



# 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.

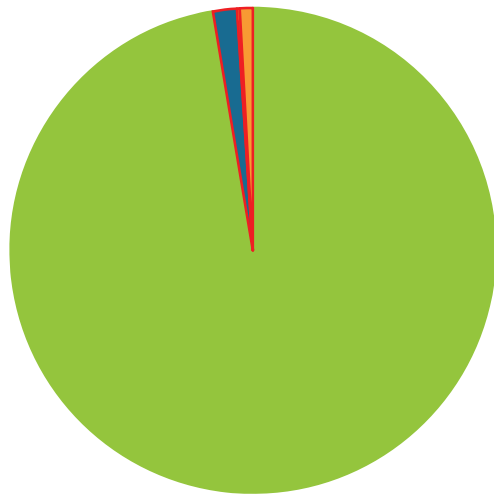


Montana Board of Investments  
 Asset Allocation by Segment  
 Retirement Plans

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>

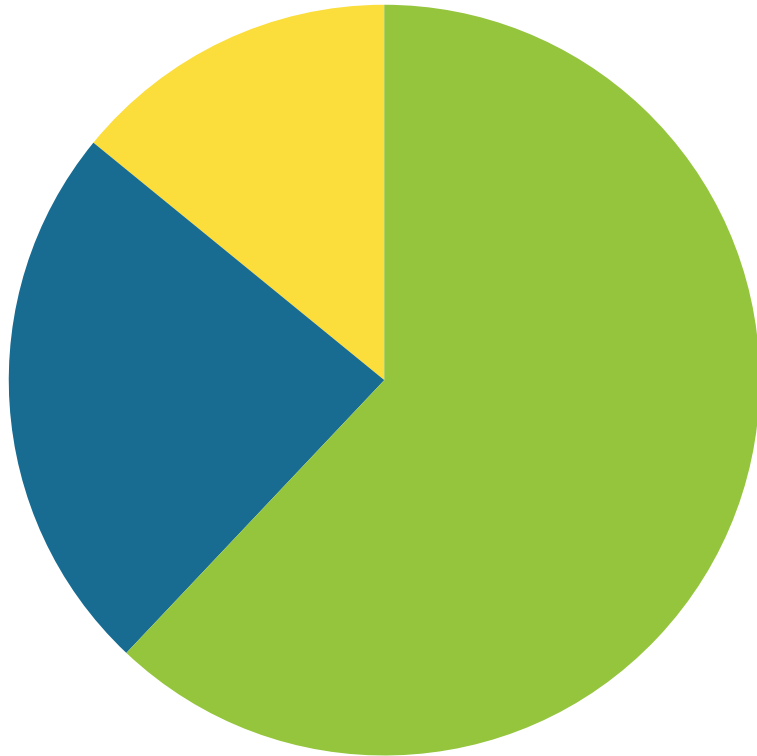
June 30, 2020 : \$11,759,920,186



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.

