

# City of Memphis

## Asset Allocation Comparison as of December 31, 2022

\$2,375,393

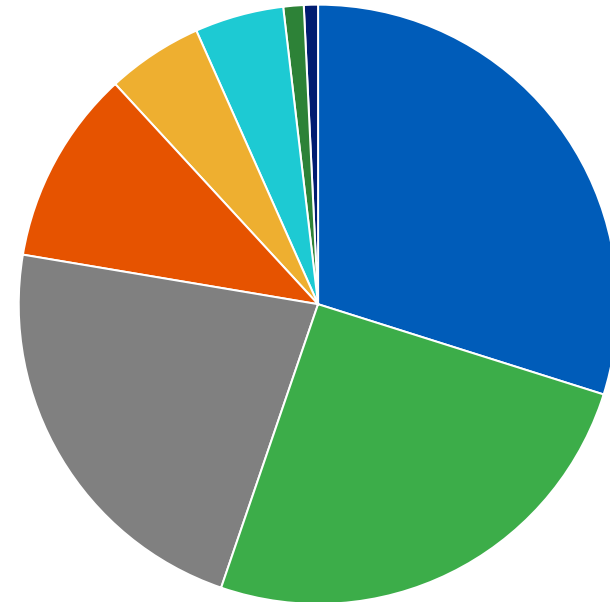
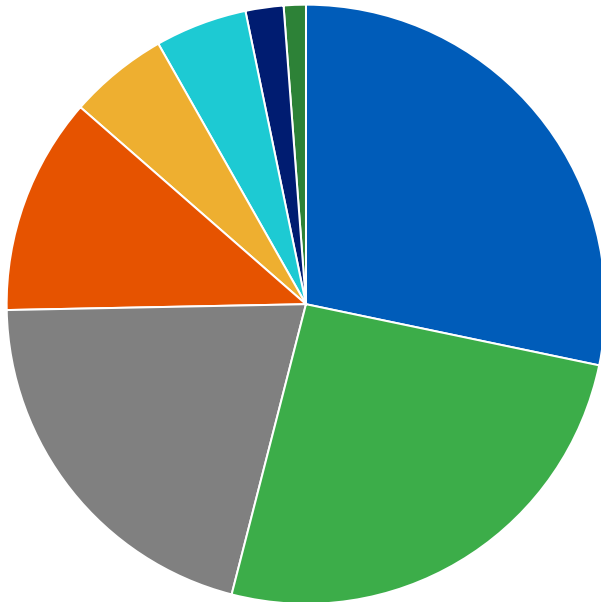
Target Allocations		Current Managers & Allocations		Difference	Range		
<b>Equity</b>							
Large Cap Equity	20.00%	\$475,079 <sup>(000)</sup>	Barrow, Hanley (large cap value) Rhumbline Russell 1000 Growth (large cap growth) Winslow (large cap growth) Rhumbline S&P 500 (large cap core)	7.21% 3.00% 2.92% 8.02%	\$171,286 <sup>(000)</sup> \$71,360 \$69,293 \$190,517	1.15%	15%-25%
Mid/SMID Cap Equity	4.00%	\$95,016	Northern Trust (mid cap core) Capital Prospects SMID Cap*	2.12% 2.19%	\$50,457 \$52,038	0.31%	0%-7%
Small Cap Equity	4.00%	\$95,016	Capital Prospects Small Cap Value* Conestoga (small cap growth) Nicholas (small cap growth)	2.39% 1.09% 0.91%	\$56,866 \$25,981 \$21,619	0.40%	0%-7%
<b>Domestic Equity</b>	<b>28.00%</b>	<b>\$665,110</b>	<b>Domestic Equity</b>	<b>29.87%</b>	<b>\$709,418</b>	<b>1.87%</b>	<b>18%-38%</b>
Developed International	15.00%	\$356,309	1607 Capital Partners Principal Global Investors Marathon Asset Mgmt Strategic Global Advisors	4.17% 4.46% 4.18% 2.41%	\$99,065 \$105,963 \$99,293 \$57,144	0.22%	10%-20%
Emerging Markets	7.00%	\$166,277	Acadian JPMorgan	3.90% 3.28%	\$92,636 \$77,797	0.17%	5%-12%
<b>International</b>	<b>22.00%</b>	<b>\$522,586</b>	<b>International</b>	<b>22.39%</b>	<b>\$531,897</b>	<b>0.39%</b>	<b>15%-30%</b>
<b>Equity Total</b>	<b>50.00%</b>	<b>\$1,187,696</b>	<b>Equity Total</b>	<b>52.26%</b>	<b>\$1,241,314</b>	<b>2.26%</b>	
<b>Fixed Income</b>							
Core Fixed Income	13.00%	\$308,801	PIMCO Prudential Core Conserv Bond Barrow Hanley High Quality Core Garcia Hamilton Aggregate	3.86% 3.72% 1.29% 3.03%	\$91,581 \$88,350 \$30,746 \$72,057	-1.10%	8%-18%
Global Fixed Income	8.00%	\$190,031	Brandywine	8.20%	\$194,851	0.20%	3%-13%
Global High Yield	5.00%	\$118,770	Mackay Shields	5.28%	\$125,466	0.28%	2%-10%
<b>Fixed Income Total</b>	<b>26.00%</b>	<b>\$617,602</b>	<b>Fixed Income Total</b>	<b>25.39%</b>	<b>\$603,051</b>	<b>-0.61%</b>	<b>18%-34%</b>

<u>Target Allocations</u>			<u>Current Managers &amp; Allocations</u>			<u>Difference</u>	<u>Range</u>	
<b><u>Real Estate</u></b>								
Core/Value Add/REITs	10.00%	\$237,539	BlackRock US Core Property Fund	3.30%	\$78,291			
			RREEF REIT II	0.87%	\$20,566			
			Vanguard REIT Index	0.14%	\$3,212			
			TA Realty Core Property Fund	1.33%	\$31,689			
			Long Wharf Real Estate Partners IV	0.04%	\$1,008	(Total Commitment \$20M, Total Drawn \$21.5M, Total Distributed \$29.6M)		
			Long Wharf Real Estate Partners Fund V	0.52%	\$12,331	(Total Commitment \$20M, Total Drawn \$20.0M, Total Distributed \$14.9M)		
			Long Wharf Real Estate Partners Fund VI	0.50%	\$11,944	(Total Commitment \$20M, Total Drawn \$18.6M, Total Distributed \$11.0M)		
			Cornerstone (Barings) Real Estate Fund X <sup>1</sup>	0.03%	\$742	(Total Commitment \$10M, Total Drawn \$11.8M, Total Distributed \$15.6M)		
			Green Cities III	0.73%	\$17,304	(Total Commitment \$20M, Total Drawn \$23.7M, Total Distributed \$10.7M)		
			Green Cities IV	0.69%	\$16,343	(Total Commitment \$20M, Total Drawn \$16.4, Total Distributed \$1.1M)		
			TA Realty Fund XI	0.56%	\$13,315	(Total Commitment \$20M, Total Drawn \$20.0M, Total Distributed \$21.7M)		
			Mesirow Financial Real Estate Value Fund III	1.14%	\$26,990	(Total Commitment \$20M, Total Drawn \$22.3M, Total Distributed \$7.3M)		
			Dune Real Estate Partners Fund IV	0.66%	\$15,758	(Total Commitment \$30M, Total Drawn \$15.6M, Total Distributed \$1.5M)		
			<i>Green Cities V (\$20M Commitment)</i>					
			<i>Long Wharf Real Estate Partners VII (\$20M Commitment)</i>					
			<i>TA Realty Fund XII (\$30M Commitment)</i>					
<b>Real Estate Total</b>	<b>10.00%</b>	<b>\$237,539</b>	<b>Real Estate Total</b>	<b>10.50%</b>	<b>\$249,493</b>	<b>0.50%</b>	<b>5%-15%</b>	
<b><u>Private Equity</u></b>								
Private Equity	5.00%	\$118,770	Pantheon Global Secondary Fund V	1.44%	\$34,285	(Total Commitment \$50M, Total Drawn \$38.7M, Total Distributed \$29.9M)		
			SSM Growth Equity Fund II*	0.31%	\$7,481	(Total Commitment \$10M, Total Drawn \$9.5, Total Distributed \$5.3M)		
			SSM Growth Equity Fund III*	0.58%	\$13,787	(Total Commitment \$10M, Total Drawn \$10.7, Total Distributed \$0.8M)		
			Neuberger Berman Crossroads XXI	2.36%	\$56,009	(Total Commitment \$50M, Total Drawn \$36.5M, Total Distributed \$25.3M)		
			Siguler Guff Small Buyout Opportunities Fund V	0.11%	\$2,543	(Total Commitment \$20M, Total Drawn \$2.3M, Total Distributed \$0.0M)		
			<i>Neuberger Berman Crossroads XXIV (\$40M commitment)</i>					
<b>Private Equity Total</b>	<b>5.00%</b>	<b>\$118,770</b>	<b>Private Equity Total</b>	<b>4.80%</b>	<b>\$114,106</b>	<b>-0.20%</b>	<b>3%-7%</b>	
<b><u>Private Credit</u></b>								
	5.00%		Brightwood Capital Fund V	0.18%	\$4,385	(Total Commitment \$10M, Total Drawn \$4.0, Total Distributed \$0.0M)		
			Churchill Middle Market Senior Loan Fund III	0.26%	\$6,156	(Total Commitment \$10M, Total Drawn \$11.3, Total Distributed \$5.5M)		
			Neuberger Berman Private Debt Fund IV	0.66%	\$15,581	(Total Commitment \$30M, Total Drawn \$15.0, Total Distributed \$1.4M)		
<b>Private Credit Total</b>	<b>5.00%</b>	<b>\$118,770</b>	<b>Private Credit Total</b>	<b>1.10%</b>	<b>\$26,122</b>	<b>-3.90%</b>	<b>3%-7%</b>	
<b><u>Hedge Fund of Funds</u></b>								
	4.00%		Aetos	2.30%	\$54,619			
			Grosvenor	2.38%	\$56,477			
			Preserver, LP*	0.50%	\$11,995			
<b>Hedge Fund of Funds Total</b>	<b>4.00%</b>	<b>\$95,016</b>	<b>Hedge Fund of Funds Total</b>	<b>5.18%</b>	<b>\$123,092</b>	<b>1.18%</b>	<b>2%-6%</b>	
Internal Account	0.00%	\$0	Internal Account	0.77%	\$18,213			
<b>Cash</b>	<b>0.00%</b>	<b>\$0</b>	<b>Cash</b>	<b>0.77%</b>	<b>\$18,213</b>	<b>0.77%</b>	<b>0%-5%</b>	
<b>Total</b>	<b>100%</b>	<b>\$2,375,393</b>	<b>Total</b>	<b>100%</b>	<b>\$2,375,393</b>			

<sup>1</sup> Cornerstone Real Estate Advisers now operates under the investment adviser name "Barings Real Estate Advisers," however; all predecessor funds retain the name Cornerstone. All new products open to new investors will operate under the name "Barings Real Estate Advisers."

September 30, 2022 : \$2,247,309,878

December 31, 2022 : \$2,375,392,573



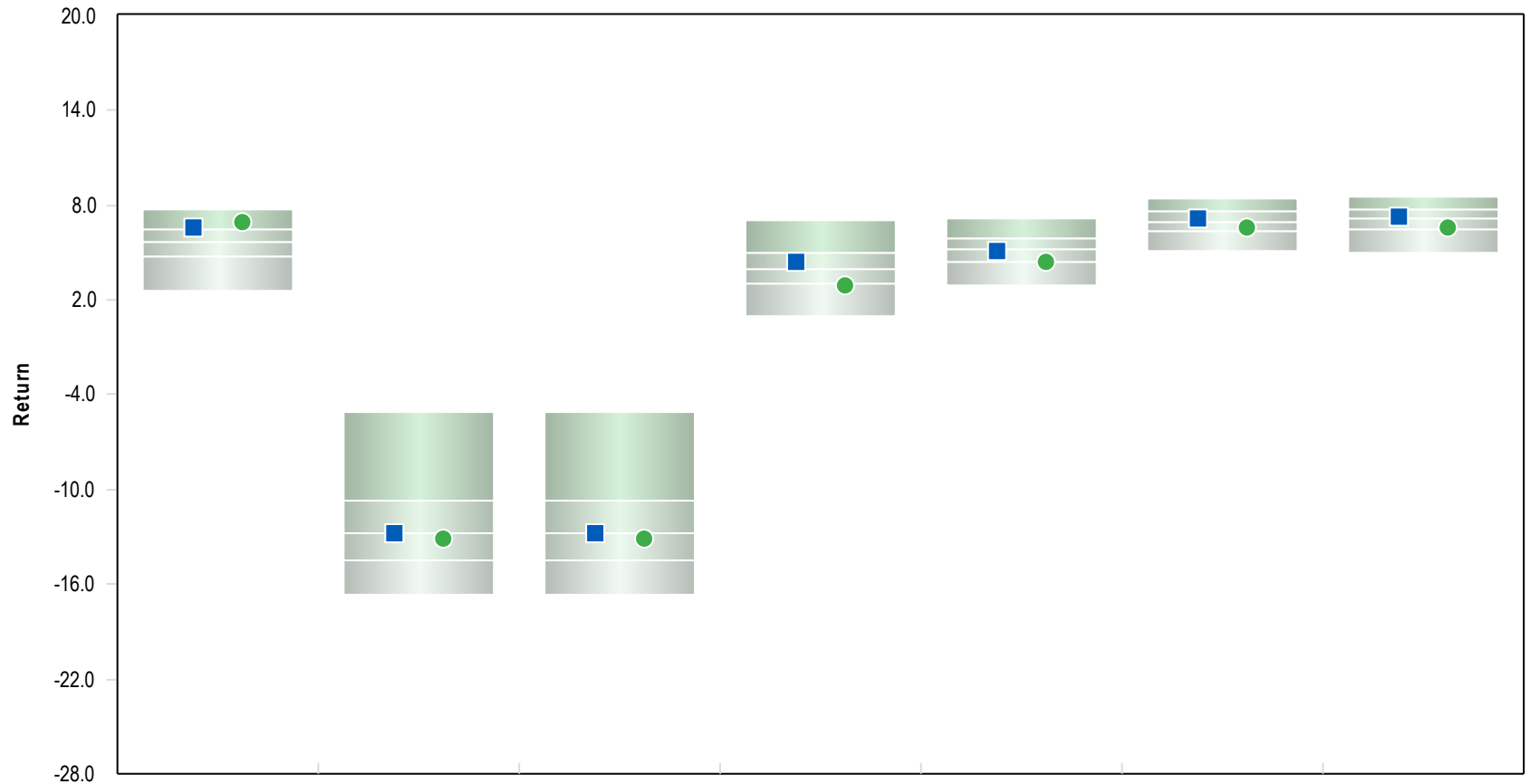
	Market Value (\$)	Allocation (%)
Domestic Equity Composite	635,329,973	28.3
Fixed Income Composite	578,096,574	25.7
International Equity Composite	465,082,589	20.7
Total Real Estate Composite	263,629,679	11.7
Hedge Fund Composite	120,487,124	5.4
Private Equity Composite	111,714,584	5.0
In House Cash	45,985,134	2.0
Private Debt Composite	26,984,221	1.2

	Market Value (\$)	Allocation (%)
Domestic Equity Composite	709,417,747	29.9
Fixed Income Composite	603,051,146	25.4
International Equity Composite	531,896,734	22.4
Total Real Estate Composite	249,492,951	10.5
Hedge Fund Composite	123,091,950	5.2
Private Equity Composite	114,106,206	4.8
Private Debt Composite	26,122,353	1.1
In House Cash	18,213,487	0.8

	<u>Performance (%)</u>								
	<u>1 Quarter</u>	<u>Year To Date</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>7 Years</u>	<u>10 Years</u>	<u>Since Inception</u>	<u>Inception Date</u>
<b>Total Fund Composite</b>	<b>6.49</b>	<b>-13.09</b>	<b>-13.09</b>	<b>4.05</b>	<b>4.67</b>	<b>6.70</b>	<b>6.83</b>	<b>6.99</b>	<b>07/01/1996</b>
<i>Policy Index</i>	6.99	-13.06	-13.06	2.96	4.37	6.57	6.63	6.88	
<b>In House Cash</b>	<b>0.90</b>	<b>1.50</b>	<b>1.50</b>	<b>0.60</b>	<b>1.17</b>	<b>0.98</b>	<b>0.72</b>	<b>3.85</b>	<b>10/01/1982</b>
<i>90 Day U.S. Treasury Bill</i>	0.84	1.46	1.46	0.72	1.26	1.06	0.75	3.62	
<b>Domestic Equity Composite</b>	<b>8.77</b>	<b>-17.69</b>	<b>-17.69</b>	<b>7.91</b>	<b>8.86</b>	<b>10.78</b>	<b>11.43</b>	<b>11.71</b>	<b>10/01/2009</b>
<i>Russell 3000 Index</i>	7.18	-19.21	-19.21	7.07	8.79	11.04	12.13	12.16	
<i>Domestic Equity Index</i>	7.33	-18.82	-18.82	6.39	7.91	10.42	11.61	11.77	
<b>Fixed Income Composite</b>	<b>4.27</b>	<b>-11.95</b>	<b>-11.95</b>	<b>-1.54</b>	<b>0.63</b>	<b>2.05</b>	<b>1.81</b>	<b>3.21</b>	<b>10/01/2009</b>
<i>Fixed Income Index</i>	3.25	-13.63	-13.63	-2.77	-0.10	1.38	1.40	2.54	
<b>International Equity Composite</b>	<b>14.10</b>	<b>-20.96</b>	<b>-20.96</b>	<b>0.09</b>	<b>0.82</b>	<b>5.09</b>	<b>5.14</b>	<b>5.35</b>	<b>10/01/2009</b>
<i>International Equity Index</i>	15.02	-16.09	-16.09	-0.08	0.74	4.69	3.98	4.31	
<b>Hedge Fund Composite</b>	<b>2.16</b>	<b>-3.42</b>	<b>-3.42</b>	<b>4.93</b>	<b>4.19</b>	<b>N/A</b>	<b>N/A</b>	<b>5.08</b>	<b>04/01/2016</b>
<i>90-Day T-Bill+ 5%</i>	2.08	6.53	6.53	5.76	6.33	6.11	5.79	6.14	
<i>HFRI FOF: Conservative Index</i>	1.48	0.11	0.11	4.68	3.87	3.62	3.64	4.08	
<b>Core Private Real Estate Composite</b>	<b>-3.94</b>	<b>5.06</b>	<b>5.06</b>	<b>10.44</b>	<b>9.26</b>	<b>8.93</b>	<b>10.11</b>	<b>8.64</b>	<b>09/01/1999</b>
<i>NCREIF Property Index</i>	-3.50	5.51	5.51	8.06	7.46	7.46	8.82	8.77	

	<u>Performance (%)</u>									
	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
<b>Total Fund Composite</b>	<b>13.13</b>	<b>14.58</b>	<b>18.36</b>	<b>-5.79</b>	<b>17.86</b>	<b>6.33</b>	<b>-0.17</b>	<b>5.09</b>	<b>17.24</b>	<b>13.38</b>
<i>Policy Index</i>	11.37	12.73	18.81	-4.51	16.68	8.04	-0.19	5.86	15.19	12.79
<b>In House Cash</b>	<b>0.04</b>	<b>0.26</b>	<b>2.12</b>	<b>1.93</b>	<b>0.67</b>	<b>0.35</b>	<b>0.18</b>	<b>0.11</b>	<b>0.11</b>	<b>0.20</b>
<i>90 Day U.S. Treasury Bill</i>	0.05	0.67	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08
<b>Domestic Equity Composite</b>	<b>25.11</b>	<b>22.02</b>	<b>29.67</b>	<b>-6.17</b>	<b>22.22</b>	<b>9.62</b>	<b>-1.61</b>	<b>8.44</b>	<b>35.07</b>	<b>16.03</b>
<i>Russell 3000 Index</i>	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56	33.55	16.42
<i>Domestic Equity Index</i>	23.52	20.08	29.94	-6.47	20.20	13.76	0.19	11.60	34.04	16.47
<b>Fixed Income Composite</b>	<b>-0.70</b>	<b>9.17</b>	<b>9.51</b>	<b>-1.28</b>	<b>6.58</b>	<b>4.83</b>	<b>-0.53</b>	<b>4.42</b>	<b>-0.14</b>	<b>7.88</b>
<i>Fixed Income Index</i>	-1.25	7.78	9.24	-0.91	5.50	4.83	-0.86	4.89	0.39	6.87
<b>International Equity Composite</b>	<b>8.44</b>	<b>17.01</b>	<b>23.83</b>	<b>-16.10</b>	<b>32.40</b>	<b>2.64</b>	<b>-1.18</b>	<b>-1.73</b>	<b>20.03</b>	<b>19.69</b>
<i>International Equity Index</i>	6.91	11.18	20.94	-13.98	28.77	3.16	-4.06	-4.13	16.58	17.70
<b>Hedge Fund Composite</b>	<b>7.59</b>	<b>11.20</b>	<b>7.95</b>	<b>-1.55</b>	<b>6.72</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<i>90-Day T-Bill+ 5%</i>	5.05	5.70	7.39	6.97	5.90	5.27	5.03	5.04	5.05	5.08
<i>HFRI FOF: Conservative Index</i>	7.62	6.47	6.30	-0.87	4.12	1.89	0.37	3.14	7.70	4.22
<b>Total Real Estate Composite</b>	<b>24.06</b>	<b>1.81</b>	<b>9.01</b>	<b>7.46</b>	<b>6.29</b>	<b>8.20</b>	<b>14.65</b>	<b>20.16</b>	<b>10.27</b>	<b>13.17</b>
<i>NCREIF Property Index</i>	17.70	1.60	6.42	6.72	6.96	7.97	13.33	11.82	10.98	10.54

Net of Fees.



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Total Fund Composite	6.58 (24)	-12.77 (50)	-12.77 (50)	4.46 (38)	5.09 (56)	7.13 (43)	7.26 (45)
● Policy Index	6.99 (15)	-13.06 (55)	-13.06 (55)	2.96 (78)	4.37 (79)	6.57 (66)	6.63 (69)

5th Percentile	7.73	-5.11	-5.11	7.11	7.15	8.47	8.51
1st Quartile	6.52	-10.74	-10.74	5.03	5.94	7.60	7.70
Median	5.65	-12.80	-12.80	3.99	5.19	6.97	7.16
3rd Quartile	4.79	-14.50	-14.50	3.06	4.47	6.38	6.46
95th Percentile	2.64	-16.62	-16.62	1.04	2.90	5.12	4.97

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.