



# Quarterly Investment Performance Analysis

Montana Board of Investments

Period Ended: June 30, 2020



Montana Board of Investments  
Comparative Performance  
Retirement Plans

As of June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Public Employees' Retirement - Net</b>	<b>9.38</b>	<b>-2.88</b>	<b>2.71</b>	<b>5.72</b>	<b>6.19</b>	<b>7.46</b>	<b>8.84</b>	<b>5.54</b>	<b>16.77</b>	<b>-2.63</b>	<b>14.80</b>	<b>7.32</b>	<b>1.86</b>	<b>7.47</b>	<b>07/01/1994</b>
Public Employees' Benchmark	15.70	-5.43	0.54	5.05	5.95	7.52	N/A	N/A	20.45	-5.57	15.35	9.12	1.40	N/A	
Difference	-6.32	2.55	2.17	0.67	0.24	-0.06	N/A	N/A	-3.68	2.94	-0.55	-1.80	0.46	N/A	
<b>Public Employees' Retirement - Gross</b>	<b>9.52</b>	<b>-2.61</b>	<b>3.24</b>	<b>6.32</b>	<b>6.74</b>	<b>8.00</b>	<b>9.40</b>	<b>5.94</b>	<b>17.44</b>	<b>-2.03</b>	<b>15.34</b>	<b>7.78</b>	<b>2.31</b>	<b>7.78</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	30	15	10	5	34	43	42	64	56	7	49	
<b>Teachers' Retirement - Net</b>	<b>9.38</b>	<b>-2.88</b>	<b>2.73</b>	<b>5.72</b>	<b>6.19</b>	<b>7.46</b>	<b>8.84</b>	<b>5.54</b>	<b>16.78</b>	<b>-2.64</b>	<b>14.76</b>	<b>7.33</b>	<b>1.86</b>	<b>7.48</b>	<b>07/01/1994</b>
Teachers' Benchmark	15.69	-5.44	0.52	5.04	5.94	7.51	N/A	N/A	20.42	-5.57	15.32	9.11	1.40	N/A	
Difference	-6.31	2.56	2.21	0.68	0.25	-0.05	N/A	N/A	-3.64	2.93	-0.56	-1.78	0.46	N/A	
<b>Teachers' Retirement - Gross</b>	<b>9.52</b>	<b>-2.61</b>	<b>3.26</b>	<b>6.32</b>	<b>6.73</b>	<b>8.00</b>	<b>9.41</b>	<b>5.94</b>	<b>17.45</b>	<b>-2.03</b>	<b>15.31</b>	<b>7.80</b>	<b>2.32</b>	<b>7.79</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	30	15	10	5	34	43	42	65	56	7	49	
<b>Police Retirement - Net</b>	<b>9.39</b>	<b>-2.87</b>	<b>2.74</b>	<b>5.73</b>	<b>6.20</b>	<b>7.46</b>	<b>8.83</b>	<b>5.53</b>	<b>16.80</b>	<b>-2.63</b>	<b>14.79</b>	<b>7.32</b>	<b>1.86</b>	<b>7.34</b>	<b>07/01/1994</b>
Police Benchmark	15.71	-5.44	0.52	5.04	5.94	7.51	N/A	N/A	20.44	-5.57	15.33	9.11	1.40	N/A	
Difference	-6.32	2.57	2.22	0.69	0.26	-0.05	N/A	N/A	-3.64	2.94	-0.54	-1.79	0.46	N/A	
<b>Police Retirement - Gross</b>	<b>9.53</b>	<b>-2.61</b>	<b>3.26</b>	<b>6.34</b>	<b>6.74</b>	<b>8.01</b>	<b>9.38</b>	<b>5.93</b>	<b>17.47</b>	<b>-2.02</b>	<b>15.33</b>	<b>7.78</b>	<b>2.31</b>	<b>7.65</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	29	15	10	6	34	42	42	65	56	7	51	

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, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Firefighters' Retirement - Net</b>	<b>9.39</b>	<b>-2.88</b>	<b>2.73</b>	<b>5.73</b>	<b>6.20</b>	<b>7.47</b>	<b>8.82</b>	<b>5.53</b>	<b>16.79</b>	<b>-2.62</b>	<b>14.79</b>	<b>7.32</b>	<b>1.87</b>	<b>7.33</b>	<b>07/01/1994</b>
Firefighters' Benchmark	15.71	-5.44	0.52	5.04	5.95	7.51	N/A	N/A	20.44	-5.57	15.33	9.12	1.41	N/A	
Difference	-6.32	2.56	2.21	0.69	0.25	-0.04	N/A	N/A	-3.65	2.95	-0.54	-1.80	0.46	N/A	
<b>Firefighters' Retirement - Gross</b>	<b>9.52</b>	<b>-2.61</b>	<b>3.26</b>	<b>6.33</b>	<b>6.74</b>	<b>8.01</b>	<b>9.38</b>	<b>5.93</b>	<b>17.46</b>	<b>-2.01</b>	<b>15.34</b>	<b>7.78</b>	<b>2.32</b>	<b>7.64</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	29	15	10	6	34	42	42	65	56	7	52	
<b>Sheriffs' Retirement - Net</b>	<b>9.38</b>	<b>-2.88</b>	<b>2.70</b>	<b>5.72</b>	<b>6.19</b>	<b>7.45</b>	<b>8.82</b>	<b>5.55</b>	<b>16.75</b>	<b>-2.62</b>	<b>14.80</b>	<b>7.33</b>	<b>1.86</b>	<b>7.36</b>	<b>07/01/1994</b>
Sheriffs' Benchmark	15.69	-5.43	0.53	5.05	5.95	7.51	N/A	N/A	20.43	-5.56	15.35	9.13	1.40	N/A	
Difference	-6.31	2.55	2.17	0.67	0.24	-0.06	N/A	N/A	-3.68	2.94	-0.55	-1.80	0.46	N/A	
<b>Sheriffs' Retirement - Gross</b>	<b>9.51</b>	<b>-2.61</b>	<b>3.23</b>	<b>6.32</b>	<b>6.74</b>	<b>8.00</b>	<b>9.38</b>	<b>5.95</b>	<b>17.42</b>	<b>-2.02</b>	<b>15.34</b>	<b>7.79</b>	<b>2.32</b>	<b>7.67</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	30	15	10	6	34	44	42	64	56	7	50	
<b>Highway Patrol Retirement - Net</b>	<b>9.37</b>	<b>-2.87</b>	<b>2.72</b>	<b>5.73</b>	<b>6.19</b>	<b>7.46</b>	<b>8.84</b>	<b>5.55</b>	<b>16.78</b>	<b>-2.62</b>	<b>14.79</b>	<b>7.30</b>	<b>1.87</b>	<b>7.36</b>	<b>07/01/1994</b>
Highway Patrol Benchmark	15.69	-5.41	0.55	5.06	5.96	7.52	N/A	N/A	20.45	-5.56	15.34	9.11	1.41	N/A	
Difference	-6.32	2.54	2.17	0.67	0.23	-0.06	N/A	N/A	-3.67	2.94	-0.55	-1.81	0.46	N/A	
<b>Highway Patrol Retirement - Gross</b>	<b>9.51</b>	<b>-2.60</b>	<b>3.24</b>	<b>6.34</b>	<b>6.74</b>	<b>8.01</b>	<b>9.40</b>	<b>5.95</b>	<b>17.45</b>	<b>-2.01</b>	<b>15.33</b>	<b>7.77</b>	<b>2.32</b>	<b>7.67</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	29	15	10	5	34	43	41	65	56	7	50	

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, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	20 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Game Wardens' Retirement - Net</b>	<b>9.38</b>	<b>-2.89</b>	<b>2.69</b>	<b>5.72</b>	<b>6.19</b>	<b>7.45</b>	<b>8.82</b>	<b>5.53</b>	<b>16.77</b>	<b>-2.62</b>	<b>14.81</b>	<b>7.31</b>	<b>1.88</b>	<b>7.37</b>	<b>07/01/1994</b>
Game Wardens' Benchmark	15.70	-5.44	0.53	5.05	5.96	7.52	N/A	N/A	20.45	-5.56	15.36	9.14	1.40	N/A	
Difference	-6.32	2.55	2.16	0.67	0.23	-0.07	N/A	N/A	-3.68	2.94	-0.55	-1.83	0.48	N/A	
<b>Game Wardens' Retirement - Gross</b>	<b>9.52</b>	<b>-2.63</b>	<b>3.21</b>	<b>6.32</b>	<b>6.74</b>	<b>8.00</b>	<b>9.38</b>	<b>5.93</b>	<b>17.44</b>	<b>-2.01</b>	<b>15.35</b>	<b>7.78</b>	<b>2.33</b>	<b>7.69</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	31	29	30	15	10	6	34	43	42	64	56	7	50	
<b>Judges' Retirement - Net</b>	<b>9.39</b>	<b>-2.88</b>	<b>2.71</b>	<b>5.73</b>	<b>6.20</b>	<b>7.46</b>	<b>8.83</b>	<b>5.55</b>	<b>16.78</b>	<b>-2.64</b>	<b>14.82</b>	<b>7.32</b>	<b>1.86</b>	<b>7.37</b>	<b>07/01/1994</b>
Judges' Benchmark	15.72	-5.43	0.54	5.06	5.96	7.52	N/A	N/A	20.47	-5.57	15.37	9.13	1.40	N/A	
Difference	-6.33	2.55	2.17	0.67	0.24	-0.06	N/A	N/A	-3.69	2.93	-0.55	-1.81	0.46	N/A	
<b>Judges' Retirement - Gross</b>	<b>9.53</b>	<b>-2.61</b>	<b>3.24</b>	<b>6.33</b>	<b>6.74</b>	<b>8.00</b>	<b>9.39</b>	<b>5.95</b>	<b>17.45</b>	<b>-2.03</b>	<b>15.36</b>	<b>7.79</b>	<b>2.32</b>	<b>7.68</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	30	15	10	6	34	43	42	64	56	7	50	
<b>Volunteer Firefighters' Retirement - Net</b>	<b>9.39</b>	<b>-2.88</b>	<b>2.73</b>	<b>5.73</b>	<b>6.16</b>	<b>7.45</b>	<b>8.82</b>	<b>5.99</b>	<b>16.79</b>	<b>-2.64</b>	<b>14.79</b>	<b>7.16</b>	<b>1.91</b>	<b>7.17</b>	<b>07/01/1994</b>
Volunteer Firefighters' Benchmark	15.72	-5.45	0.53	5.05	5.94	7.51	N/A	N/A	20.47	-5.59	15.33	9.11	1.41	N/A	
Difference	-6.33	2.57	2.20	0.68	0.22	-0.06	N/A	N/A	-3.68	2.95	-0.54	-1.95	0.50	N/A	
<b>Volunteer Firefighters' Retirement - Gross</b>	<b>9.53</b>	<b>-2.61</b>	<b>3.25</b>	<b>6.33</b>	<b>6.70</b>	<b>7.99</b>	<b>9.38</b>	<b>6.39</b>	<b>17.46</b>	<b>-2.04</b>	<b>15.34</b>	<b>7.63</b>	<b>2.36</b>	<b>7.48</b>	<b>07/01/1994</b>
All Public Plans > \$3B Total Fund Median	8.92	-3.56	1.98	5.48	5.90	6.69	8.03	5.68	17.24	-2.79	16.08	7.95	0.57	7.67	
Rank	44	30	29	30	16	10	6	12	42	42	65	65	7	69	

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.

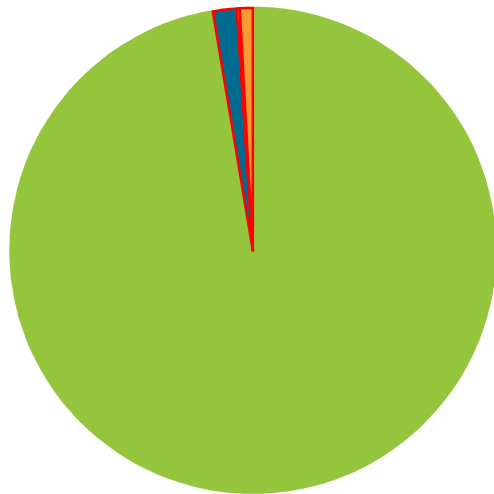


Montana Board of Investments  
 Asset Allocation by Segment  
 Retirement Plans

As of June 30, 2020

	Consolidated Asset Pension Pool (CAPP)		Short Term Investment Pool (STIP)		Total Fund	
	(\$)	%	(\$)	%	(\$)	%
Public Employees' Retirement	5,775,151,663	49.54	61,333,900	60.41	5,836,485,563	49.63
Teachers' Retirement	4,116,679,332	35.31	20,982,107	20.67	4,137,661,439	35.18
Firefighters' Retirement	454,769,177	3.90	4,567,408	4.50	459,336,585	3.91
Police Retirement	429,317,886	3.68	4,266,789	4.20	433,584,675	3.69
Sheriffs' Retirement	379,310,168	3.25	4,151,792	4.09	383,461,960	3.26
Game Wardens' Retirement	210,059,238	1.80	2,513,133	2.48	212,572,371	1.81
Highway Patrol Retirement	149,444,190	1.28	1,822,230	1.79	151,266,420	1.29
Judges' Retirement	104,563,252	0.90	1,127,196	1.11	105,690,448	0.90
Volunteer Firefighters' Retirement	39,098,370	0.34	762,355	0.75	39,860,725	0.34
<b>Retirement Plans Total Fund Composite</b>	<b>11,658,393,276</b>	<b>99.14</b>	<b>101,526,910</b>	<b>0.86</b>	<b>11,759,920,186</b>	<b>100.00</b>

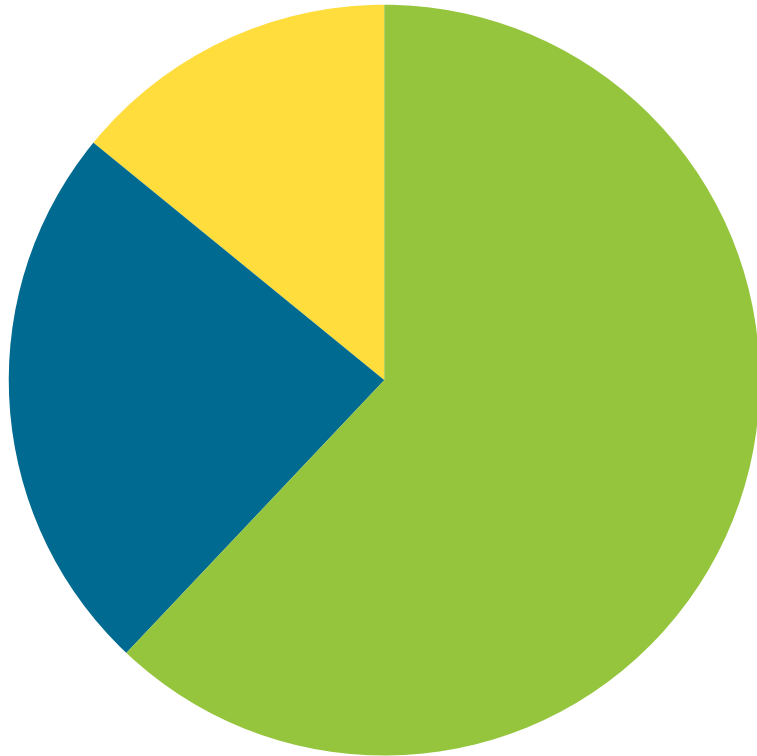
June 30, 2020 : \$11,759,920,186



Segments	Market Value (\$)	Allocation (%)
CAPP Ex Cash	11,447,941,946	97.35
CAPP Cash Pension	188,899,976	1.61
CAPP Asset Class Cash	21,551,354	0.18
Short Term Investment Pool (STIP)	101,526,910	0.86
Total Cash	311,978,240	2.65

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, 2020 : \$18,788,538,590



	Market Value (\$)	Allocation (%)
Consolidated Asset Pension Pool (CAPP)	11,658,393,247	62.05
Short Term Investment Pool	4,480,432,790	23.85
Trust Funds Investment Pool	2,649,712,552	14.10

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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Consolidated Asset Pension Pool (CAPP)</b>	<b>9.50</b>	<b>-2.89</b>	<b>2.78</b>	<b>5.84</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>17.12</b>	<b>-2.74</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.38</b>	<b>04/01/2017</b>
CAPP Custom Benchmark	15.89	-5.48	0.56	5.15	N/A	N/A	N/A	20.88	-5.73	N/A	N/A	N/A	5.58	
Difference	-6.39	2.59	2.22	0.69	N/A	N/A	N/A	-3.76	2.99	N/A	N/A	N/A	0.80	
<b>Trust Funds Investment Pool</b>	<b>3.57</b>	<b>5.36</b>	<b>7.95</b>	<b>5.36</b>	<b>4.73</b>	<b>4.68</b>	<b>4.90</b>	<b>8.98</b>	<b>0.45</b>	<b>4.01</b>	<b>4.02</b>	<b>1.83</b>	<b>6.20</b>	<b>10/01/1995</b>
Bloomberg US Agg Bond Index	2.90	6.14	8.74	5.32	4.30	3.96	3.82	8.72	0.01	3.54	2.65	0.55	5.33	
Difference	0.67	-0.78	-0.79	0.04	0.43	0.72	1.08	0.26	0.44	0.47	1.37	1.28	0.87	
<b>Short Term Investment Pool</b>	<b>0.19</b>	<b>0.58</b>	<b>1.61</b>	<b>1.82</b>	<b>1.34</b>	<b>0.99</b>	<b>0.78</b>	<b>2.28</b>	<b>1.98</b>	<b>1.11</b>	<b>0.61</b>	<b>0.22</b>	<b>2.43</b>	<b>04/01/1997</b>
Short Term Custom Index	0.03	0.32	1.26	1.69	1.24	0.93	0.72	2.14	1.95	1.15	0.52	0.21	2.34	
Difference	0.16	0.26	0.35	0.13	0.10	0.06	0.06	0.14	0.03	-0.04	0.09	0.01	0.09	
iMoney.net Money Fund (Gross) Median	0.26	0.62	1.73	1.96	1.43	1.08	0.84	2.45	2.15	1.21	0.61	0.25	2.42	
Difference	-0.07	-0.04	-0.12	-0.14	-0.09	-0.09	-0.06	-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 June 30, 2020

June 30, 2020 : \$11,658,390,344



	Market Value (\$)	Allocation (%)
Domestic Equity	3,679,059,053	31.56
Core Fixed Income	2,364,868,019	20.28
International Equity	1,995,279,459	17.11
Private Investments	1,542,141,177	13.23
Real Estate	1,010,022,045	8.66
Non-Core Fixed Income	516,656,582	4.43
Natural Resources	361,464,033	3.10
Cash Pension	188,899,976	1.62

Allocations shown may not sum up to 100% exactly due to rounding. Core Fixed Income currently consists of Investment Grade Credit, US Treasury & Agency, and TIPS. 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  
Comparative Performance  
Consolidated Asset Pension Pool (CAPP)

As of June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Domestic Equity</b>	<b>21.54</b>	<b>-4.21</b>	<b>5.24</b>	<b>8.88</b>	<b>9.13</b>	<b>11.03</b>	<b>13.18</b>	<b>30.75</b>	<b>-7.09</b>	<b>20.79</b>	<b>11.46</b>	<b>0.86</b>	<b>8.89</b>	<b>05/01/2003</b>
Domestic Equity Custom Index	22.27	-3.34	6.73	10.15	10.34	11.84	13.83	31.14	-5.20	21.05	13.03	1.01	9.73	
Difference	-0.73	-0.87	-1.49	-1.27	-1.21	-0.81	-0.65	-0.39	-1.89	-0.26	-1.57	-0.15	-0.84	
<b>International Equity</b>	<b>17.96</b>	<b>-10.13</b>	<b>-3.69</b>	<b>1.62</b>	<b>2.85</b>	<b>4.29</b>	<b>5.42</b>	<b>22.86</b>	<b>-14.99</b>	<b>28.67</b>	<b>3.87</b>	<b>-3.57</b>	<b>4.33</b>	<b>04/01/1997</b>
International Equity Custom Index	16.96	-11.24	-4.74	0.96	2.30	3.80	5.07	21.63	-14.76	27.81	4.41	-4.60	4.56	
Difference	1.00	1.11	1.05	0.66	0.55	0.49	0.35	1.23	-0.23	0.86	-0.54	1.03	-0.23	
<b>Core Fixed Income</b>	<b>3.49</b>	<b>6.74</b>	<b>8.57</b>	<b>5.09</b>	<b>4.10</b>	<b>3.96</b>	<b>4.29</b>	<b>6.90</b>	<b>0.95</b>	<b>2.29</b>	<b>3.19</b>	<b>0.79</b>	<b>6.12</b>	<b>04/01/1995</b>
Core Fixed Income Custom Index	3.01	5.88	7.73	4.68	3.83	3.64	3.63	6.81	0.67	2.46	2.85	0.55	5.48	
Difference	0.48	0.86	0.84	0.41	0.27	0.32	0.66	0.09	0.28	-0.17	0.34	0.24	0.64	
<b>Non-Core Fixed Income</b>	<b>9.03</b>	<b>-3.65</b>	<b>0.43</b>	<b>2.97</b>	<b>4.00</b>	<b>4.57</b>	<b>6.38</b>	<b>13.98</b>	<b>-2.27</b>	<b>5.99</b>	<b>12.47</b>	<b>-2.52</b>	<b>7.59</b>	<b>06/01/2009</b>
Bloomberg US HY 2% Issuer Cap Index	10.14	-3.83	0.00	3.32	4.79	4.99	6.67	14.32	-2.08	7.50	17.13	-4.43	8.56	
Difference	-1.11	0.18	0.43	-0.35	-0.79	-0.42	-0.29	-0.34	-0.19	-1.51	-4.66	1.91	-0.97	
<b>Natural Resources</b>	<b>-0.14</b>	<b>-16.45</b>	<b>-18.56</b>	<b>-4.47</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-2.18</b>	<b>5.55</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>-2.69</b>	<b>04/01/2017</b>
MSCI ACW Cmdbty Producers Index (USD) (Net)	20.15	-26.47	-26.75	-4.13	-2.89	-3.16	-1.29	13.06	-11.75	13.70	32.44	-25.83	-4.97	
Difference	-20.29	10.02	8.19	-0.34	N/A	N/A	N/A	-15.24	17.30	N/A	N/A	N/A	2.28	
<b>Real Estate</b>	<b>0.31</b>	<b>-2.36</b>	<b>0.74</b>	<b>5.53</b>	<b>7.70</b>	<b>9.02</b>	<b>9.94</b>	<b>6.97</b>	<b>9.19</b>	<b>9.17</b>	<b>8.82</b>	<b>14.27</b>	<b>3.81</b>	<b>06/01/2006</b>
Real Estate Custom Index	11.70	-18.45	-12.87	0.08	3.94	6.34	8.59	25.84	-4.57	5.99	9.08	13.86	4.60	
Difference	-11.39	16.09	13.61	5.45	3.76	2.68	1.35	-18.87	13.76	3.18	-0.26	0.41	-0.79	
<b>Cash Pension</b>	<b>0.20</b>	<b>0.73</b>	<b>1.65</b>	<b>1.82</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>2.28</b>	<b>2.00</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>1.80</b>	<b>05/01/2017</b>
Short Term Custom Index	0.03	0.32	1.26	1.69	1.24	0.93	0.72	2.14	1.95	1.15	0.52	0.21	1.66	
Difference	0.17	0.41	0.39	0.13	N/A	N/A	N/A	0.14	0.05	N/A	N/A	N/A	0.14	
<b>Private Investments*</b>	<b>-4.69</b>	<b>-4.05</b>	<b>3.23</b>	<b>9.26</b>	<b>9.28</b>	<b>10.17</b>	<b>11.58</b>	<b>12.95</b>	<b>11.55</b>	<b>15.20</b>	<b>7.37</b>	<b>7.20</b>	<b>11.65</b>	<b>05/01/2002</b>
Private Equity Custom Index	27.06	-12.66	-6.20	3.49	6.69	10.83	12.78	27.38	-9.99	20.59	20.11	3.68	10.16	
Difference	-31.75	8.61	9.43	5.77	2.59	-0.66	-1.20	-14.43	21.54	-5.39	-12.74	3.52	1.49	

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. Core Fixed Income currently consists of Investment Grade Credit, US Treasury & Agency, and TIPS. 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  
Comparative Performance  
Investment Pools

As of June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Domestic Equity</b>	<b>21.60</b>	<b>-4.10</b>	<b>5.51</b>	<b>9.21</b>	<b>9.45</b>	<b>11.35</b>	<b>13.53</b>	<b>31.13</b>	<b>-6.78</b>	<b>21.16</b>	<b>11.77</b>	<b>1.14</b>	<b>9.19</b>	<b>05/01/2003</b>
All Public Plans-US Equity Segment Median	21.87	-4.86	4.26	8.72	8.91	10.68	13.15	30.04	-5.83	20.31	12.78	0.14	9.24	
Rank	56	34	29	41	36	32	35	28	74	32	74	24	65	
Population	67	67	64	59	57	50	40	65	66	88	90	81	12	
<b>International Equity</b>	<b>18.05</b>	<b>-9.99</b>	<b>-3.36</b>	<b>1.94</b>	<b>3.19</b>	<b>4.62</b>	<b>5.78</b>	<b>23.28</b>	<b>-14.72</b>	<b>29.06</b>	<b>4.24</b>	<b>-3.25</b>	<b>4.75</b>	<b>04/01/1997</b>
All Public Plans-Intl. Equity Segment Median	17.76	-10.04	-3.05	2.08	3.17	4.87	6.52	23.71	-13.63	28.81	4.00	-2.54	N/A	
Rank	45	50	55	59	50	72	77	62	78	46	44	64	N/A	
Population	70	68	64	62	60	51	39	65	68	83	88	77	N/A	
<b>Core Fixed Income</b>	<b>3.50</b>	<b>6.77</b>	<b>8.62</b>	<b>5.14</b>	<b>4.14</b>	<b>4.00</b>	<b>4.33</b>	<b>6.94</b>	<b>1.00</b>	<b>2.34</b>	<b>3.21</b>	<b>0.82</b>	<b>6.81</b>	<b>12/01/2019</b>
All Public Plans-US Fixed Income Segment Median	4.99	5.27	7.80	5.20	4.60	4.35	4.68	9.25	-0.25	4.54	4.61	0.21	5.33	
Rank	80	19	28	54	75	69	63	86	12	90	73	28	18	
Population	72	72	69	64	63	57	45	68	72	84	90	77	70	
<b>Trust Funds Investment Pool</b>	<b>3.59</b>	<b>5.40</b>	<b>8.02</b>	<b>5.44</b>	<b>4.81</b>	<b>4.77</b>	<b>4.99</b>	<b>9.06</b>	<b>0.53</b>	<b>4.10</b>	<b>4.12</b>	<b>1.89</b>	<b>6.26</b>	<b>10/01/1995</b>
All Public Plans-US Fixed Income Segment Median	4.99	5.27	7.80	5.20	4.60	4.35	4.68	9.25	-0.25	4.54	4.61	0.21	N/A	
Rank	77	44	45	37	40	35	32	53	22	62	61	5	N/A	
Population	72	72	69	64	63	57	45	68	72	84	90	77	N/A	
<b>Real Estate</b>	<b>0.78</b>	<b>-1.35</b>	<b>2.18</b>	<b>7.27</b>	<b>9.33</b>	<b>10.60</b>	<b>11.58</b>	<b>8.65</b>	<b>11.12</b>	<b>10.91</b>	<b>10.26</b>	<b>15.68</b>	<b>5.29</b>	<b>06/01/2006</b>
All Public Plans-Real Estate Segment Median	-0.87	-0.15	3.53	7.21	8.82	10.53	11.42	7.65	9.04	8.92	9.98	13.42	N/A	
Rank	22	76	75	48	31	50	43	39	15	27	47	10	N/A	
Population	47	44	35	28	21	16	12	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. Core Fixed Income currently consists of Investment Grade Credit, US Treasury & Agency, and TIPS. Non-Core Fixed Income currently consists of High Yield.

Montana Board of Investments  
Comparative Performance  
Equity Composites

As of June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Domestic Large Cap Equity - Net</b>	<b>21.49</b>	<b>-2.27</b>	<b>8.18</b>	<b>10.77</b>	<b>10.63</b>	<b>12.17</b>	<b>13.94</b>	<b>31.06</b>	<b>-4.71</b>	<b>21.66</b>	<b>11.30</b>	<b>1.76</b>	<b>8.12</b>	<b>12/01/2006</b>
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	8.28	
Difference	0.95	0.81	0.67	0.04	-0.10	0.04	-0.05	-0.43	-0.33	-0.17	-0.66	0.38	-0.16	
<b>Domestic Large Cap Equity - Gross</b>	<b>21.54</b>	<b>-2.18</b>	<b>8.37</b>	<b>10.97</b>	<b>10.80</b>	<b>12.35</b>	<b>14.15</b>	<b>31.29</b>	<b>-4.52</b>	<b>21.82</b>	<b>11.45</b>	<b>1.91</b>	<b>8.35</b>	<b>12/01/2006</b>
IM U.S. Large Cap Equity (SA+CF) Median	20.55	-4.30	5.69	9.71	9.63	11.64	13.71	30.22	-5.12	21.71	11.02	0.94	8.33	
Rank	42	35	34	37	35	37	39	41	44	49	47	39	50	
<b>Domestic Large Cap Active - Net</b>	<b>21.11</b>	<b>-2.42</b>	<b>7.65</b>	<b>10.27</b>	<b>10.05</b>	<b>11.99</b>	<b>13.79</b>	<b>31.03</b>	<b>-5.88</b>	<b>21.85</b>	<b>9.63</b>	<b>2.40</b>	<b>7.60</b>	<b>07/01/2007</b>
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	7.99	
Difference	0.57	0.66	0.14	-0.46	-0.68	-0.14	-0.20	-0.46	-1.50	0.02	-2.33	1.02	-0.39	
<b>Domestic Large Cap Active - Gross</b>	<b>21.29</b>	<b>-2.11</b>	<b>8.32</b>	<b>10.90</b>	<b>10.63</b>	<b>12.56</b>	<b>14.36</b>	<b>31.82</b>	<b>-5.34</b>	<b>22.40</b>	<b>10.12</b>	<b>2.88</b>	<b>8.12</b>	<b>07/01/2007</b>
IM U.S. Large Cap Equity (SA+CF) Median	20.55	-4.29	5.69	9.75	9.65	11.65	13.73	30.22	-5.12	21.71	11.02	0.94	8.04	
Rank	43	35	34	37	40	35	36	34	54	43	57	32	47	
<b>Domestic Mid Cap Equity - Net</b>	<b>24.06</b>	<b>-12.81</b>	<b>-6.80</b>	<b>3.04</b>	<b>4.51</b>	<b>7.24</b>	<b>10.64</b>	<b>28.03</b>	<b>-10.75</b>	<b>19.45</b>	<b>12.30</b>	<b>-3.29</b>	<b>7.39</b>	<b>01/01/2005</b>
Russell Mid Cap Index	24.61	-9.13	-2.24	5.79	6.76	9.40	12.35	30.54	-9.06	18.52	13.80	-2.44	8.49	
Difference	-0.55	-3.68	-4.56	-2.75	-2.25	-2.16	-1.71	-2.51	-1.69	0.93	-1.50	-0.85	-1.10	
<b>Domestic Mid Cap Equity - Gross</b>	<b>24.06</b>	<b>-12.81</b>	<b>-6.80</b>	<b>3.34</b>	<b>4.94</b>	<b>7.74</b>	<b>11.17</b>	<b>28.11</b>	<b>-10.28</b>	<b>20.18</b>	<b>12.97</b>	<b>-2.71</b>	<b>7.87</b>	<b>01/01/2005</b>
IM U.S. Mid Cap Equity (SA+CF) Median	23.94	-9.35	-2.24	4.98	6.25	8.93	12.33	30.14	-9.10	19.52	12.71	-1.12	9.06	
Rank	48	64	67	57	67	69	72	65	59	48	49	69	81	
<b>Domestic Small Cap Equity - Net</b>	<b>21.74</b>	<b>-16.00</b>	<b>-10.54</b>	<b>1.45</b>	<b>3.71</b>	<b>7.26</b>	<b>10.53</b>	<b>25.76</b>	<b>-10.51</b>	<b>15.65</b>	<b>19.31</b>	<b>-1.61</b>	<b>10.27</b>	<b>03/01/2003</b>
Russell 2000 Index	25.42	-12.98	-6.63	2.01	4.29	7.17	10.50	25.53	-11.01	14.65	21.31	-4.41	9.79	
Difference	-3.68	-3.02	-3.91	-0.56	-0.58	0.09	0.03	0.23	0.50	1.00	-2.00	2.80	0.48	
<b>Domestic Small Cap Equity - Gross</b>	<b>21.84</b>	<b>-15.85</b>	<b>-10.22</b>	<b>1.88</b>	<b>4.23</b>	<b>7.84</b>	<b>11.17</b>	<b>26.25</b>	<b>-10.09</b>	<b>16.27</b>	<b>19.97</b>	<b>-0.93</b>	<b>10.80</b>	<b>03/01/2003</b>
IM U.S. Small Cap Equity (SA+CF) Median	25.30	-14.21	-7.74	2.01	4.61	7.77	11.24	25.85	-10.64	15.12	20.87	-2.32	11.03	
Rank	71	56	58	51	55	50	52	48	48	44	57	36	55	

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, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>International Large Cap Passive - Net</b>	<b>16.27</b>	<b>-10.82</b>	<b>-4.61</b>	<b>1.34</b>	<b>2.70</b>	<b>4.04</b>	<b>5.24</b>	<b>21.59</b>	<b>-14.04</b>	<b>27.79</b>	<b>4.87</b>	<b>-4.71</b>	<b>5.54</b>	<b>06/01/2009</b>
MSCI ACW Ex US Index (USD) (Net)	16.12	-11.00	-4.80	1.13	2.26	3.71	4.97	21.51	-14.20	27.19	4.50	-5.66	5.31	
Difference	0.15	0.18	0.19	0.21	0.44	0.33	0.27	0.08	0.16	0.60	0.37	0.95	0.23	
<b>International Large Cap Passive - Gross</b>	<b>16.29</b>	<b>-10.79</b>	<b>-4.56</b>	<b>1.40</b>	<b>2.77</b>	<b>4.12</b>	<b>5.32</b>	<b>21.66</b>	<b>-13.98</b>	<b>27.88</b>	<b>4.96</b>	<b>-4.63</b>	<b>5.62</b>	<b>06/01/2009</b>
<b>International Equity Active - Net</b>	<b>20.03</b>	<b>-9.63</b>	<b>-2.49</b>	<b>2.18</b>	<b>3.81</b>	<b>5.22</b>	<b>6.28</b>	<b>25.83</b>	<b>-16.18</b>	<b>30.82</b>	<b>2.63</b>	<b>0.41</b>	<b>3.32</b>	<b>04/01/1997</b>
MSCI ACW Ex US Index (USD) (Net)	16.12	-11.00	-4.80	1.13	2.26	3.71	4.97	21.51	-14.20	27.19	4.50	-5.66	N/A	
Difference	3.91	1.37	2.31	1.05	1.55	1.51	1.31	4.32	-1.98	3.63	-1.87	6.07	N/A	
<b>International Equity Active - Gross</b>	<b>20.18</b>	<b>-9.40</b>	<b>-1.98</b>	<b>2.71</b>	<b>4.36</b>	<b>5.75</b>	<b>6.80</b>	<b>26.48</b>	<b>-15.73</b>	<b>31.50</b>	<b>3.17</b>	<b>0.90</b>	<b>3.83</b>	<b>04/01/1997</b>
IM International Large Cap Core Equity (SA+CF) Median	16.81	-10.26	-3.28	1.99	2.69	4.87	7.09	23.88	-14.63	26.49	1.52	0.25	6.12	
Rank	15	45	42	39	24	30	56	28	67	13	30	42	100	
<b>International Value - Net</b>	<b>14.88</b>	<b>-13.70</b>	<b>-8.83</b>	<b>0.45</b>	<b>2.60</b>	<b>4.08</b>	<b>5.19</b>	<b>20.76</b>	<b>-13.97</b>	<b>30.72</b>	<b>5.59</b>	<b>-5.94</b>	<b>1.37</b>	<b>11/01/2006</b>
MSCI ACW Ex US Val Index (USD) (Net)	12.76	-19.43	-15.26	-3.95	-1.25	0.94	2.79	15.72	-13.97	22.66	8.92	-10.06	0.63	
Difference	2.12	5.73	6.43	4.40	3.85	3.14	2.40	5.04	0.00	8.06	-3.33	4.12	0.74	
<b>International Value - Gross</b>	<b>15.01</b>	<b>-13.48</b>	<b>-8.37</b>	<b>0.97</b>	<b>3.14</b>	<b>4.63</b>	<b>5.76</b>	<b>21.37</b>	<b>-13.52</b>	<b>31.39</b>	<b>6.17</b>	<b>-5.46</b>	<b>1.94</b>	<b>11/01/2006</b>
IM International Large Cap Value Equity (SA+CF) Median	15.40	-15.07	-8.27	-1.19	1.20	3.39	5.97	21.19	-14.51	26.02	4.28	-1.92	3.12	
Rank	54	40	51	31	28	33	57	47	40	12	30	82	77	
<b>International Growth - Net</b>	<b>21.52</b>	<b>-4.29</b>	<b>4.43</b>	<b>4.92</b>	<b>5.17</b>	<b>5.86</b>	<b>6.85</b>	<b>31.39</b>	<b>-16.09</b>	<b>28.01</b>	<b>0.51</b>	<b>1.69</b>	<b>3.27</b>	<b>11/01/2006</b>
MSCI ACW Ex US Grth Index (USD) (Net)	19.11	-2.62	5.80	6.07	5.61	6.32	7.04	27.34	-14.43	32.01	0.12	-1.25	4.11	
Difference	2.41	-1.67	-1.37	-1.15	-0.44	-0.46	-0.19	4.05	-1.66	-4.00	0.39	2.94	-0.84	
<b>International Growth - Gross</b>	<b>21.68</b>	<b>-4.03</b>	<b>5.00</b>	<b>5.50</b>	<b>5.77</b>	<b>6.43</b>	<b>7.41</b>	<b>32.10</b>	<b>-15.61</b>	<b>28.74</b>	<b>1.12</b>	<b>2.21</b>	<b>3.82</b>	<b>11/01/2006</b>
IM International Large Cap Growth Equity (SA+CF) Median	19.95	-3.20	4.55	6.36	5.47	6.91	8.49	28.31	-13.90	31.38	-0.04	2.31	4.95	
Rank	31	58	48	57	49	61	71	19	66	68	35	51	78	
<b>International Small Cap - Net</b>	<b>24.82</b>	<b>-11.71</b>	<b>-3.61</b>	<b>0.29</b>	<b>3.05</b>	<b>5.60</b>	<b>7.19</b>	<b>23.91</b>	<b>-18.90</b>	<b>33.61</b>	<b>1.84</b>	<b>5.16</b>	<b>3.71</b>	<b>09/01/2006</b>
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	22.83	-12.80	-4.34	-0.17	2.50	4.74	6.05	22.42	-18.20	31.65	3.91	2.60	4.13	
Difference	1.99	1.09	0.73	0.46	0.55	0.86	1.14	1.49	-0.70	1.96	-2.07	2.56	-0.42	

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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Domestic Large Cap Passive - Net</b>	<b>21.65</b>	<b>-2.13</b>	<b>8.46</b>	<b>11.09</b>	<b>10.75</b>	<b>12.16</b>	<b>14.03</b>	<b>30.99</b>	<b>-3.94</b>	<b>21.34</b>	<b>12.01</b>	<b>0.83</b>	<b>5.92</b>	<b>05/01/2000</b>
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	5.88	
Difference	1.11	0.95	0.95	0.36	0.02	0.03	0.04	-0.50	0.44	-0.49	0.05	-0.55	0.04	
<b>Domestic Large Cap Passive - Gross</b>	<b>21.65</b>	<b>-2.12</b>	<b>8.47</b>	<b>11.10</b>	<b>10.76</b>	<b>12.17</b>	<b>14.04</b>	<b>31.00</b>	<b>-3.93</b>	<b>21.35</b>	<b>12.03</b>	<b>0.84</b>	<b>5.95</b>	<b>05/01/2000</b>
IM U.S. Large Cap Index Equity (SA+CF) Median	21.51	-3.08	7.45	10.62	10.47	12.03	13.94	31.41	-4.78	21.70	12.03	0.96	6.07	
Rank	46	16	15	21	24	27	25	65	18	58	51	58	67	
<b>Domestic Large Cap Enhanced - Net</b>	<b>20.65</b>	<b>-4.56</b>	<b>5.97</b>	<b>10.61</b>	<b>10.85</b>	<b>12.39</b>	<b>14.29</b>	<b>32.81</b>	<b>-4.20</b>	<b>24.21</b>	<b>9.73</b>	<b>3.18</b>	<b>8.45</b>	<b>06/01/2006</b>
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	8.80	
Difference	0.11	-1.48	-1.54	-0.12	0.12	0.26	0.30	1.32	0.18	2.38	-2.23	1.80	-0.35	
<b>Domestic Large Cap Enhanced - Gross</b>	<b>20.73</b>	<b>-4.42</b>	<b>6.27</b>	<b>10.91</b>	<b>11.16</b>	<b>12.71</b>	<b>14.62</b>	<b>33.17</b>	<b>-3.96</b>	<b>24.53</b>	<b>10.05</b>	<b>3.50</b>	<b>8.77</b>	<b>06/01/2006</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	20.19	-4.29	5.29	9.71	9.73	11.73	13.83	29.97	-5.17	21.84	10.54	1.43	8.85	
Rank	40	52	41	28	20	24	24	14	29	20	58	25	59	
<b>Domestic Large Cap 130/30 - Net</b>	<b>21.20</b>	<b>-2.06</b>	<b>7.93</b>	<b>10.06</b>	<b>9.33</b>	<b>11.64</b>	<b>13.57</b>	<b>30.67</b>	<b>-7.10</b>	<b>20.28</b>	<b>9.54</b>	<b>1.61</b>	<b>9.28</b>	<b>03/01/2008</b>
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	9.40	
Difference	0.66	1.02	0.42	-0.67	-1.40	-0.49	-0.42	-0.82	-2.72	-1.55	-2.42	0.23	-0.12	
<b>Domestic Large Cap 130/30 - Gross</b>	<b>21.39</b>	<b>-1.73</b>	<b>8.66</b>	<b>10.88</b>	<b>10.09</b>	<b>12.40</b>	<b>14.34</b>	<b>31.57</b>	<b>-6.32</b>	<b>21.10</b>	<b>10.22</b>	<b>2.26</b>	<b>10.02</b>	<b>03/01/2008</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	20.19	-4.29	5.29	9.71	9.73	11.73	13.83	29.97	-5.17	21.84	10.54	1.43	9.41	
Rank	31	24	22	30	45	33	31	33	70	62	55	38	27	

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, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Domestic Large Cap Equity</b>														
<b>BlackRock MSCI US Equity Index (SA) - Net</b>	21.74	-2.19	8.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10.28	04/01/2019
MSCI US Index (USD) (Gross)	21.76	-2.16	8.42	11.03	10.76	12.22	14.09	31.64	-4.50	21.90	11.61	1.32	10.32	
Difference	-0.02	-0.03	-0.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.04	
<b>BlackRock MSCI US Equity Index (SA) - Gross</b>	21.74	-2.18	8.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10.29	04/01/2019
<b>SPDR S&amp;P 500 ETF (SPY) - Net</b>	20.21	-2.38	8.69	10.65	N/A	N/A	N/A	31.49	-5.30	N/A	N/A	N/A	10.65	07/01/2017
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	10.73	
Difference	-0.33	0.70	1.18	-0.08	N/A	N/A	N/A	0.00	-0.92	N/A	N/A	N/A	-0.08	
<b>Northern Trust MSCI US Index (SA) - Net</b>	21.75	-2.17	8.41	N/A	N/A	N/A	N/A	31.70	N/A	N/A	N/A	N/A	11.28	11/01/2018
MSCI US Index (USD) (Gross)	21.76	-2.16	8.42	11.03	10.76	12.22	14.09	31.64	-4.50	21.90	11.61	1.32	11.27	
Difference	-0.01	-0.01	-0.01	N/A	N/A	N/A	N/A	0.06	N/A	N/A	N/A	N/A	0.01	
<b>Northern Trust MSCI US Index (SA) - Gross</b>	21.75	-2.16	8.42	N/A	N/A	N/A	N/A	31.71	N/A	N/A	N/A	N/A	11.30	11/01/2018
IM U.S. Large Cap Core Equity (SA+CF) Median	20.19	-4.29	5.29	9.71	9.73	11.73	13.83	29.97	-5.17	21.84	10.54	1.43	9.19	
Rank	28	28	24	N/A	N/A	N/A	N/A	32	N/A	N/A	N/A	N/A	28	
<b>T. Rowe U.S. Structured Research (SA) - Net</b>	20.65	-4.56	5.97	10.61	10.99	12.44	14.15	32.81	-4.20	23.94	10.68	3.30	9.20	06/01/2006
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	8.80	
Difference	0.11	-1.48	-1.54	-0.12	0.26	0.31	0.16	1.32	0.18	2.11	-1.28	1.92	0.40	
<b>T. Rowe U.S. Structured Research (SA) - Gross</b>	20.73	-4.42	6.27	10.90	11.29	12.75	14.48	33.17	-3.96	24.24	10.98	3.61	9.52	06/01/2006
IM U.S. Large Cap Core Equity (SA+CF) Median	20.19	-4.29	5.29	9.71	9.73	11.73	13.83	29.97	-5.17	21.84	10.54	1.43	8.85	
Rank	40	52	41	28	17	24	29	14	29	24	46	25	30	
<b>Jacobs Levy 130/30 (SA) - Net</b>	19.26	-5.64	3.51	N/A	N/A	N/A	N/A	31.63	N/A	N/A	N/A	N/A	6.50	04/01/2018
MSCI US Index (USD) (Gross)	21.76	-2.16	8.42	11.03	10.76	12.22	14.09	31.64	-4.50	21.90	11.61	1.32	9.94	
Difference	-2.50	-3.48	-4.91	N/A	N/A	N/A	N/A	-0.01	N/A	N/A	N/A	N/A	-3.44	
<b>Jacobs Levy 130/30 (SA) - Gross</b>	19.45	-5.32	4.22	N/A	N/A	N/A	N/A	32.55	N/A	N/A	N/A	N/A	7.30	04/01/2018
IM U.S. Large Cap Core Equity (SA+CF) Median	20.19	-4.29	5.29	9.71	9.73	11.73	13.83	29.97	-5.17	21.84	10.54	1.43	7.83	
Rank	59	61	62	N/A	N/A	N/A	N/A	22	N/A	N/A	N/A	N/A	57	

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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>J.P. Morgan 130/30 (SA) - Net</b>	<b>23.32</b>	<b>2.04</b>	<b>13.01</b>	<b>11.66</b>	<b>10.45</b>	<b>12.69</b>	<b>14.23</b>	<b>30.55</b>	<b>-6.93</b>	<b>22.86</b>	<b>10.30</b>	<b>0.01</b>	<b>10.54</b>	<b>03/01/2008</b>
S&P 500 Index (Cap Wtd)	20.54	-3.08	7.51	10.73	10.73	12.13	13.99	31.49	-4.38	21.83	11.96	1.38	9.40	
Difference	2.78	5.12	5.50	0.93	-0.28	0.56	0.24	-0.94	-2.55	1.03	-1.66	-1.37	1.14	
<b>J.P. Morgan 130/30 (SA) - Gross</b>	<b>23.52</b>	<b>2.39</b>	<b>13.76</b>	<b>12.50</b>	<b>11.27</b>	<b>13.51</b>	<b>15.06</b>	<b>31.42</b>	<b>-6.13</b>	<b>23.79</b>	<b>11.09</b>	<b>0.72</b>	<b>11.34</b>	<b>03/01/2008</b>
IM U.S. Large Cap Core Equity (SA+CF) Median	20.19	-4.29	5.29	9.71	9.73	11.73	13.83	29.97	-5.17	21.84	10.54	1.43	9.41	
Rank	10	7	7	13	18	10	16	36	67	28	45	59	4	
<b>Domestic Mid Cap Equity</b>														
<b>iShares:Core S&amp;P Md-Cp (IJH) - Net</b>	<b>24.06</b>	<b>-12.81</b>	<b>-6.80</b>	<b>1.30</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>26.24</b>	<b>-13.95</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>1.30</b>	<b>07/01/2017</b>
S&P Mid Cap 400 Index (Cap Wtd)	24.07	-12.78	-6.70	2.39	5.22	8.04	11.34	26.20	-11.08	16.24	20.74	-2.18	2.39	
Difference	-0.01	-0.03	-0.10	-1.09	N/A	N/A	N/A	0.04	-2.87	N/A	N/A	N/A	-1.09	

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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Domestic Small Cap Equity</b>														
<b>Vaughan Nelson Management (SA) - Net</b>	<b>16.38</b>	<b>-18.00</b>	<b>-13.36</b>	<b>-1.43</b>	1.06	5.82	9.37	25.34	<b>-13.78</b>	6.83	20.50	0.16	7.15	03/01/2007
Russell 2000 Val Index	18.91	<b>-23.50</b>	<b>-17.48</b>	<b>-4.35</b>	1.26	3.98	7.82	22.39	<b>-12.86</b>	7.84	31.74	<b>-7.47</b>	3.64	
Difference	<b>-2.53</b>	5.50	4.12	2.92	<b>-0.20</b>	1.84	1.55	2.95	<b>-0.92</b>	<b>-1.01</b>	<b>-11.24</b>	7.63	3.51	
<b>Vaughan Nelson Management (SA) - Gross</b>	<b>16.58</b>	<b>-17.69</b>	<b>-12.71</b>	<b>-0.70</b>	1.84	6.66	10.25	26.25	<b>-13.13</b>	7.66	21.49	0.98	8.04	03/01/2007
IM U.S. Small Cap Value Equity (SA+CF) Median	21.18	<b>-21.45</b>	<b>-15.08</b>	<b>-2.48</b>	1.93	5.30	9.48	25.17	<b>-14.22</b>	11.60	26.60	<b>-4.27</b>	5.88	
Rank	87	26	33	29	53	22	31	35	38	77	76	9	12	
<b>BlackRock MSCI US Sm Cap Equity Index (CF) - Net</b>	<b>27.06</b>	<b>-12.62</b>	<b>-6.18</b>	3.48	N/A	N/A	N/A	27.30	<b>-9.96</b>	N/A	N/A	N/A	3.48	07/01/2017
MSCI US Sm Cap Index (USD) (Net)	26.92	<b>-12.88</b>	<b>-6.67</b>	2.99	4.80	7.69	11.07	26.74	<b>-10.40</b>	16.75	19.15	<b>-4.11</b>	2.99	
Difference	0.14	0.26	0.49	0.49	N/A	N/A	N/A	0.56	0.44	N/A	N/A	N/A	0.49	
<b>BlackRock MSCI US Sm Cap Equity Index (CF) - Gross</b>	<b>27.06</b>	<b>-12.61</b>	<b>-6.15</b>	3.52	N/A	N/A	N/A	27.34	<b>-9.93</b>	N/A	N/A	N/A	3.52	07/01/2017
<b>DFA US Sm Cap Tr (CF) - Net</b>	<b>23.04</b>	<b>-16.90</b>	<b>-11.57</b>	<b>-0.96</b>	2.83	6.29	10.36	21.66	<b>-12.27</b>	11.86	24.42	<b>-2.64</b>	10.19	03/01/2003
Russell 2000 Index	25.42	<b>-12.98</b>	<b>-6.63</b>	2.01	4.29	7.17	10.50	25.53	<b>-11.01</b>	14.65	21.31	<b>-4.41</b>	9.79	
Difference	<b>-2.38</b>	<b>-3.92</b>	<b>-4.94</b>	<b>-2.97</b>	<b>-1.46</b>	<b>-0.88</b>	<b>-0.14</b>	<b>-3.87</b>	<b>-1.26</b>	<b>-2.79</b>	3.11	1.77	0.40	
<b>DFA US Sm Cap Tr (CF) - Gross</b>	<b>23.10</b>	<b>-16.78</b>	<b>-11.28</b>	<b>-0.62</b>	3.18	6.65	10.74	22.07	<b>-11.95</b>	12.25	24.85	<b>-2.29</b>	10.51	03/01/2003
IM U.S. Small Cap Core Equity (SA+CF) Median	24.99	<b>-14.56</b>	<b>-8.51</b>	2.16	5.21	8.32	11.72	24.86	<b>-10.69</b>	15.13	20.77	<b>-1.35</b>	10.93	
Rank	68	71	72	71	74	79	72	72	64	72	21	62	65	
<b>iShares:Russ 2000 ETF (IWM) - Net</b>	<b>26.21</b>	<b>-12.48</b>	<b>-6.09</b>	N/A	N/A	N/A	N/A	25.52	N/A	N/A	N/A	N/A	<b>-1.45</b>	05/01/2018
Russell 2000 Index	25.42	<b>-12.98</b>	<b>-6.63</b>	2.01	4.29	7.17	10.50	25.53	<b>-11.01</b>	14.65	21.31	<b>-4.41</b>	<b>-1.65</b>	
Difference	0.79	0.50	0.54	N/A	N/A	N/A	N/A	<b>-0.01</b>	N/A	N/A	N/A	N/A	0.20	

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%, 0.06%, 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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>International Developed Large Cap Equity</b>														
<b>Acadian Asset Non-US Equity (SA) - Net</b>	14.78	-14.36	-9.04	0.26	4.12	5.20	6.94	19.38	-13.44	34.76	12.40	-7.75	2.23	11/01/2006
MSCI ACW Ex US Val Index (USD) (Net)	12.76	-19.43	-15.26	-3.95	-1.25	0.94	2.79	15.72	-13.97	22.66	8.92	-10.06	0.63	
Difference	2.02	5.07	6.22	4.21	5.37	4.26	4.15	3.66	0.53	12.10	3.48	2.31	1.60	
<b>Acadian Asset Non-US Equity (SA) - Gross</b>	14.91	-14.14	-8.57	0.77	4.66	5.75	7.51	19.98	-12.99	35.45	13.01	-7.26	2.80	11/01/2006
IM ACWI Ex US Value (SA+CF) Median	16.19	-14.86	-8.60	-0.76	1.20	3.46	5.94	21.34	-14.78	26.02	4.87	-3.25	3.16	
Rank	65	46	50	33	15	22	25	59	26	8	10	85	59	
<b>Lazard Asset Management (SA) - Net</b>	14.94	-13.26	-8.70	0.49	1.29	N/A	N/A	21.70	-14.32	27.00	0.22	N/A	0.93	06/01/2015
Lazard Custom Index	16.12	-11.00	-4.80	0.30	1.35	2.84	4.13	21.51	-15.55	22.66	8.92	-10.06	0.73	
Difference	-1.18	-2.26	-3.90	0.19	-0.06	N/A	N/A	0.19	1.23	4.34	-8.70	N/A	0.20	
<b>Lazard Asset Management (SA) - Gross</b>	15.08	-13.03	-8.23	1.00	1.82	N/A	N/A	22.31	-13.88	27.65	0.77	N/A	1.46	06/01/2015
IM ACWI Ex US Value (SA+CF) Median	16.19	-14.86	-8.60	-0.76	1.20	3.46	5.94	21.34	-14.78	26.02	4.87	-3.25	0.61	
Rank	64	41	49	32	41	N/A	N/A	43	35	38	86	N/A	41	
<b>BlackRock ACW Ex US SuperFund A (CF) - Net</b>	16.23	-10.87	-4.65	1.35	2.49	3.92	5.18	21.77	-13.99	27.49	4.77	-5.49	5.52	06/01/2009
MSCI ACW Ex US Index (USD) (Net)	16.12	-11.00	-4.80	1.13	2.26	3.71	4.97	21.51	-14.20	27.19	4.50	-5.66	5.31	
Difference	0.11	0.13	0.15	0.22	0.23	0.21	0.21	0.26	0.21	0.30	0.27	0.17	0.21	
<b>BlackRock ACW Ex US SuperFund A (CF) - Gross</b>	16.25	-10.84	-4.58	1.42	2.57	4.00	5.27	21.85	-13.93	27.58	4.86	-5.42	5.61	06/01/2009
IM All ACWI Ex US (SA+CF) Median	18.04	-8.10	-0.85	2.61	3.77	5.26	7.21	24.92	-14.64	28.74	2.11	-0.59	7.45	
Rank	67	65	67	62	63	71	84	65	43	62	25	84	82	
<b>iShares:MSCI EAFE ETF (EFA) - Net</b>	15.55	-10.97	-4.86	1.05	N/A	N/A	N/A	22.03	-12.88	N/A	N/A	N/A	1.05	07/01/2017
MSCI EAFE Index (USD) (Net)	14.88	-11.34	-5.13	0.81	2.05	3.93	5.73	22.01	-13.79	25.03	1.00	-0.81	0.81	
Difference	0.67	0.37	0.27	0.24	N/A	N/A	N/A	0.02	0.91	N/A	N/A	N/A	0.24	
<b>Baillie Gifford (SA) - Net</b>	25.97	0.86	12.47	7.31	7.20	N/A	N/A	34.34	-17.35	31.99	0.73	N/A	6.58	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	19.11	-2.62	5.80	6.07	5.61	6.32	7.04	27.34	-14.43	32.01	0.12	-1.25	4.97	
Difference	6.86	3.48	6.67	1.24	1.59	N/A	N/A	7.00	-2.92	-0.02	0.61	N/A	1.61	
<b>Baillie Gifford (SA) - Gross</b>	26.11	1.10	13.01	7.84	7.75	N/A	N/A	34.99	-16.93	32.66	1.28	N/A	7.12	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	20.11	-2.45	6.44	6.63	6.24	7.47	8.81	29.56	-13.78	32.56	-0.76	1.29	5.48	
Rank	10	26	14	37	30	N/A	N/A	9	85	49	33	N/A	32	

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, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Invesco (SA) - Net</b>	18.14	-8.10	-1.30	3.10	3.59	N/A	N/A	29.29	-15.17	24.92	0.32	N/A	2.91	06/01/2015
MSCI ACW Ex US Grth Index (USD) (Net)	19.11	-2.62	5.80	6.07	5.61	6.32	7.04	27.34	-14.43	32.01	0.12	-1.25	4.97	
Difference	-0.97	-5.48	-7.10	-2.97	-2.02	N/A	N/A	1.95	-0.74	-7.09	0.20	N/A	-2.06	
<b>Invesco (SA) - Gross</b>	18.31	-7.82	-0.71	3.72	4.25	N/A	N/A	30.05	-14.64	25.70	1.01	N/A	3.56	06/01/2015
IM ACWI Ex US Growth (SA+CF) Median	20.11	-2.45	6.44	6.63	6.24	7.47	8.81	29.56	-13.78	32.56	-0.76	1.29	5.48	
Rank	79	87	87	81	81	N/A	N/A	44	56	91	36	N/A	80	
<b>International Developed Small Cap Equity</b>														
<b>American Century Investment Mgmt (SA) - Net</b>	32.16	1.48	11.80	7.45	7.26	N/A	N/A	29.44	-20.76	43.80	-5.31	11.32	5.67	03/01/2014
MSCI ACW Ex US Sm Cap Grth Index (USD) (Net)	27.19	-5.83	3.30	3.21	4.36	6.35	7.19	24.61	-18.27	33.64	-0.28	6.50	3.81	
Difference	4.97	7.31	8.50	4.24	2.90	N/A	N/A	4.83	-2.49	10.16	-5.03	4.82	1.86	
<b>American Century Investment Mgmt (SA) - Gross</b>	32.41	1.91	12.73	8.35	8.16	N/A	N/A	30.50	-20.09	44.99	-4.49	12.25	6.56	03/01/2014
IM ACWI Ex US Growth (SA+CF) Median	20.11	-2.45	6.44	6.63	6.24	7.47	8.81	29.56	-13.78	32.56	-0.76	1.29	5.48	
Rank	3	20	16	25	22	N/A	N/A	42	100	6	79	1	28	
<b>BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Net</b>	22.90	-12.58	-4.06	0.16	2.79	5.02	N/A	22.68	-17.85	31.96	4.26	2.87	5.48	02/01/2012
MSCI ACWI Ex US Sm Cap Index IMI (USD) (Net)	22.83	-12.80	-4.34	-0.17	2.50	4.74	6.05	22.42	-18.20	31.65	3.91	2.60	5.21	
Difference	0.07	0.22	0.28	0.33	0.29	0.28	N/A	0.26	0.35	0.31	0.35	0.27	0.27	
<b>BlackRock MSCI ACW Ex US Sm Cap Index (CF) - Gross</b>	22.93	-12.60	-3.95	0.27	2.94	5.17	N/A	22.90	-17.74	32.15	4.44	3.04	5.64	02/01/2012
<b>DFA Intl Sm Co;l (DFISX) - Net</b>	20.99	-15.56	-6.62	-1.84	2.43	5.11	6.90	24.21	-19.41	30.24	5.74	5.89	6.40	11/01/2004
MSCI Wrld Ex US Sm Cap Index (USD) (Net)	21.66	-12.87	-3.20	0.53	3.56	5.78	7.26	25.41	-18.07	31.04	4.32	5.46	6.24	
Difference	-0.67	-2.69	-3.42	-2.37	-1.13	-0.67	-0.36	-1.20	-1.34	-0.80	1.42	0.43	0.16	
<b>Templeton Investment Counsel (SA) - Net</b>	23.50	-15.28	-8.63	-1.43	1.11	N/A	N/A	24.17	-18.48	33.07	-1.13	1.81	1.54	03/01/2014
Templeton Custom Index	22.83	-12.80	-4.34	-1.02	2.17	4.24	5.69	22.42	-19.75	29.72	8.24	-1.25	1.52	
Difference	0.67	-2.48	-4.29	-0.41	-1.06	N/A	N/A	1.75	1.27	3.35	-9.37	3.06	0.02	
<b>Templeton Investment Counsel (SA) - Gross</b>	23.74	-14.91	-7.85	-0.60	2.00	N/A	N/A	25.20	-17.78	34.21	-0.23	2.73	2.43	03/01/2014
IM ACWI Ex US Value (SA+CF) Median	16.19	-14.86	-8.60	-0.76	1.20	3.46	5.94	21.34	-14.78	26.02	4.87	-3.25	1.24	
Rank	1	53	48	50	41	N/A	N/A	26	84	8	89	9	39	

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, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>International Emerging Equity</b>														
<b>BlackRock MSCI Emg Mkts Index NL (CF) - Net</b>	18.03	-9.81	-3.54	1.72	2.66	3.00	N/A	18.12	-14.69	37.05	10.85	-15.15	1.95	02/01/2012
MSCI Emg Mkts Index (USD) (Net)	18.08	-9.78	-3.39	1.90	2.86	3.22	3.27	18.44	-14.58	37.28	11.19	-14.92	2.18	
Difference	-0.05	-0.03	-0.15	-0.18	-0.20	-0.22	N/A	-0.32	-0.11	-0.23	-0.34	-0.23	-0.23	
<b>BlackRock MSCI Emg Mkts Index NL (CF) - Gross</b>	18.06	-9.76	-3.43	1.83	2.79	3.16	N/A	18.25	-14.60	37.16	11.08	-14.99	2.12	02/01/2012
<b>iShares:MSCI Em Mkts (EEM) - Net</b>	17.71	-10.31	-4.26	0.74	N/A	N/A	N/A	18.12	-16.45	36.86	N/A	N/A	5.63	01/01/2017
MSCI Emg Mkts Index (USD) (Net)	18.08	-9.78	-3.39	1.90	2.86	3.22	3.27	18.44	-14.58	37.28	11.19	-14.92	6.66	
Difference	-0.37	-0.53	-0.87	-1.16	N/A	N/A	N/A	-0.32	-1.87	-0.42	N/A	N/A	-1.03	
<b>DFA Emg Mkts Sm Cap;I (DEMSX) - Net</b>	26.52	-13.41	-9.27	-1.89	N/A	N/A	N/A	14.88	-17.56	N/A	N/A	N/A	1.39	02/01/2017
MSCI Emg Mkts Sm Cap Index (USD) (Net)	27.14	-12.74	-8.82	-2.95	-1.38	0.96	1.78	11.51	-18.59	33.84	2.28	-6.85	0.37	
Difference	-0.62	-0.67	-0.45	1.06	N/A	N/A	N/A	3.37	1.03	N/A	N/A	N/A	1.02	

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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>US Fixed Income Aggregate - Net</b>	<b>3.15</b>	<b>6.57</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.50</b>	<b>12/01/2019</b>
Bloomberg US Agg Bond Index	2.90	6.14	8.74	5.32	4.30	3.96	3.82	8.72	0.01	3.54	2.65	0.55	6.06	
Difference	0.25	0.43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.44	
<b>TIPS Portfolio (Internal) - Net</b>	<b>4.18</b>	<b>4.54</b>	<b>6.26</b>	<b>4.18</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.96</b>	<b>-0.13</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>3.72</b>	<b>04/01/2017</b>
Bloomberg US Trsy Infl Notes 1-10 Yr Index	3.76	4.08	5.75	3.94	2.97	2.34	2.66	6.85	-0.25	1.90	4.01	-0.52	3.51	
Difference	0.42	0.46	0.51	0.24	N/A	N/A	N/A	0.11	0.12	N/A	N/A	N/A	0.21	
<b>Reams Asset Core Plus (SA) - Net</b>	<b>8.13</b>	<b>12.83</b>	<b>15.45</b>	<b>7.69</b>	<b>5.77</b>	<b>4.90</b>	<b>5.13</b>	<b>8.08</b>	<b>1.31</b>	<b>3.21</b>	<b>4.18</b>	<b>0.07</b>	<b>6.36</b>	<b>10/01/2008</b>
Reams Custom Index	3.81	5.17	7.75	5.00	4.32	4.05	4.06	8.72	0.01	3.83	3.91	0.43	4.87	
Difference	4.32	7.66	7.70	2.69	1.45	0.85	1.07	-0.64	1.30	-0.62	0.27	-0.36	1.49	
<b>Reams Asset Core Plus (SA) - Gross</b>	<b>8.17</b>	<b>12.94</b>	<b>15.66</b>	<b>7.89</b>	<b>5.95</b>	<b>5.09</b>	<b>5.32</b>	<b>8.28</b>	<b>1.49</b>	<b>3.38</b>	<b>4.35</b>	<b>0.24</b>	<b>6.55</b>	<b>10/01/2008</b>
IM U.S. Broad Market Core+ FI (SA+CF) Median	5.90	5.29	8.20	5.49	4.81	4.57	4.90	9.86	-0.32	4.79	4.69	0.29	6.07	
Rank	17	1	1	2	7	21	23	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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Neuberger Berman High Yield (SA) - Net</b>	9.13	-4.17	-0.19	2.86	4.02	4.39	6.19	13.75	-1.99	5.80	14.98	-4.32	6.39	01/01/2010
Bloomberg US HY 2% Issuer Cap Index	10.14	-3.83	0.00	3.32	4.79	4.99	6.67	14.32	-2.08	7.50	17.13	-4.43	6.78	
Difference	-1.01	-0.34	-0.19	-0.46	-0.77	-0.60	-0.48	-0.57	0.09	-1.70	-2.15	0.11	-0.39	
<b>Neuberger Berman High Yield (SA) - Gross</b>	9.24	-3.97	0.25	3.31	4.48	4.86	6.67	14.26	-1.56	6.27	15.50	-3.89	6.87	01/01/2010
IM U.S. High Yield Bonds (SA+CF) Median	9.15	-3.74	0.11	3.31	4.47	4.86	6.70	14.17	-1.64	7.50	14.07	-2.11	6.82	
Rank	48	56	47	51	50	51	52	50	49	79	33	74	46	
<b>Oaktree US High Yield (SA) (CAPP) - Net</b>	9.32	-3.87	0.48	N/A	N/A	N/A	N/A	15.44	-3.99	N/A	N/A	N/A	2.57	01/01/2018
Bloomberg US HY 2% Issuer Cap Index	10.14	-3.83	0.00	3.32	4.79	4.99	6.67	14.32	-2.08	7.50	17.13	-4.43	2.99	
Difference	-0.82	-0.04	0.48	N/A	N/A	N/A	N/A	1.12	-1.91	N/A	N/A	N/A	-0.42	
<b>Oaktree US High Yield (SA) (CAPP) - Gross</b>	9.44	-3.65	0.97	N/A	N/A	N/A	N/A	16.02	-3.47	N/A	N/A	N/A	3.09	01/01/2018
IM U.S. High Yield Bonds (SA+CF) Median	9.15	-3.74	0.11	3.31	4.47	4.86	6.70	14.17	-1.66	7.50	14.07	-2.11	2.99	
Rank	43	49	36	N/A	N/A	N/A	N/A	15	92	N/A	N/A	N/A	47	
<b>Shenkman High Yield Fixed Income (SA) (CAPP) - Net</b>	8.71	-3.19	0.90	N/A	N/A	N/A	N/A	13.65	-1.96	N/A	N/A	N/A	2.82	12/01/2017
Bloomberg US HY 2% Issuer Cap Index	10.14	-3.83	0.00	3.32	4.79	4.99	6.67	14.32	-2.08	7.50	17.13	-4.43	3.01	
Difference	-1.43	0.64	0.90	N/A	N/A	N/A	N/A	-0.67	0.12	N/A	N/A	N/A	-0.19	
<b>Shenkman High Yield Fixed Income (SA) (CAPP) - Gross</b>	8.84	-2.97	1.39	N/A	N/A	N/A	N/A	14.18	-1.46	N/A	N/A	N/A	3.32	12/01/2017
IM U.S. High Yield Bonds (SA+CF) Median	9.15	-3.74	0.11	3.31	4.47	4.86	6.70	14.17	-1.66	7.50	14.07	-2.11	3.03	
Rank	59	33	26	N/A	N/A	N/A	N/A	50	46	N/A	N/A	N/A	39	

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 June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
<b>Trust Funds Investment Pool Fixed Income</b>	<b>3.93</b>	<b>6.40</b>	<b>9.00</b>	<b>5.65</b>	<b>4.72</b>	<b>4.50</b>	<b>4.58</b>	<b>9.12</b>	<b>0.25</b>	<b>3.83</b>	<b>3.44</b>	<b>1.03</b>	<b>6.12</b>	<b>10/01/1995</b>
Bloomberg US Agg Bond Index	2.90	6.14	8.74	5.32	4.30	3.96	3.82	8.72	0.01	3.54	2.65	0.55	5.33	
Difference	1.03	0.26	0.26	0.33	0.42	0.54	0.76	0.40	0.24	0.29	0.79	0.48	0.79	
<b>Trust Funds Investment Pool Fixed Income</b>	<b>3.93</b>	<b>6.40</b>	<b>9.00</b>	<b>5.65</b>	<b>4.72</b>	<b>4.50</b>	<b>4.58</b>	<b>9.12</b>	<b>0.25</b>	<b>3.83</b>	<b>3.44</b>	<b>1.03</b>	<b>6.12</b>	<b>10/01/1995</b>
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	4.42	6.24	8.93	5.57	4.70	4.41	4.34	9.19	0.06	4.04	3.10	0.82	5.71	
Rank	63	46	47	45	48	41	30	55	31	61	42	28	11	
<b>Shenkman High Yield Fixed Income (SA) (TFIP) - Net</b>	<b>8.61</b>	<b>-3.43</b>	<b>0.41</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>0.41</b>	<b>07/01/2019</b>
Bloomberg US HY 2% Issuer Cap Index	10.14	-3.83	0.00	3.32	4.79	4.99	6.67	14.32	-2.08	7.50	17.13	-4.43	0.00	
Difference	-1.53	0.40	0.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.41	
<b>Shenkman High Yield Fixed Income (SA) (TFIP) - Gross</b>	<b>8.72</b>	<b>-3.21</b>	<b>0.87</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>0.87</b>	<b>07/01/2019</b>
IM U.S. High Yield Bonds (SA+CF) Median	9.15	-3.74	0.11	3.31	4.47	4.86	6.70	14.17	-1.66	7.50	14.07	-2.11	0.11	
Rank	65	38	37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37	
<b>Oaktree US High Yield (SA) (TFIP) - Net</b>	<b>9.58</b>	<b>-3.68</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>0.33</b>	<b>08/01/2019</b>
Bloomberg US HY 2% Issuer Cap Index	10.14	-3.83	0.00	3.32	4.79	4.99	6.67	14.32	-2.08	7.50	17.13	-4.43	-0.56	
Difference	-0.56	0.15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.89	
<b>Oaktree US High Yield (SA) (TFIP) - Gross</b>	<b>9.70</b>	<b>-3.45</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>0.78</b>	<b>08/01/2019</b>
IM U.S. High Yield Bonds (SA+CF) Median	9.15	-3.74	0.11	3.31	4.47	4.86	6.70	14.17	-1.66	7.50	14.07	-2.11	-0.52	
Rank	37	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	
<b>Neuberger Berman High Yield (SA) (TFIP) - Net</b>	<b>7.96</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.96</b>	<b>04/01/2020</b>
Bloomberg US HY 2% Issuer Cap Index	10.14	-3.83	0.00	3.32	4.79	4.99	6.67	14.32	-2.08	7.50	17.13	-4.43	10.14	
Difference	-2.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-2.18	
<b>Neuberger Berman High Yield (SA) (TFIP) - Gross</b>	<b>8.06</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.06</b>	<b>04/01/2020</b>
IM U.S. High Yield Bonds (SA+CF) Median	9.15	-3.74	0.11	3.31	4.47	4.86	6.70	14.17	-1.66	7.50	14.07	-2.11	9.15	
Rank	76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	76	

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. Neuberger Berman High Yield (SA) was funded in the Trust Fund Investment Pool in March 2020.



Montana Board of Investments  
Comparative Performance  
Trust Accounts

As of June 30, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Abandoned Mine Trust	0.19	0.58	1.65	1.79	1.44	1.46	1.53	2.41	1.85	1.04	1.10	0.90	3.94	12/01/1993
Barker Hughesville St Response	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.83	05/01/2020
Belt Water Treatment Plant Fund	3.35	5.06	7.48	N/A	N/A	N/A	N/A	8.56	N/A	N/A	N/A	N/A	6.73	03/01/2018
Big Sky Economic Development Fund	3.50	5.28	7.74	5.24	4.64	4.59	4.80	8.67	0.48	3.97	3.98	1.82	5.16	07/01/2005
Butte Area One Restoration	2.99	4.56	6.60	4.54	3.71	3.36	3.25	6.76	1.24	2.92	2.60	1.20	3.64	11/01/2008
Clark Fork River Restoration	2.75	4.19	6.32	4.40	3.66	3.46	3.46	7.04	0.96	2.85	2.72	1.37	3.93	11/01/2008
Coal Tax Cultural Trust Fund	3.46	5.19	7.64	5.19	4.61	4.56	4.78	8.64	0.47	3.96	3.95	1.79	6.14	12/01/1993
Coal Tax Park Acquisition	3.39	5.10	7.53	5.16	4.58	4.52	4.75	8.63	0.48	3.96	3.90	1.78	6.11	12/01/1993
East Helena Compensation Fund	1.01	2.22	3.97	3.31	2.82	2.59	N/A	5.52	1.20	2.56	2.12	0.91	2.31	01/01/2013
Endowment for Children	3.43	5.17	7.59	5.15	4.50	4.46	4.68	8.54	0.46	3.89	3.66	1.70	5.23	08/01/2007
Flying J CECRA Facilities Fund	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.80	05/01/2020
FWP License Account	0.65	1.26	2.49	2.20	1.66	1.39	1.28	3.33	1.50	1.11	0.84	0.61	2.97	11/01/1997
FWP Mitigation Trust Fund	1.72	2.75	4.48	3.26	2.28	2.03	1.93	5.46	1.14	1.15	0.67	0.87	3.96	12/01/1993
FWP Real Property Trust	3.36	5.08	7.53	5.15	4.53	4.44	4.63	8.62	0.51	3.80	3.82	1.73	5.50	12/01/1993
Group Benefits	0.84	1.61	2.98	2.54	1.94	1.76	1.63	4.01	1.37	1.30	1.16	1.06	3.91	12/01/1993
Harold Hamm Endowment	3.31	4.99	7.40	4.84	N/A	N/A	N/A	8.45	0.57	1.11	N/A	N/A	3.82	07/01/2016
Libby Asbestos Site State Cost	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.81	05/01/2020
Luttrell Pit - Operational & Maintenance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.81	05/01/2020
Montana Pole	2.65	4.22	6.42	4.54	3.97	3.86	4.01	7.48	0.74	3.38	3.23	1.56	5.23	09/01/1996
Montana State University	0.49	0.99	2.16	2.15	1.66	1.36	1.22	2.87	1.87	1.39	0.95	0.39	2.06	08/01/2004
Montana Tech-UM Agency Funds	0.33	0.79	1.88	1.97	1.47	1.13	0.95	2.56	1.91	1.22	0.72	0.27	1.84	03/01/2003
MT BOI - Clark Fork Site	3.28	4.92	7.25	4.93	4.32	4.10	4.10	8.00	0.67	3.64	3.63	1.56	4.61	11/01/2008
MT BOI UOFM Other	1.38	2.33	3.96	3.09	2.62	2.45	2.25	4.54	1.42	2.15	2.34	1.13	3.05	08/01/2002
MUS Group Insurance	0.68	1.32	2.58	2.40	1.88	1.75	N/A	3.39	1.96	1.09	1.33	1.26	1.54	10/01/2011
MUS Workers Compensation	1.14	1.93	3.47	2.93	N/A	N/A	N/A	4.43	1.62	1.80	N/A	N/A	2.36	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, 2020

	QTD	CYTD	FYTD/ 1 Year	3 Years	5 Years	7 Years	10 Years	2019	2018	2017	2016	2015	Since Incep.	Inception Date
Older Montanans Trust	3.44	5.38	7.85	5.25	4.61	4.52	4.46	8.62	0.49	3.87	3.86	1.72	5.07	08/01/2007
Permanent Coal Trust Excl Crp	2.56	3.95	5.99	4.43	4.08	4.16	4.46	6.81	1.28	3.49	3.79	2.23	5.79	12/01/1993
PERS Defined Cont Disability	13.90	-2.62	4.06	6.25	N/A	N/A	N/A	20.77	-4.88	14.57	3.42	N/A	6.02	09/01/2015
Potter Trust Fund	3.34	5.02	7.43	5.09	N/A	N/A	N/A	8.47	0.51	3.87	N/A	N/A	4.37	06/01/2016
Resource Indemnity Trust	3.57	5.36	7.88	5.32	4.71	4.66	4.86	8.88	0.44	4.01	4.02	1.82	6.22	12/01/1993
School Facilities Fund	3.42	5.17	7.54	N/A	N/A	N/A	N/A	7.88	-0.13	N/A	N/A	N/A	5.13	01/01/2018
Smelter Hill Up Restorative	2.76	4.09	5.89	4.02	3.06	2.70	2.44	5.64	1.57	1.85	1.79	0.92	2.57	11/01/2008
State Fund Insurance	5.36	3.44	6.40	5.15	4.54	4.56	4.86	9.65	0.38	5.05	3.50	2.21	5.64	12/01/1993
Streamside Tailings Operable Unit	3.17	4.79	7.11	4.84	4.27	4.22	4.37	7.92	0.57	3.69	3.58	1.69	5.47	02/01/1999
Subsequent Injury Fund	0.19	0.58	1.62	1.82	1.34	0.99	0.86	2.28	1.98	1.11	0.61	0.22	3.04	12/01/1993
Tobacco Trust Fund	3.51	5.26	7.72	5.22	4.64	4.60	4.81	8.67	0.46	3.96	3.99	1.82	5.78	01/01/2001
Treasurers	0.12	0.51	1.54	1.79	1.32	1.01	0.80	2.28	1.97	1.07	0.68	0.27	2.87	12/01/1993
Treasure State Endowment	3.44	5.31	7.80	5.29	4.68	4.62	4.83	8.81	0.46	4.00	3.98	1.82	6.09	12/01/1993
Treasure State Reg. Water System	3.53	5.30	7.80	5.28	4.67	4.61	4.82	8.80	0.45	4.00	3.96	1.82	5.93	06/01/2000
Trust and Legacy Account	3.56	5.33	7.82	5.29	4.69	4.64	4.83	8.84	0.43	4.00	4.01	1.82	6.79	07/01/1991
UCFRB Assess/Litig Cost Rec	3.29	4.98	7.40	5.07	4.48	4.39	4.48	8.50	0.49	3.77	3.84	1.65	5.83	07/01/1999
UCFRB Restoration Fund	3.37	5.13	7.60	5.18	4.47	4.37	4.58	8.52	0.67	3.73	3.52	1.70	5.74	06/01/1999
Upper Blackfoot Response	0.51	1.24	2.68	2.58	2.19	1.92	N/A	4.24	1.49	1.90	1.74	0.84	1.73	09/01/2010
Weed Control Trust	3.57	5.36	7.88	5.32	4.71	4.66	4.76	8.88	0.44	4.01	4.02	1.82	5.38	12/01/1993
Wildlife Habitat Trust	3.33	5.02	7.44	5.11	4.49	4.42	4.61	8.54	0.51	3.78	3.79	1.73	5.51	12/01/1993
Zortman/Landusky LT H2O	0.19	0.58	1.61	1.82	1.42	1.55	2.81	2.28	1.98	1.01	1.36	0.84	6.43	09/01/1999
Z/L Long Term H2O Trust Fund	0.19	0.58	1.61	1.82	1.45	1.55	2.49	2.28	1.98	1.08	1.39	1.15	4.29	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 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.

### Trust Accounts Comments

- 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.
- 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.

### 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.
- 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.

**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 June 30, 2020**

	<b>Fee Schedule</b>	<b>Market Value As of 06/30/2020 (\$)</b>
SPDR S&P 500 ETF (SPY)	0.09 % of Assets	124,538,754
iShares:Core S&P Md-Cp (IJH)	0.05 % of Assets	25,859,829
iShares:Russ 2000 ETF (IWM)	0.19 % of Assets	11,455,116
iShares:MSCI EAFE ETF (EFA)	0.32 % of Assets	141,461,880
DFA Intl Sm Co;I (DFISX)	0.52 % of Assets	81,336,739
iShares:MSCI Em Mkts (EEM)	0.68 % of Assets	60,796,797
DFA Emg Mkts Sm Cap;I (DEMSX)	0.67 % of Assets	25,054,781

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

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