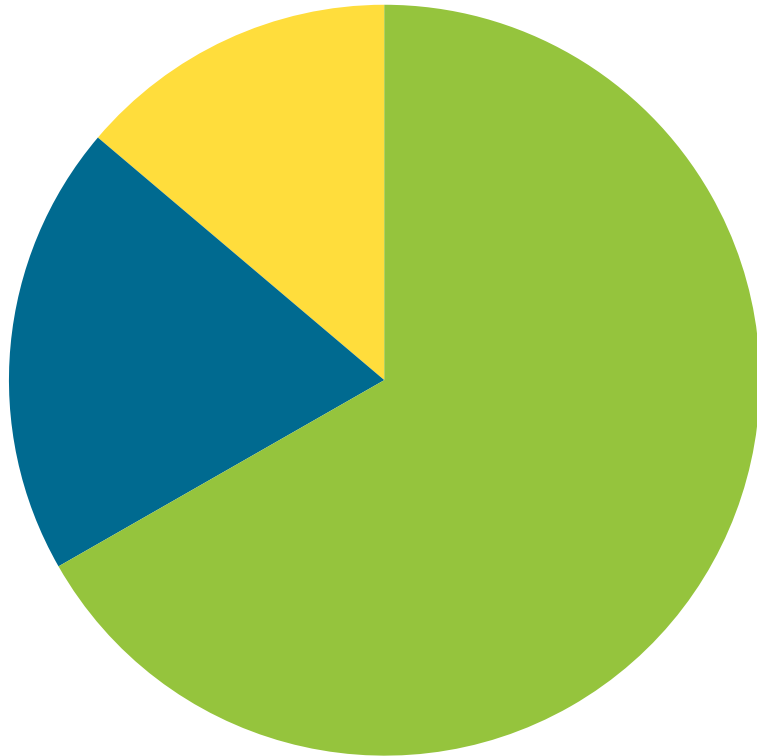


Segments

	Market Value (\$)	Allocation (%)
Consolidated Asset Pension Pool (CAPP)	11,308,851,019	98.02
Short Term Investment Pool (STIP)	228,770,200	1.98

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.

June 30, 2018 : \$16,945,302,730



	Market Value (\$)	Allocation (%)
Consolidated Asset Pension Pool (CAPP)	11,308,851,054	66.74
Short Term Investment Pool	3,296,729,518	19.46
Trust Funds Investment Pool	2,339,722,158	13.81

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

Montana Board of Investments
Comparative Performance
Investment Pools

As of June 30, 2018

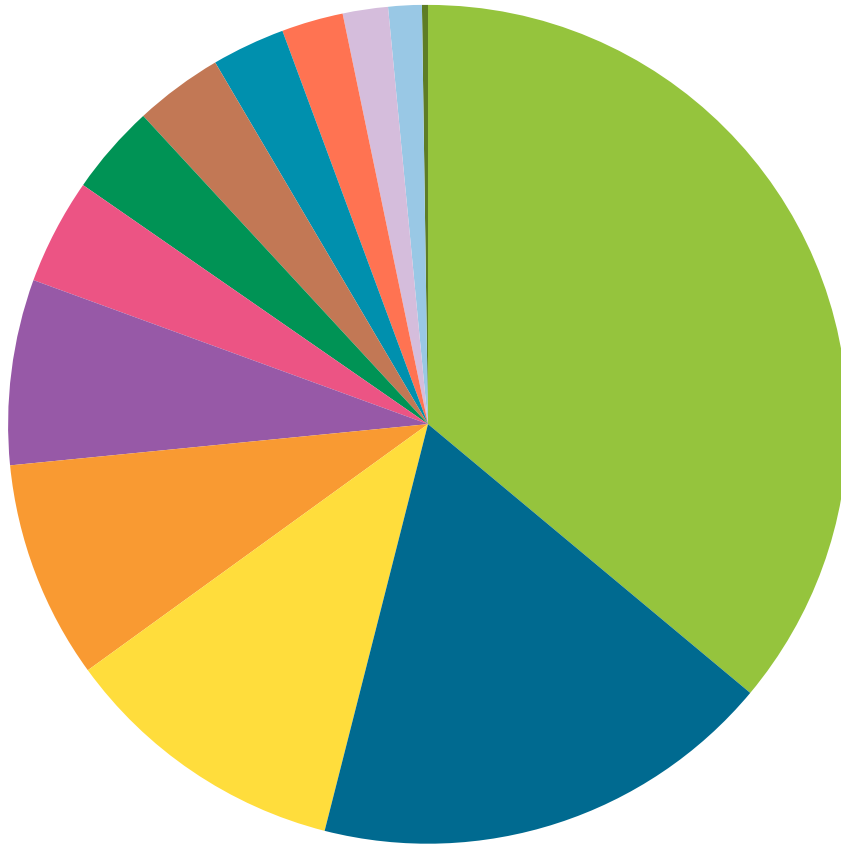
	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Consolidated Asset Pension Pool (CAPP)	1.62	1.72	9.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.81	04/01/2017
CAPP Custom Benchmark	2.64	1.31	9.36	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.66	
Difference	-1.02	0.41	-0.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.15	
Trust Funds Investment Pool	0.03	-1.11	0.27	2.61	3.38	3.82	4.98	4.01	4.02	1.83	6.96	-0.25	6.10	04/01/1997
Bloomberg US Agg Bond Index	-0.16	-1.62	-0.40	1.72	2.27	2.57	3.72	3.54	2.65	0.55	5.97	-2.02	5.09	
Difference	0.19	0.51	0.67	0.89	1.11	1.25	1.26	0.47	1.37	1.28	0.99	1.77	1.01	
Short Term Investment Pool	0.49	0.86	1.49	0.91	0.59	0.50	0.58	1.11	0.61	0.22	0.10	0.19	2.47	04/01/1997
Short Term Custom Index	0.45	0.87	1.54	0.89	0.60	0.49	0.53	1.15	0.52	0.21	0.16	0.19	N/A	
Difference	0.04	-0.01	-0.05	0.02	-0.01	0.01	0.05	-0.04	0.09	0.01	-0.06	0.00	N/A	
iMoney.net Money Fund (Gross) Median	0.54	0.95	1.63	0.97	0.66	0.55	0.63	1.21	0.61	0.25	0.17	0.22	2.45	
Difference	-0.05	-0.09	-0.14	-0.06	-0.07	-0.05	-0.05	-0.10	0.00	-0.03	-0.07	-0.03	0.02	

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 June 30, 2018

June 30, 2018 : \$11,308,851,069



	Market Value (\$)	Allocation (%)
Domestic Equity	4,078,329,588	36.06
International Equity	2,023,457,150	17.89
Private Equity	1,252,281,287	11.07
US Treasury & Agency	950,954,477	8.41
Real Estate	808,199,833	7.15
Mortgage - Backed	460,147,708	4.07
Investment Grade Credit	394,940,393	3.49
TIPS	385,161,519	3.41
High Yield	318,067,650	2.81
Natural Resources	268,582,047	2.37
Cash Pension	196,983,463	1.74
Broad Fixed Income	145,563,933	1.29
Diversifying Strategies	26,182,023	0.23

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



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

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Domestic Equity	3.94	3.51	14.85	11.25	13.10	12.81	9.97	20.80	11.46	0.86	12.28	34.19	9.28	05/01/2003
Domestic Equity Custom Index	3.97	3.33	14.93	12.03	13.48	13.22	10.33	21.05	13.03	1.01	13.08	32.80	9.98	
Difference	-0.03	0.18	-0.08	-0.78	-0.38	-0.41	-0.36	-0.25	-1.57	-0.15	-0.80	1.39	-0.70	
International Equity	-2.77	-3.30	8.10	5.85	6.68	4.23	2.19	28.67	3.87	-3.57	-4.00	16.39	4.90	04/01/1997
International Equity Custom Index	-2.61	-3.65	7.75	5.46	6.34	4.05	2.85	27.81	4.41	-4.60	-4.03	15.62	5.23	
Difference	-0.16	0.35	0.35	0.39	0.34	0.18	-0.66	0.86	-0.54	1.03	0.03	0.77	-0.33	
Broad Fixed Income	0.37	-0.60	0.50	1.95	2.67	3.27	4.61	2.41	3.98	0.48	6.19	-0.95	5.83	04/01/1997
Bloomberg US Agg Bond Index	-0.16	-1.62	-0.40	1.72	2.27	2.57	3.72	3.54	2.65	0.55	5.97	-2.02	5.09	
Difference	0.53	1.02	0.90	0.23	0.40	0.70	0.89	-1.13	1.33	-0.07	0.22	1.07	0.74	
Investment Grade Credit	-0.06	-1.61	-0.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.98	04/01/2017
Bloomberg US Corp Int Bond Index	-0.10	-1.60	-0.40	2.19	2.72	3.23	4.66	3.92	4.04	1.08	4.35	0.08	0.87	
Difference	0.04	-0.01	0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.11	
US Treasury & Agency	0.06	-0.68	-0.70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.08	04/01/2017
Bloomberg US Trsy Int Trm Index	0.06	-0.69	-0.76	0.62	1.04	1.40	2.43	1.14	1.06	1.18	2.57	-1.34	-0.08	
Difference	0.00	0.01	0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.16	
High Yield	0.74	-0.31	1.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.67	04/01/2017
Bloomberg US HY 2% Issuer Cap Index	1.03	0.16	2.62	5.54	5.52	6.32	8.23	7.50	17.13	-4.43	2.46	7.44	3.86	
Difference	-0.29	-0.47	-1.21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.19	
Mortgage - Backed	0.18	-0.70	0.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.14	04/01/2017
Bloomberg US MBS Index	0.24	-0.95	0.15	1.46	2.25	2.15	3.54	2.47	1.67	1.51	6.08	-1.41	0.81	
Difference	-0.06	0.25	0.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.33	
TIPS	0.65	0.27	1.51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.88	04/01/2017
Bloomberg US Trsy Infl Notes 1-10 Yr Index	0.61	0.21	1.45	1.50	1.21	1.28	2.26	1.90	4.01	-0.52	0.91	-5.58	0.84	
Difference	0.04	0.06	0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.04	
Natural Resources	2.44	2.04	3.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.55	04/01/2017
MSCI ACW Cmtty Producers Index (USD) (Net)	8.05	4.98	26.10	7.32	2.70	-1.47	-2.58	13.70	32.44	-25.83	-14.69	3.31	16.66	
Difference	-5.61	-2.94	-22.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-10.11	
Real Estate	2.33	4.41	7.61	9.88	10.88	10.63	3.47	9.17	8.82	14.27	12.13	10.16	3.70	06/01/2006
Real Estate Custom Index	10.10	1.19	3.57	7.82	9.70	10.24	3.82	5.99	9.08	13.86	11.36	11.97	5.67	
Difference	-7.77	3.22	4.04	2.06	1.18	0.39	-0.35	3.18	-0.26	0.41	0.77	-1.81	-1.97	

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
 Consolidated Asset Pension Pool (CAPP)

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Diversifying Strategies	0.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.61	03/01/2018
Bloomberg US Trsy Int Trm Index	0.06	-0.69	-0.76	0.62	1.04	1.40	2.43	1.14	1.06	1.18	2.57	-1.34	0.59	
Difference	0.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.02	
Cash Pension	0.54	1.02	1.48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.47	05/01/2017
Short Term Custom Index	0.45	0.87	1.54	0.89	0.60	0.49	0.53	1.15	0.52	0.21	0.16	0.19	1.49	
Difference	0.09	0.15	-0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.02	

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
 Consolidated Asset Pension Pool (CAPP)

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Private Equity Pool*	3.62	7.15	15.61	11.38	11.78	11.79	9.02	15.20	7.37	7.20	15.47	14.52	12.34	05/01/2002
Private Equity Custom Index	6.86	6.34	17.68	13.20	16.59	16.28	13.51	19.15	20.11	3.68	23.31	25.24	11.82	
<i>Difference</i>	<i>-3.24</i>	<i>0.81</i>	<i>-2.07</i>	<i>-1.82</i>	<i>-4.81</i>	<i>-4.49</i>	<i>-4.49</i>	<i>-3.95</i>	<i>-12.74</i>	3.52	<i>-7.84</i>	<i>-10.72</i>	0.52	

Performance shown is net of all manager fees and expenses (Net-All). For additional information on the Private Equity Custom Index, please see the Addendum.

*Performance is based on prior quarter's fair market value adjusted for cash flows during the most recent quarterly period.

Benchmark returns reflect unmanaged indices that 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.

Montana Board of Investments
Comparative Performance
Investment Pools

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Domestic Equity	4.09	3.83	15.47	11.67	13.49	13.19	10.36	21.31	11.76	1.14	12.59	34.61	9.58	05/01/2003
All Public Plans-US Equity Segment Median	3.84	3.52	14.76	11.20	12.95	12.60	9.85	20.32	12.98	0.21	11.42	33.76	9.63	
Rank	37	39	28	40	18	20	32	31	76	25	21	42	57	
Population	72	70	66	63	56	47	30	93	95	86	48	46	13	
International Equity	-2.70	-3.15	8.39	6.14	6.98	4.53	2.54	29.01	4.15	-3.35	-3.77	16.80	5.29	04/01/1997
All Public Plans-Intl. Equity Segment Median	-2.07	-2.67	7.85	6.12	7.16	5.59	3.89	28.59	3.97	-2.60	-2.99	18.71	N/A	
Rank	67	63	43	50	63	81	95	44	46	64	77	77	N/A	
Population	74	74	70	66	55	43	31	90	92	80	46	43	N/A	
Broad Fixed Income	0.48	-0.38	0.92	2.24	2.89	3.47	4.77	2.91	4.09	0.59	6.30	-0.83	6.04	04/01/1997
All Public Plans-US Fixed Income Segment Median	-0.04	-1.18	0.51	2.44	2.98	3.30	4.50	4.54	4.54	0.26	6.01	-1.39	N/A	
Rank	8	17	26	62	57	46	46	83	60	35	39	38	N/A	
Population	77	77	73	71	64	54	36	86	92	80	49	49	N/A	
Trust Funds Investment Pool	0.05	-1.07	0.36	2.69	3.47	3.91	5.07	4.10	4.12	1.89	7.08	-0.14	6.10	10/01/1995
All Public Plans-US Fixed Income Segment Median	-0.04	-1.18	0.51	2.44	2.98	3.30	4.50	4.54	4.54	0.26	6.01	-1.39	N/A	
Rank	43	40	57	42	35	33	32	63	59	5	26	27	N/A	
Population	77	77	73	71	64	54	36	86	92	80	49	49	N/A	
Real Estate	2.88	5.60	9.45	11.47	12.41	12.17	4.94	10.91	10.26	15.68	13.51	11.73	5.14	06/01/2006
All Public Plans-Real Estate Segment Median	2.44	4.34	8.88	10.27	12.13	12.25	5.86	8.92	9.91	13.44	14.67	13.69	N/A	
Rank	32	18	39	24	41	52	65	25	45	12	68	67	N/A	
Population	45	42	36	24	20	16	11	37	31	28	16	15	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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Domestic Large Cap Equity - Net	3.61	2.90	14.59	11.78	13.50	13.07	9.99	21.66	11.30	1.76	13.82	33.14	7.67	07/01/2007
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	7.82	
Difference	0.18	0.25	0.22	-0.15	0.08	-0.16	-0.18	-0.17	-0.66	0.38	0.13	0.75	-0.15	
Domestic Large Cap Equity - Gross	3.67	2.99	14.77	11.94	13.67	13.26	10.23	21.82	11.45	1.91	13.99	33.34	7.90	07/01/2007
IM U.S. Large Cap Equity (SA+CF) Median	2.98	2.36	14.00	11.10	13.27	13.08	10.25	21.68	10.98	0.94	12.93	33.51	8.13	
Rank	34	40	43	35	39	42	52	49	46	40	32	53	58	
Domestic Large Cap Active - Net	3.66	2.76	14.48	11.29	13.53	13.05	9.90	21.85	9.63	2.40	14.01	34.90	7.49	07/01/2007
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	7.82	
Difference	0.23	0.11	0.11	-0.64	0.11	-0.18	-0.27	0.02	-2.33	1.02	0.32	2.51	-0.33	
Domestic Large Cap Active - Gross	3.80	3.03	15.06	11.82	14.07	13.58	10.41	22.40	10.12	2.88	14.56	35.55	7.98	07/01/2007
IM U.S. Large Cap Equity (SA+CF) Median	2.98	2.36	14.00	11.10	13.27	13.08	10.25	21.68	10.98	0.94	12.93	33.51	8.13	
Rank	31	40	39	38	31	34	45	43	56	32	25	33	55	
Domestic Mid Cap Equity - Net	2.71	3.67	13.83	9.00	11.12	11.46	9.73	19.29	12.29	-3.31	6.45	38.18	8.86	01/01/2005
Russell Mid Cap Index	2.82	2.35	12.33	9.58	12.22	11.89	10.23	18.52	13.80	-2.44	13.22	34.76	9.38	
Difference	-0.11	1.32	1.50	-0.58	-1.10	-0.43	-0.50	0.77	-1.51	-0.87	-6.77	3.42	-0.52	
Domestic Mid Cap Equity - Gross	2.84	3.94	14.46	9.64	11.78	12.09	10.36	20.01	12.96	-2.74	7.07	38.95	9.39	01/01/2005
IM U.S. Mid Cap Equity (SA+CF) Median	3.19	3.45	13.97	10.14	12.80	12.17	10.84	20.00	12.71	-1.19	9.78	36.41	10.12	
Rank	53	40	47	56	74	54	67	50	49	68	74	34	79	
Domestic Small Cap Equity - Net	6.75	6.56	17.69	10.60	12.98	12.38	10.83	15.65	19.31	-1.61	5.44	40.65	12.56	03/01/2003
Russell 2000 Index	7.75	7.66	17.57	10.96	12.46	11.83	10.60	14.65	21.31	-4.41	4.89	38.82	11.87	
Difference	-1.00	-1.10	0.12	-0.36	0.52	0.55	0.23	1.00	-2.00	2.80	0.55	1.83	0.69	
Domestic Small Cap Equity - Gross	6.88	6.84	18.28	11.22	13.67	13.10	11.53	16.27	19.97	-0.93	6.16	41.54	13.12	03/01/2003
IM U.S. Small Cap Equity (SA+CF) Median	6.95	6.43	16.88	11.42	13.21	12.65	11.57	15.12	20.87	-2.31	5.36	41.32	13.09	
Rank	52	46	43	54	45	41	52	44	57	36	43	49	49	

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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
International Large Cap Passive - Net	-2.75	-3.73	7.47	5.67	6.39	4.08	N/A	27.79	4.87	-4.71	-3.70	14.95	7.19	06/01/2009
MSCI ACW Ex US Index (USD) (Net)	-2.61	-3.77	7.28	5.07	5.99	3.81	2.54	27.19	4.50	-5.66	-3.87	15.29	6.94	
Difference	-0.14	0.04	0.19	0.60	0.40	0.27	N/A	0.60	0.37	0.95	0.17	-0.34	0.25	
International Large Cap Passive - Gross	-2.74	-3.70	7.54	5.75	6.47	4.16	N/A	27.88	4.96	-4.63	-3.62	15.05	7.27	06/01/2009
International Equity Active - Net	-2.66	-2.79	8.79	7.13	7.81	5.24	2.88	30.82	2.63	0.41	-4.39	19.23	3.73	04/01/1997
MSCI ACW Ex US Index (USD) (Net)	-2.61	-3.77	7.28	5.07	5.99	3.81	2.54	27.19	4.50	-5.66	-3.87	15.29	N/A	
Difference	-0.05	0.98	1.51	2.06	1.82	1.43	0.34	3.63	-1.87	6.07	-0.52	3.94	N/A	
International Equity Active - Gross	-2.53	-2.53	9.36	7.70	8.35	5.75	3.38	31.50	3.17	0.90	-3.94	19.75	4.25	04/01/1997
IM International Large Cap Core Equity (SA+CF) Median	-1.83	-2.75	7.26	5.55	7.40	5.87	4.08	26.48	1.26	0.33	-3.93	23.39	6.85	
Rank	68	47	26	14	21	56	79	10	27	44	51	73	100	
International Value - Net	-3.13	-3.14	9.51	7.10	7.41	4.57	1.94	30.72	5.59	-5.94	-1.49	17.15	2.28	11/01/2006
MSCI ACW Ex US Val Index (USD) (Net)	-3.84	-5.28	4.64	3.51	4.75	2.74	2.03	22.66	8.92	-10.06	-5.10	15.04	2.19	
Difference	0.71	2.14	4.87	3.59	2.66	1.83	-0.09	8.06	-3.33	4.12	3.61	2.11	0.09	
International Value - Gross	-3.01	-2.88	10.07	7.67	7.98	5.14	2.52	31.39	6.17	-5.46	-0.94	17.82	2.87	11/01/2006
IM International Large Cap Value Equity (SA+CF) Median	-2.18	-3.79	6.29	5.19	6.86	5.63	4.37	26.13	3.92	-1.91	-4.28	23.25	4.11	
Rank	67	36	16	18	26	58	89	12	27	83	15	76	92	
International Growth - Net	-2.57	-3.77	5.32	5.47	6.32	4.30	2.31	28.01	0.51	1.69	-6.15	18.55	3.03	11/01/2006
MSCI ACW Ex US Grth Index (USD) (Net)	-1.42	-2.28	9.90	6.56	7.18	4.83	3.01	32.01	0.12	-1.25	-2.65	15.49	4.10	
Difference	-1.15	-1.49	-4.58	-1.09	-0.86	-0.53	-0.70	-4.00	0.39	2.94	-3.50	3.06	-1.07	
International Growth - Gross	-2.44	-3.49	5.91	6.09	6.88	4.83	2.85	28.74	1.12	2.21	-5.72	19.09	3.57	11/01/2006
IM International Large Cap Growth Equity (SA+CF) Median	-0.80	-0.90	10.24	7.07	8.42	6.75	5.12	31.37	-0.07	2.18	-3.34	20.63	5.53	
Rank	82	87	93	69	83	94	85	69	34	50	79	69	91	
International Small Cap - Net	-2.85	-2.02	11.39	8.67	10.09	7.09	5.19	33.61	1.84	5.16	-4.87	25.30	5.23	09/01/2006
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	-2.60	-2.94	10.57	7.94	8.98	5.86	5.77	31.65	3.91	2.60	-4.03	19.73	5.78	
Difference	-0.25	0.92	0.82	0.73	1.11	1.23	-0.58	1.96	-2.07	2.56	-0.84	5.57	-0.55	
International Small Cap - 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	09/01/2006
IM International Small Cap Equity (SA+CF) Median	-1.88	-1.36	13.06	10.15	11.07	9.27	8.20	34.89	1.13	10.15	-3.40	31.13	7.61	
Rank	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	

Gross of fees performance is not available (N/A) for the International Small Cap composite which currently consists of DFA Intl Sm Co;l (DFISX), DFA Emg Mkts Sm Cap;l (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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Domestic Large Cap Passive - Net	3.55	2.90	14.54	11.66	13.28	13.15	10.18	21.34	12.01	0.83	13.73	32.41	5.54	05/01/2000
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	5.55	
Difference	0.12	0.25	0.17	-0.27	-0.14	-0.08	0.01	-0.49	0.05	-0.55	0.04	0.02	-0.01	
Domestic Large Cap Passive - Gross	3.56	2.90	14.54	11.67	13.29	13.16	10.18	21.35	12.03	0.84	13.74	32.42	5.58	05/01/2000
IM U.S. Large Cap Index Equity (SA+CF) Median	3.56	2.85	14.54	11.74	13.39	13.16	10.24	21.73	12.04	0.94	13.27	32.58	5.73	
Rank	51	42	50	58	69	50	70	57	53	55	18	65	77	
Domestic Large Cap Enhanced - Net	3.68	3.53	15.39	12.59	14.07	13.62	10.36	24.21	9.73	3.18	13.19	32.89	8.48	06/01/2006
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	8.78	
Difference	0.25	0.88	1.02	0.66	0.65	0.39	0.19	2.38	-2.23	1.80	-0.50	0.50	-0.30	
Domestic Large Cap Enhanced - Gross	3.74	3.66	15.67	12.90	14.40	13.95	10.69	24.53	10.05	3.50	13.54	33.31	8.79	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	2.89	2.38	14.24	11.12	13.35	13.12	10.18	21.82	10.51	1.39	13.43	32.98	9.06	
Rank	21	24	33	13	22	24	30	19	57	23	49	48	65	
Domestic Large Cap 130/30 - Net	3.82	2.57	15.01	10.46	13.27	13.21	10.11	20.28	9.54	1.61	14.84	36.94	9.60	03/01/2008
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	9.49	
Difference	0.39	-0.08	0.64	-1.47	-0.15	-0.02	-0.06	-1.55	-2.42	0.23	1.15	4.55	0.11	
Domestic Large Cap 130/30 - Gross	4.05	3.00	15.92	11.21	14.02	13.96	10.85	21.10	10.22	2.26	15.59	37.83	10.33	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	2.89	2.38	14.24	11.12	13.35	13.12	10.18	21.82	10.51	1.39	13.43	32.98	9.70	
Rank	14	39	33	47	27	24	25	62	55	37	21	13	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 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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Domestic Large Cap Equity														
BlackRock MSCI US Equity Index (CF) - Net	3.54	2.89	14.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14.53	07/01/2017
MSCI US Index (USD) (Gross)	3.55	2.90	14.53	11.73	13.40	13.18	10.13	21.90	11.61	1.32	13.36	32.61	14.53	
Difference	-0.01	-0.01	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	
BlackRock MSCI US Equity Index (CF) - Gross	3.55	2.89	14.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14.53	07/01/2017
SPDR S&P 500 ETF (SPY) - Net	4.32	1.37	12.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.99	07/01/2017
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	14.37	
Difference	0.89	-1.28	-1.38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.38	
Domestic Equity Pool STIF - Net	0.47	0.82	1.42	0.80	N/A	N/A	N/A	1.00	0.50	N/A	N/A	N/A	0.74	04/01/2015
Short Term Custom Index	0.45	0.87	1.54	0.89	0.60	0.49	0.53	1.15	0.52	0.21	0.16	0.19	0.83	
Difference	0.02	-0.05	-0.12	-0.09	N/A	N/A	N/A	-0.15	-0.02	N/A	N/A	N/A	-0.09	
T. Rowe U.S. Structured Research (SA) - Net	3.68	3.53	15.38	12.83	14.14	13.73	10.60	23.94	10.68	3.30	12.58	33.23	9.35	06/01/2006
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	8.78	
Difference	0.25	0.88	1.01	0.90	0.72	0.50	0.43	2.11	-1.28	1.92	-1.11	0.84	0.57	
T. Rowe U.S. Structured Research (SA) - Gross	3.74	3.66	15.67	13.12	14.46	14.06	10.93	24.24	10.98	3.61	12.92	33.63	9.68	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	2.89	2.38	14.24	11.12	13.35	13.12	10.18	21.82	10.51	1.39	13.43	32.98	9.06	
Rank	21	24	33	12	20	23	24	22	45	23	59	44	24	
Jacobs Levy Partial L/S (SA) - Net	4.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.16	04/01/2018
MSCI US Index (USD) (Gross)	3.55	2.90	14.53	11.73	13.40	13.18	10.13	21.90	11.61	1.32	13.36	32.61	3.55	
Difference	0.61	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.61	
Jacobs Levy Partial L/S (SA) - Gross	4.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.41	04/01/2018
IM U.S. Large Cap Core Equity (SA+CF) Median	2.89	2.38	14.24	11.12	13.35	13.12	10.18	21.82	10.51	1.39	13.43	32.98	2.89	
Rank	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	
J.P. Morgan 130/30 (SA) - Net	3.65	1.86	14.36	10.54	13.64	13.46	11.16	22.86	10.30	0.01	15.38	37.55	10.58	03/01/2008
S&P 500 Index (Cap Wtd)	3.43	2.65	14.37	11.93	13.42	13.23	10.17	21.83	11.96	1.38	13.69	32.39	9.49	
Difference	0.22	-0.79	-0.01	-1.39	0.22	0.23	0.99	1.03	-1.66	-1.37	1.69	5.16	1.09	
J.P. Morgan 130/30 (SA) - Gross	3.86	2.29	15.29	11.36	14.48	14.28	11.97	23.79	11.09	0.72	16.21	38.53	11.38	03/01/2008
IM U.S. Large Cap Core Equity (SA+CF) Median	2.89	2.38	14.24	11.12	13.35	13.12	10.18	21.82	10.51	1.39	13.43	32.98	9.70	
Rank	19	53	35	45	20	18	7	26	44	59	15	11	7	

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. iShares:Russ 2000 ETF (IWM) was funded during Q2 2018.



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	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Domestic Mid Cap Equity														
Artisan Partners (SA) - Net	3.87	1.40	10.25	8.63	8.93	10.03	9.62	13.81	23.60	-9.68	2.12	37.20	8.28	03/01/2007
Russell Mid Cap Val Index	2.41	-0.16	7.60	8.80	11.27	11.70	10.06	13.34	20.00	-4.78	14.75	33.46	7.49	
Difference	1.46	1.56	2.65	-0.17	-2.34	-1.67	-0.44	0.47	3.60	-4.90	-12.63	3.74	0.79	
Artisan Partners (SA) - Gross	4.02	1.71	10.92	9.32	9.63	10.75	10.37	14.51	24.41	-9.09	2.79	38.11	9.03	03/01/2007
IM U.S. Mid Cap Value Equity (SA+CF) Median	2.31	1.16	9.40	9.24	11.97	12.08	10.68	15.63	18.48	-3.23	11.73	36.24	8.85	
Rank	23	39	38	50	91	80	63	58	15	89	97	40	45	
Iridian Asset Management (SA) - Net	-0.03	-2.09	7.48	6.22	11.22	N/A	N/A	24.06	3.29	-1.62	12.84	N/A	11.65	05/01/2013
Russell Mid Cap Val Index	2.41	-0.16	7.60	8.80	11.27	11.70	10.06	13.34	20.00	-4.78	14.75	33.46	11.00	
Difference	-2.44	-1.93	-0.12	-2.58	-0.05	N/A	N/A	10.72	-16.71	3.16	-1.91	N/A	0.65	
Iridian Asset Management (SA) - Gross	0.14	-1.74	8.26	7.01	12.06	N/A	N/A	24.96	4.07	-0.87	13.73	N/A	12.50	05/01/2013
IM U.S. Mid Cap Value Equity (SA+CF) Median	2.31	1.16	9.40	9.24	11.97	12.08	10.68	15.63	18.48	-3.23	11.73	36.24	11.95	
Rank	86	81	63	84	47	N/A	N/A	4	100	23	24	N/A	40	
iShares:Core S&P Md-Cp (IJH) - Net	3.82	0.22	10.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10.00	07/01/2017
S&P Mid Cap 400 Index (Cap Wtd)	4.29	3.49	13.50	10.89	12.69	12.08	10.78	16.24	20.74	-2.18	9.77	33.50	13.50	
Difference	-0.47	-3.27	-3.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3.50	
Congress Mid Cap Growth (SA) - Net	0.44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.36	03/01/2018
Russell Mid Cap Grth Index	3.16	5.40	18.52	10.73	13.37	12.16	10.45	25.27	7.33	-0.20	11.90	35.74	2.99	
Difference	-2.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.63	
Congress Mid Cap Growth (SA) - Gross	0.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.53	03/01/2018
IM U.S. Mid Cap Growth Equity (SA+CF) Median	3.80	6.64	17.89	10.63	13.40	12.18	10.91	25.43	5.59	0.79	8.63	36.40	3.79	
Rank	96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	93	
TimesSquare Capital Management (SA) - Net	3.06	5.85	17.26	10.26	12.33	12.40	10.86	23.02	7.91	0.96	5.69	37.79	9.62	03/01/2007
Russell Mid Cap Grth Index	3.16	5.40	18.52	10.73	13.37	12.16	10.45	25.27	7.33	-0.20	11.90	35.74	9.21	
Difference	-0.10	0.45	-1.26	-0.47	-1.04	0.24	0.41	-2.25	0.58	1.16	-6.21	2.05	0.41	
TimesSquare Capital Management (SA) - Gross	3.22	6.19	18.03	11.00	13.09	13.17	11.64	23.84	8.65	1.65	6.42	38.75	10.40	03/01/2007
IM U.S. Mid Cap Growth Equity (SA+CF) Median	3.80	6.64	17.89	10.63	13.40	12.18	10.91	25.43	5.59	0.79	8.63	36.40	10.04	
Rank	62	55	47	42	59	25	32	60	23	42	71	36	43	

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Domestic Small Cap Equity														
Vaughan Nelson Management (SA) - Net	3.59	1.60	9.78	6.51	11.25	10.98	10.62	6.83	20.50	0.16	9.09	39.30	9.78	03/01/2007
Russell 2000 Val Index	8.30	5.44	13.10	11.22	11.18	11.10	9.88	7.84	31.74	-7.47	4.22	34.52	6.68	
Difference	-4.71	-3.84	-3.32	-4.71	0.07	-0.12	0.74	-1.01	-11.24	7.63	4.87	4.78	3.10	
Vaughan Nelson Management (SA) - Gross	3.77	1.96	10.58	7.35	12.14	11.89	11.55	7.66	21.49	0.98	10.00	40.47	10.71	03/01/2007
IM U.S. Small Cap Value Equity (SA+CF) Median	5.62	3.99	13.30	10.67	12.21	12.18	11.60	11.59	26.17	-4.29	5.71	38.07	8.88	
Rank	83	75	79	90	52	58	52	77	76	9	10	35	12	
BlackRock MSCI US Sm Cap Equity Index (CF) - Net	6.85	6.36	17.69	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.69	07/01/2017
MSCI US Sm Cap Index (USD) (Net)	6.74	6.10	17.15	10.67	12.50	11.91	11.29	16.75	19.15	-4.11	7.07	37.64	17.15	
Difference	0.11	0.26	0.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.54	
BlackRock MSCI US Sm Cap Equity Index (CF) - Gross	6.86	6.38	17.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.75	07/01/2017
DFA US Small Cap Trust (CF) - Net	6.95	5.58	15.67	11.03	12.77	12.67	11.86	11.86	24.42	-2.64	4.75	42.42	12.87	03/01/2003
Russell 2000 Index	7.75	7.66	17.57	10.96	12.46	11.83	10.60	14.65	21.31	-4.41	4.89	38.82	11.87	
Difference	-0.80	-2.08	-1.90	0.07	0.31	0.84	1.26	-2.79	3.11	1.77	-0.14	3.60	1.00	
DFA US Small Cap Trust (CF) - Gross	7.04	5.77	16.05	11.42	13.17	13.07	12.24	12.25	24.85	-2.29	5.12	42.90	13.19	03/01/2003
IM U.S. Small Cap Core Equity (SA+CF) Median	6.61	6.66	16.94	11.79	13.66	12.82	11.32	15.13	20.73	-1.35	6.65	41.28	13.04	
Rank	41	61	59	56	61	46	33	72	21	63	65	41	44	

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	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Domestic Small Cap Equity (Cont.)														
iShares:Russ 2000 ETF (IWM) - 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	6.82	05/01/2018
Russell 2000 Index	7.75	7.66	17.57	10.96	12.46	11.83	10.60	14.65	21.31	-4.41	4.89	38.82	6.83	
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	-0.01	
Alliance Bernstein (SA) - Net	11.46	17.29	35.71	14.91	15.45	N/A	N/A	34.73	6.82	-0.84	-1.61	45.22	14.52	04/01/2012
Russell 2000 Grth Index	7.23	9.70	21.86	10.60	13.65	12.50	11.24	22.17	11.32	-1.38	5.60	43.30	13.87	
Difference	4.23	7.59	13.85	4.31	1.80	N/A	N/A	12.56	-4.50	0.54	-7.21	1.92	0.65	
Alliance Bernstein (SA) - Gross	11.68	17.76	36.83	15.91	16.47	N/A	N/A	35.88	7.80	0.05	-0.71	46.52	15.54	04/01/2012
IM U.S. Small Cap Growth Equity (SA+CF) Median	8.82	12.12	24.51	12.34	14.60	13.31	12.15	23.82	11.38	-0.74	4.08	45.48	14.78	
Rank	23	18	11	15	19	N/A	N/A	9	69	42	81	46	36	
Voya Investment Management (SA) - Net	6.66	6.13	14.65	9.41	12.21	N/A	N/A	18.69	13.14	-1.01	5.41	N/A	12.68	05/01/2013
Russell 2000 Grth Index	7.23	9.70	21.86	10.60	13.65	12.50	11.24	22.17	11.32	-1.38	5.60	43.30	14.13	
Difference	-0.57	-3.57	-7.21	-1.19	-1.44	N/A	N/A	-3.48	1.82	0.37	-0.19	N/A	-1.45	
Voya Investment Management (SA) - Gross	6.87	6.57	15.61	10.36	13.19	N/A	N/A	19.71	14.14	-0.15	6.35	N/A	13.66	05/01/2013
IM U.S. Small Cap Growth Equity (SA+CF) Median	8.82	12.12	24.51	12.34	14.60	13.31	12.15	23.82	11.38	-0.74	4.08	45.48	15.28	
Rank	77	87	90	73	72	N/A	N/A	73	35	44	31	N/A	76	

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), and iShares:Russ 2000 ETF (IWM).

The current annual expense ratios for the SPDR S&P 500 ETF (SPY), Domestic Equity Pool STIF, iShares:Core S&P Md-Cp (IJH), and iShares:Russ 2000 ETF (IWM) are 0.09%, 0.15%, 0.07%, and 0.20%, respectively.

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	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
International Developed Large Cap Equity														
Acadian Asset Non-US Equity (SA) - Net	-1.98	-1.24	12.48	10.94	9.74	7.05	3.53	34.76	12.40	-7.75	0.00	17.60	3.59	11/01/2006
MSCI ACW Ex US Val Index (USD) (Net)	-3.84	-5.28	4.64	3.51	4.75	2.74	2.03	22.66	8.92	-10.06	-5.10	15.04	2.19	
Difference	1.86	4.04	7.84	7.43	4.99	4.31	1.50	12.10	3.48	2.31	5.10	2.56	1.40	
Acadian Asset Non-US Equity (SA) - Gross	-1.86	-0.99	13.05	11.52	10.31	7.62	4.10	35.45	13.01	-7.26	0.52	18.22	4.17	11/01/2006
IM ACWI Ex US Value (SA+CF) Median	-2.55	-3.64	6.47	5.27	6.76	5.67	4.35	26.02	4.87	-3.25	-3.87	20.09	4.10	
Rank	32	15	1	1	6	15	54	8	10	85	15	61	49	
Lazard Asset Management (SA) - Net	-3.91	-4.41	7.25	4.07	N/A	N/A	N/A	27.00	0.22	N/A	N/A	N/A	3.38	06/01/2015
MSCI ACW Ex US Val Index (USD) (Net)	-3.84	-5.28	4.64	3.51	4.75	2.74	2.03	22.66	8.92	-10.06	-5.10	15.04	2.41	
Difference	-0.07	0.87	2.61	0.56	N/A	N/A	N/A	4.34	-8.70	N/A	N/A	N/A	0.97	
Lazard Asset Management (SA) - Gross	-3.79	-4.16	7.80	4.62	N/A	N/A	N/A	27.65	0.77	N/A	N/A	N/A	3.93	06/01/2015
IM ACWI Ex US Value (SA+CF) Median	-2.55	-3.64	6.47	5.27	6.76	5.67	4.35	26.02	4.87	-3.25	-3.87	20.09	4.22	
Rank	83	61	39	64	N/A	N/A	N/A	38	86	N/A	N/A	N/A	55	
BlackRock ACWI Ex-US SuperFund A (CF) - Net	-2.31	-3.56	7.55	5.32	6.22	4.02	N/A	27.49	4.77	-5.49	-3.73	15.51	7.16	06/01/2009
MSCI ACW Ex US Index (USD) (Net)	-2.61	-3.77	7.28	5.07	5.99	3.81	2.54	27.19	4.50	-5.66	-3.87	15.29	6.94	
Difference	0.30	0.21	0.27	0.25	0.23	0.21	N/A	0.30	0.27	0.17	0.14	0.22	0.22	
BlackRock ACWI Ex-US SuperFund A (CF) - Gross	-2.30	-3.52	7.62	5.40	6.30	4.10	N/A	27.58	4.86	-5.42	-3.65	15.61	7.25	06/01/2009
IM All ACWI Ex US (SA+CF) Median	-1.93	-2.23	8.45	6.25	7.74	5.99	4.55	28.74	2.09	-0.53	-3.38	20.39	9.13	
Rank	61	70	58	63	80	85	N/A	60	25	85	54	84	88	
iShares:MSCI EAFE ETF (EFA) - Net	-1.94	-1.88	6.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.97	07/01/2017
MSCI EAFE Index (USD) (Net)	-1.24	-2.75	6.84	4.90	6.44	4.89	2.84	25.03	1.00	-0.81	-4.90	22.78	6.84	
Difference	-0.70	0.87	0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13	
Baillie Gifford (SA) - Net	0.29	-0.52	9.76	7.94	N/A	N/A	N/A	31.99	0.73	N/A	N/A	N/A	6.89	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	-1.42	-2.28	9.90	6.56	7.18	4.83	3.01	32.01	0.12	-1.25	-2.65	15.49	5.47	
Difference	1.71	1.76	-0.14	1.38	N/A	N/A	N/A	-0.02	0.61	N/A	N/A	N/A	1.42	
Baillie Gifford (SA) - Gross	0.41	-0.27	10.31	8.50	N/A	N/A	N/A	32.66	1.28	N/A	N/A	N/A	7.45	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	-0.76	-0.20	11.68	8.28	8.96	7.20	5.52	32.77	-0.32	1.31	-1.78	20.39	7.00	
Rank	34	51	60	44	N/A	N/A	N/A	51	34	N/A	N/A	N/A	40	

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Invesco (SA) - Net	-4.67	-6.14	2.05	3.57	N/A	N/A	N/A	24.92	0.32	N/A	N/A	N/A	2.44	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	-1.42	-2.28	9.90	6.56	7.18	4.83	3.01	32.01	0.12	-1.25	-2.65	15.49	5.47	
Difference	-3.25	-3.86	-7.85	-2.99	N/A	N/A	N/A	-7.09	0.20	N/A	N/A	N/A	-3.03	
Invesco (SA) - Gross	-4.53	-5.85	2.68	4.24	N/A	N/A	N/A	25.70	1.01	N/A	N/A	N/A	3.11	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	-0.76	-0.20	11.68	8.28	8.96	7.20	5.52	32.77	-0.32	1.31	-1.78	20.39	7.00	
Rank	96	100	99	96	N/A	N/A	N/A	91	37	N/A	N/A	N/A	96	
International Equity Pool STIF - Net	0.47	0.84	1.40	0.77	N/A	N/A	N/A	0.92	0.47	N/A	N/A	N/A	0.72	04/01/2015
Short Term Custom Index	0.45	0.87	1.54	0.89	0.60	0.49	0.53	1.15	0.52	0.21	0.16	0.19	0.83	
Difference	0.02	-0.03	-0.14	-0.12	N/A	N/A	N/A	-0.23	-0.05	N/A	N/A	N/A	-0.11	
International Developed Small Cap Equity														
American Century Investment Mgmt (SA) - Net	-0.51	3.38	23.21	12.13	N/A	N/A	N/A	43.80	-5.31	11.32	N/A	N/A	8.23	03/01/2014
MSCI ACW Ex US Sm Cap Grth Index (USD) (Net)	-1.67	-0.84	13.67	8.57	9.73	6.22	5.40	33.64	-0.28	6.50	-3.59	18.52	6.43	
Difference	1.16	4.22	9.54	3.56	N/A	N/A	N/A	10.16	-5.03	4.82	N/A	N/A	1.80	
American Century Investment Mgmt (SA) - Gross	-0.31	3.81	24.24	13.08	N/A	N/A	N/A	44.99	-4.49	12.25	N/A	N/A	9.14	03/01/2014
IM ACWI Ex US Growth (SA+CF) Median	-0.76	-0.20	11.68	8.28	8.96	7.20	5.52	32.77	-0.32	1.31	-1.78	20.39	5.94	
Rank	41	9	5	5	N/A	N/A	N/A	6	80	1	N/A	N/A	8	
BlackRock ACWI Ex-US Small Cap (CF) - Net	-2.24	-2.71	10.97	8.22	9.24	N/A	N/A	31.96	4.26	2.87	-3.84	19.87	8.92	02/01/2012
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	-2.60	-2.94	10.57	7.94	8.98	5.86	5.77	31.65	3.91	2.60	-4.03	19.73	8.67	
Difference	0.36	0.23	0.40	0.28	0.26	N/A	N/A	0.31	0.35	0.27	0.19	0.14	0.25	
BlackRock ACWI Ex-US Small Cap (CF) - Gross	-2.21	-2.65	11.09	8.39	9.42	N/A	N/A	32.15	4.44	3.04	-3.67	20.08	9.10	02/01/2012
DFA Intl Sm Co;l (DFISX) - Net	-1.96	-2.33	9.30	9.21	10.37	7.38	6.25	30.24	5.74	5.89	-6.29	27.49	8.51	11/01/2004
MSCI Wrld Ex US Sm Cap Index (USD) (Net)	-0.94	-1.44	11.87	9.45	10.28	7.13	6.09	31.04	4.32	5.46	-5.35	25.55	7.94	
Difference	-1.02	-0.89	-2.57	-0.24	0.09	0.25	0.16	-0.80	1.42	0.43	-0.94	1.94	0.57	
Templeton Investment Counsel (SA) - Net	-3.35	-2.13	9.29	6.45	N/A	N/A	N/A	33.07	-1.13	1.81	N/A	N/A	5.43	03/01/2014
Templeton Custom Index	-3.27	-4.77	7.79	7.37	8.25	5.50	6.13	29.72	8.24	-1.25	-4.49	20.92	4.75	
Difference	-0.08	2.64	1.50	-0.92	N/A	N/A	N/A	3.35	-9.37	3.06	N/A	N/A	0.68	
Templeton Investment Counsel (SA) - Gross	-3.15	-1.71	10.22	7.39	N/A	N/A	N/A	34.21	-0.23	2.73	N/A	N/A	6.37	03/01/2014
IM ACWI Ex US Value (SA+CF) Median	-2.55	-3.64	6.47	5.27	6.76	5.67	4.35	26.02	4.87	-3.25	-3.87	20.09	3.79	
Rank	69	21	23	26	N/A	N/A	N/A	8	89	9	N/A	N/A	12	

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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
International Emerging Equity														
BlackRock Emerging Mkts (CF) - Net	-7.86	-6.73	8.02	5.39	4.77	N/A	N/A	37.05	10.85	-15.15	-2.49	-2.79	2.99	02/01/2012
MSCI Emg Mkts Index (USD) (Net)	-7.96	-6.66	8.20	5.60	5.01	1.43	2.26	37.28	11.19	-14.92	-2.19	-2.60	3.23	
Difference	0.10	-0.07	-0.18	-0.21	-0.24	N/A	N/A	-0.23	-0.34	-0.23	-0.30	-0.19	-0.24	
BlackRock Emerging Mkts (CF) - Gross	-7.83	-6.68	8.12	5.53	4.95	N/A	N/A	37.16	11.08	-14.99	-2.30	-2.57	3.17	02/01/2012
iShares:MSCI Em Mkts (EEM) - Net	-9.65	-8.72	5.43	N/A	N/A	N/A	N/A	36.86	N/A	N/A	N/A	N/A	16.00	01/01/2017
MSCI Emg Mkts Index (USD) (Net)	-7.96	-6.66	8.20	5.60	5.01	1.43	2.26	37.28	11.19	-14.92	-2.19	-2.60	17.98	
Difference	-1.69	-2.06	-2.77	N/A	N/A	N/A	N/A	-0.42	N/A	N/A	N/A	N/A	-1.98	
DFA Emg Mkts Sm Cap;I (DEMSX) - Net	-9.71	-8.42	5.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.29	03/01/2017
MSCI Emg Mkts Sm Cap Index (USD) (Net)	-8.60	-8.45	5.64	2.55	4.32	1.38	4.44	33.84	2.28	-6.85	1.01	1.04	8.33	
Difference	-1.11	0.03	-0.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.04	

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), International Equity Pool STIF, DFA Intl Sm Co;I (DFISX), iShares:MSCI Em Mkts (EEM), and DFA Emg Mkts Sm Cap;I (DEMSX) are 0.32%, 0.18%, 0.53%, 0.69%, and 0.73%, 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
Fixed Income Managers

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Trust Funds Bond Portfolio	-0.09	-1.39	-0.11	2.15	2.84	3.27	4.48	3.78	3.41	1.03	6.79	-1.43	5.82	10/01/1995
Bloomberg US Agg Bond Index	-0.16	-1.62	-0.40	1.72	2.27	2.57	3.72	3.54	2.65	0.55	5.97	-2.02	5.07	
Difference	0.07	0.23	0.29	0.43	0.57	0.70	0.76	0.24	0.76	0.48	0.82	0.59	0.75	
Trust Funds Bond Portfolio	-0.09	-1.39	-0.11	2.15	2.84	3.27	4.48	3.78	3.41	1.03	6.79	-1.43	5.82	10/01/1995
IM U.S. Broad Market Core FI (SA+CF) Median	-0.09	-1.44	0.00	2.09	2.67	3.07	4.39	4.05	3.10	0.82	6.17	-1.56	5.46	
Rank	51	41	55	45	32	34	45	66	43	28	26	42	11	
Reams Asset Core Plus (SA) - Net	0.28	-0.75	0.34	2.07	2.35	3.30	N/A	3.21	4.18	0.07	4.47	-0.85	5.32	10/01/2008
Reams Custom Index	-0.16	-1.62	-0.40	2.05	2.59	2.91	4.05	3.83	3.91	0.43	5.56	-1.35	4.28	
Difference	0.44	0.87	0.74	0.02	-0.24	0.39	N/A	-0.62	0.27	-0.36	-1.09	0.50	1.04	
Reams Asset Core Plus (SA) - Gross	0.32	-0.66	0.51	2.24	2.53	3.48	N/A	3.38	4.35	0.24	4.65	-0.68	5.50	10/01/2008
IM U.S. Broad Market Core+ FI (SA+CF) Median	-0.18	-1.43	0.24	2.57	3.14	3.63	5.17	4.79	4.69	0.27	6.20	-0.49	5.59	
Rank	6	9	35	71	90	61	N/A	95	58	52	91	57	54	
Post High Yield Plus (SA) - Net	0.57	-0.17	1.71	4.40	5.56	6.43	N/A	6.52	9.58	0.82	4.99	10.19	8.95	06/01/2009
Bloomberg US HY 2% Issuer Cap Index	1.03	0.16	2.62	5.54	5.52	6.32	8.23	7.50	17.13	-4.43	2.46	7.44	9.67	
Difference	-0.46	-0.33	-0.91	-1.14	0.04	0.11	N/A	-0.98	-7.55	5.25	2.53	2.75	-0.72	
Post High Yield Plus (SA) - Gross	0.72	0.12	2.31	5.01	6.19	7.07	N/A	7.15	10.23	1.43	5.62	10.85	9.60	06/01/2009
IM U.S. High Yield Bonds (SA+CF) Median	0.79	0.20	2.82	5.10	5.39	6.17	7.74	7.55	14.10	-2.13	2.61	7.55	9.36	
Rank	63	56	69	54	17	13	N/A	60	85	7	2	10	40	
Post Trad'l High Yield LP (CF) - Gross	0.58	-0.05	2.11	5.00	6.23	7.07	N/A	7.09	10.62	1.42	6.01	9.98	8.96	09/01/2009
IM U.S. High Yield Bonds (SA+CF) Median	0.79	0.20	2.82	5.10	5.39	6.17	7.74	7.55	14.10	-2.13	2.61	7.55	8.47	
Rank	74	62	74	54	17	13	N/A	60	82	8	2	13	26	
Neuberger Berman High Yield (SA) - Net	1.02	-0.03	1.83	4.44	4.80	5.67	N/A	5.80	14.98	-4.32	1.93	7.78	7.11	01/01/2010
Bloomberg US HY 2% Issuer Cap Index	1.03	0.16	2.62	5.54	5.52	6.32	8.23	7.50	17.13	-4.43	2.46	7.44	7.53	
Difference	-0.01	-0.19	-0.79	-1.10	-0.72	-0.65	N/A	-1.70	-2.15	0.11	-0.53	0.34	-0.42	
Neuberger Berman High Yield (SA) - Gross	1.13	0.19	2.28	4.91	5.27	6.15	N/A	6.27	15.50	-3.89	2.38	8.26	7.59	01/01/2010
IM U.S. High Yield Bonds (SA+CF) Median	0.79	0.20	2.82	5.10	5.39	6.17	7.74	7.55	14.10	-2.13	2.61	7.55	7.48	
Rank	23	51	69	56	56	51	N/A	78	33	75	56	31	44	

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
Fixed Income Managers

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Oaktree U.S. High Yield (SA) - Net	0.56	-1.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.19	01/01/2018
Bloomberg US HY 2% Issuer Cap Index	1.03	0.16	2.62	5.54	5.52	6.32	8.23	7.50	17.13	-4.43	2.46	7.44	0.16	
Difference	-0.47	-1.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.35	
Oaktree U.S. High Yield (SA) - Gross	0.69	-0.90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.90	01/01/2018
IM U.S. High Yield Bonds (SA+CF) Median	0.79	0.20	2.82	5.10	5.39	6.17	7.74	7.55	14.10	-2.13	2.61	7.55	0.20	
Rank	66	93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	93	
Shenkman High Yield Fixed Income (SA) - Net	0.58	-0.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.37	01/01/2018
Bloomberg US HY 2% Issuer Cap Index	1.03	0.16	2.62	5.54	5.52	6.32	8.23	7.50	17.13	-4.43	2.46	7.44	0.16	
Difference	-0.45	-0.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.53	
Shenkman High Yield Fixed Income (SA) - Gross	0.70	-0.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.11	01/01/2018
IM U.S. High Yield Bonds (SA+CF) Median	0.79	0.20	2.82	5.10	5.39	6.17	7.74	7.55	14.10	-2.13	2.61	7.55	0.20	
Rank	65	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	65	

Trust Funds Bond Portfolio and Post Trad'l High Yield LP (CF) are part of the Trust Funds Investment Pool.

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
 Diversifying Strategies Managers

As of June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Long U.S. Treasuries Portfolio	0.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.61	03/01/2018
Bloomberg 20+ Yr Trsy Strips Index	0.86	-3.74	1.30	5.70	7.16	10.57	8.65	13.66	1.41	-3.74	46.38	-20.95	5.31	
Difference	-0.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.70	
Long U.S. Treasuries Portfolio	0.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.61	03/01/2018
IM U.S. Long Duration (SA+CF) Median	-1.47	-5.04	-0.63	4.65	5.49	6.61	7.70	11.23	7.44	-3.33	18.34	-7.17	-0.02	
Rank	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	

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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Abandoned Mine Trust	0.50	0.69	1.22	1.02	1.22	1.29	2.07	1.04	1.10	0.90	1.49	0.63	4.10	12/01/1993
Belt Water Treatment Plant Fund	0.33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.54	03/01/2018
Big Sky Economic Development Fund	0.05	-1.07	0.31	2.60	3.33	3.75	4.86	3.97	3.98	1.82	6.77	-0.22	4.76	07/01/2005
Butte Area One Restoration	0.21	-0.41	0.66	1.88	2.12	2.27	N/A	2.92	2.60	1.20	3.57	-0.08	3.05	11/01/2008
Clark Fork River Restoration	0.17	-0.46	0.61	1.91	2.32	2.53	N/A	2.85	2.72	1.37	4.26	-0.12	3.44	11/01/2008
Coal Tax Cultural Trust Fund	0.04	-1.07	0.29	2.58	3.32	3.74	4.86	3.96	3.95	1.79	6.79	-0.23	6.01	12/01/1993
Coal Tax Park Acquisition	0.05	-1.05	0.32	2.57	3.28	3.72	4.84	3.96	3.90	1.78	6.66	-0.25	5.98	12/01/1993
East Helena Compensation Fund	0.26	-0.13	0.88	1.68	1.82	N/A	N/A	2.56	2.12	0.91	3.01	-0.13	1.51	01/01/2013
Endowment for Children	0.05	-1.06	0.31	2.45	3.20	3.64	4.74	3.89	3.66	1.70	6.66	-0.28	4.79	08/01/2007
FWP License Account	0.33	0.31	0.82	0.84	0.80	0.85	1.45	1.11	0.84	0.61	0.59	0.42	2.98	11/01/1997
FWP Mitigation Trust Fund	0.21	-0.26	0.21	0.62	0.94	1.08	1.82	1.15	0.67	0.87	1.37	0.61	3.89	12/01/1993
FWP Real Property Trust	0.06	-1.03	0.30	2.49	3.18	3.59	4.67	3.80	3.82	1.73	6.47	-0.24	5.33	12/01/1993
Group Benefits	0.32	0.12	0.76	0.95	1.09	1.13	1.99	1.30	1.16	1.06	1.17	0.32	3.95	12/01/1993
Harold Hamm Endowment	0.06	-0.97	-0.36	N/A	N/A	N/A	N/A	1.11	N/A	N/A	N/A	N/A	0.23	07/01/2016
Montana Pole	0.12	-0.72	0.51	2.24	2.77	3.10	4.10	3.38	3.23	1.56	5.44	-0.17	5.10	09/01/1996
Montana State University	0.44	0.69	1.41	1.09	0.90	0.88	1.13	1.39	0.95	0.39	0.85	0.12	1.99	08/01/2004
Montana Tech-UM Agency Funds	0.47	0.78	1.44	0.96	0.69	0.63	0.80	1.22	0.72	0.27	0.35	0.17	1.79	03/01/2003
MT BOI - Clark Fork Site	0.10	-0.84	0.44	2.40	2.87	3.11	N/A	3.64	3.63	1.56	5.37	-0.09	4.07	11/01/2008
MT BOI UOFM Other	0.30	0.06	1.03	1.62	1.79	1.68	2.08	2.15	2.34	1.13	2.57	-0.12	2.91	08/01/2002
MUS Group Insurance	0.42	0.76	1.30	1.17	1.28	N/A	N/A	1.09	1.33	1.26	1.30	0.17	1.13	10/01/2011
MUS Workers Compensation	0.37	0.36	1.18	N/A	N/A	N/A	N/A	1.80	N/A	N/A	N/A	N/A	0.87	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 June 30, 2018

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2017	2016	2015	2014	2013	Since Incep.	Inception Date
Older Montanans Trust	0.05	-1.04	0.31	2.53	3.23	3.21	4.53	3.87	3.86	1.72	6.57	-0.23	4.57	08/01/2007
Permanent Coal Trust Excl Crp	0.35	-0.19	1.10	2.72	3.38	3.78	4.60	3.49	3.79	2.23	6.14	0.99	5.76	12/01/1993
PERS Defined Cont Disability	1.48	0.62	7.90	N/A	N/A	N/A	N/A	14.57	3.42	N/A	N/A	N/A	6.44	09/01/2015
Potter Trust Fund	0.05	-1.02	0.32	N/A	N/A	N/A	N/A	3.87	N/A	N/A	N/A	N/A	1.40	06/01/2016
Resource Indemnity Trust	0.03	-1.11	0.27	2.61	3.37	3.79	4.88	4.01	4.02	1.82	6.94	-0.27	6.08	12/01/1993
Smelter Hill Up Restorative	0.33	0.19	0.95	1.40	1.57	1.60	N/A	1.85	1.79	0.92	2.49	0.01	1.96	11/01/2008
State Fund Insurance	0.51	-0.39	1.72	3.00	3.63	3.95	4.81	5.05	3.50	2.21	5.00	3.11	5.54	12/01/1993
Streamside Tailings Operable Unit	0.04	-0.92	0.39	2.40	3.07	3.42	4.38	3.69	3.58	1.69	6.22	-0.21	5.30	02/01/1999
Subsequent Injury Fund	0.49	0.86	1.49	0.90	0.59	0.50	-0.26	1.11	0.61	0.22	0.11	0.13	3.13	12/01/1993
Tobacco Trust Fund	0.04	-1.09	0.28	2.59	3.35	3.77	4.88	3.96	3.99	1.82	6.89	-0.27	5.56	01/01/2001
Treasurers	0.48	0.86	1.47	0.90	0.64	0.54	0.62	1.07	0.68	0.27	0.19	0.23	2.95	12/01/1993
Treasure State Endowment	0.04	-1.09	0.29	2.60	3.35	3.77	4.89	4.00	3.98	1.82	6.84	-0.21	5.94	12/01/1993
Treasure State Reg. Water System	0.04	-1.09	0.29	2.59	3.33	3.75	4.87	4.00	3.96	1.82	6.80	-0.22	5.72	06/01/2000
Trust and Legacy Account	0.03	-1.12	0.26	2.60	3.36	3.77	4.88	4.00	4.01	1.82	6.92	-0.26	6.71	07/01/1991
UCFRB Assess/Litig Cost Rec	0.05	-1.04	0.28	2.48	3.15	3.48	4.65	3.77	3.84	1.65	6.40	-0.24	5.65	07/01/1999
UCFRB Restoration Fund	0.08	-0.91	0.39	2.40	3.08	3.50	4.59	3.73	3.52	1.70	6.28	-0.20	5.55	06/01/1999
Upper Blackfoot Response	0.35	0.24	1.03	1.41	1.34	1.31	N/A	1.90	1.74	0.84	1.59	0.13	1.31	09/01/2010
Weed Control Trust	0.03	-1.12	0.27	2.61	3.37	3.71	4.61	4.01	4.02	1.82	6.94	-0.23	5.17	12/01/1993
Wildlife Habitat Trust	0.06	-1.03	0.31	2.47	3.18	3.58	4.66	3.78	3.79	1.73	6.49	-0.24	5.34	12/01/1993
Zortman/Landusky LT H2O	0.49	0.86	1.49	1.04	1.38	2.51	4.46	1.01	1.36	0.84	1.78	-0.51	6.92	09/01/1999
Z/L Long Term H2O Trust Fund	0.49	0.86	1.50	1.09	1.38	2.34	3.87	1.08	1.39	1.15	1.76	-0.96	4.65	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 and 100% MSCI US REIT Index (USD) (Gross) thereafter.
- The Private Equity Custom Index consists of 100% S&P 1500 Comp Index+4% (1 Qtr Lag) through 03/31/2017 and 100% MSCI US Small Cap Index (USD) (Gross) 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 and 100% Bloomberg US Agg Bond Index thereafter.

Trust Accounts Comments

- 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

- 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 U.S. 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.
- 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.
- 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.

Miscellaneous Comments

- Fiscal year ends on 06/30.

Expense Ratios

• SPDR S&P 500 ETF (SPY):	0.09%
• Domestic Equity Pool STIF:	0.15%
• DFA Intl Sm Co;l (DFISX):	0.53%
• iShares:MSCI EAFE ETF (EFA):	0.32%
• International Equity Pool STIF:	0.18%
• iShares:MSCI Em Mkts (EEM):	0.69%
• DFA Emg Mkts Sm Cap;l (DEMSX):	0.73%
• iShares:Core S&P Md-Cp (IJH):	0.07%
• iShares:Russ 2000 ETF (IWM):	0.20%

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