

Investment Performance Review
Period Ending May 31, 2022

Employees' Retirement System of the City of Norfolk





<u>Equities</u>	<u>Index Returns (%)</u>					
	<u>Month</u>	<u>3 M</u>	<u>YTD</u>	<u>1 Year</u>	<u>3 Yr Ann</u>	<u>5 Yr Ann</u>
S&P 500 Total Return	0.18	(5.16)	(12.76)	(0.30)	16.44	13.38
Russell Midcap Index	0.08	(5.26)	(12.87)	(6.77)	12.87	10.48
Russell 2000 Index	0.15	(8.65)	(16.57)	(16.92)	9.70	7.72
Russell 1000 Growth Index	(2.32)	(10.76)	(21.88)	(6.25)	18.31	16.13
Russell 1000 Value Index	1.94	(1.09)	(4.52)	0.93	12.75	9.50
Russell 3000 Index	(0.13)	(6.15)	(13.89)	(3.68)	15.60	12.75
MSCI EAFE NR	0.75	(5.16)	(11.34)	(10.38)	6.43	4.17
MSCI EM NR	0.44	(7.29)	(11.76)	(19.83)	5.00	3.80

<u>Russell Indices Style Returns</u>					
		<u>V</u>	<u>B</u>	<u>G</u>	
L M S	L	-4.5	-13.7	-21.9	L 25.1 26.4 27.6
	M	-5.9	-12.9	-25.4	M 28.3 22.6 12.7
	S	-8.3	-16.6	-24.8	S 28.2 14.8 2.8
YTD				2021	

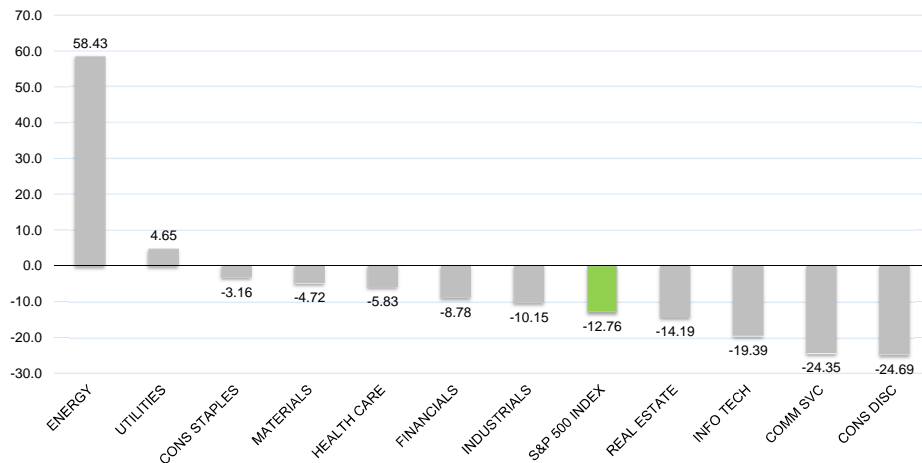
<u>Fixed Income</u>	<u>Index Returns (%)</u>					
	<u>Month</u>	<u>3 M</u>	<u>YTD</u>	<u>1 Year</u>	<u>Mod. Adj. Duration</u>	<u>Yield to Worst</u>
U.S. Aggregate	0.64	(5.86)	(8.92)	(8.22)	6.51	3.38
U.S. Corporate Investment Grade	0.93	(6.99)	(11.92)	(10.28)	7.77	4.21
U.S. Corporate High Yield	0.25	(4.43)	(8.00)	(5.27)	4.16	7.09
Global Aggregate	0.27	(8.11)	(11.06)	(13.21)	7.10	2.59

<u>Currencies</u>	<u>Levels</u>		
	<u>05/31/22</u>	<u>12/31/21</u>	<u>12/31/20</u>
Euro Spot	1.07	1.14	1.22
British Pound Spot	1.26	1.35	1.37
Japanese Yen Spot	128.67	115.08	103.25
Swiss Franc Spot	0.96	0.91	0.89

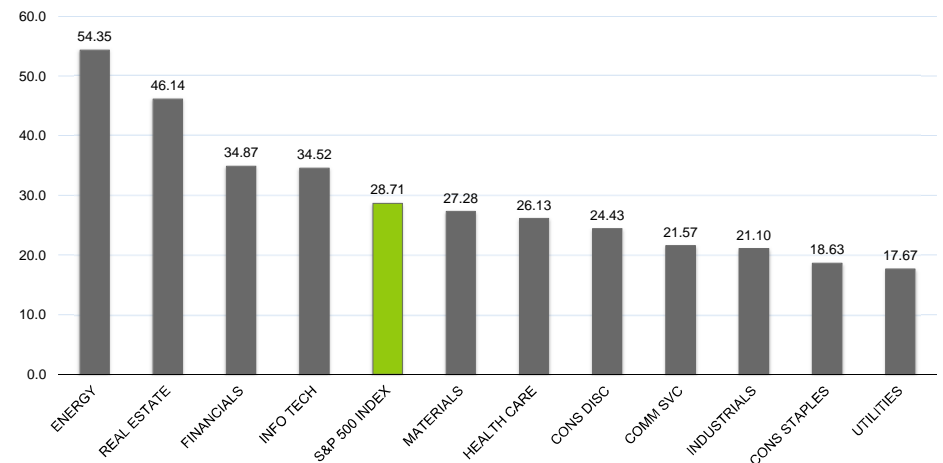
<u>Key Rates</u>	<u>Levels (%)</u>				
	<u>05/31/22</u>	<u>12/31/21</u>	<u>12/31/20</u>	<u>12/31/19</u>	<u>12/31/18</u>
US Generic Govt 3 Mth	1.04	0.03	0.06	1.54	2.35
US Generic Govt 2 Yr	2.56	0.73	0.12	1.57	2.49
US Generic Govt 10 Yr	2.84	1.51	0.91	1.92	2.68
US Generic Govt 30 Yr	3.05	1.90	1.64	2.39	3.01
ICE LIBOR USD 3M	1.61	0.21	0.24	1.91	2.81
Euribor 3 Month ACT/360	(0.34)	(0.57)	(0.55)	(0.38)	(0.31)
Bankrate 30Y Mortgage Rates Na	5.35	3.27	2.87	3.86	4.51
Prime	4.00	3.25	3.25	4.75	5.50

<u>Commodities</u>	<u>Levels</u>		
	<u>05/31/22</u>	<u>12/31/21</u>	<u>12/31/20</u>
Oil	114.67	72.78	46.65
Gasoline	4.67	3.29	2.25
Natural Gas	8.15	3.64	2.45
Gold	1,848.40	1,835.90	1,187.30
Silver	21.69	23.41	16.50
Copper	429.60	444.25	351.85
Corn	753.50	593.50	441.50
BBG Commodity TR Idx	281.15	211.80	166.63

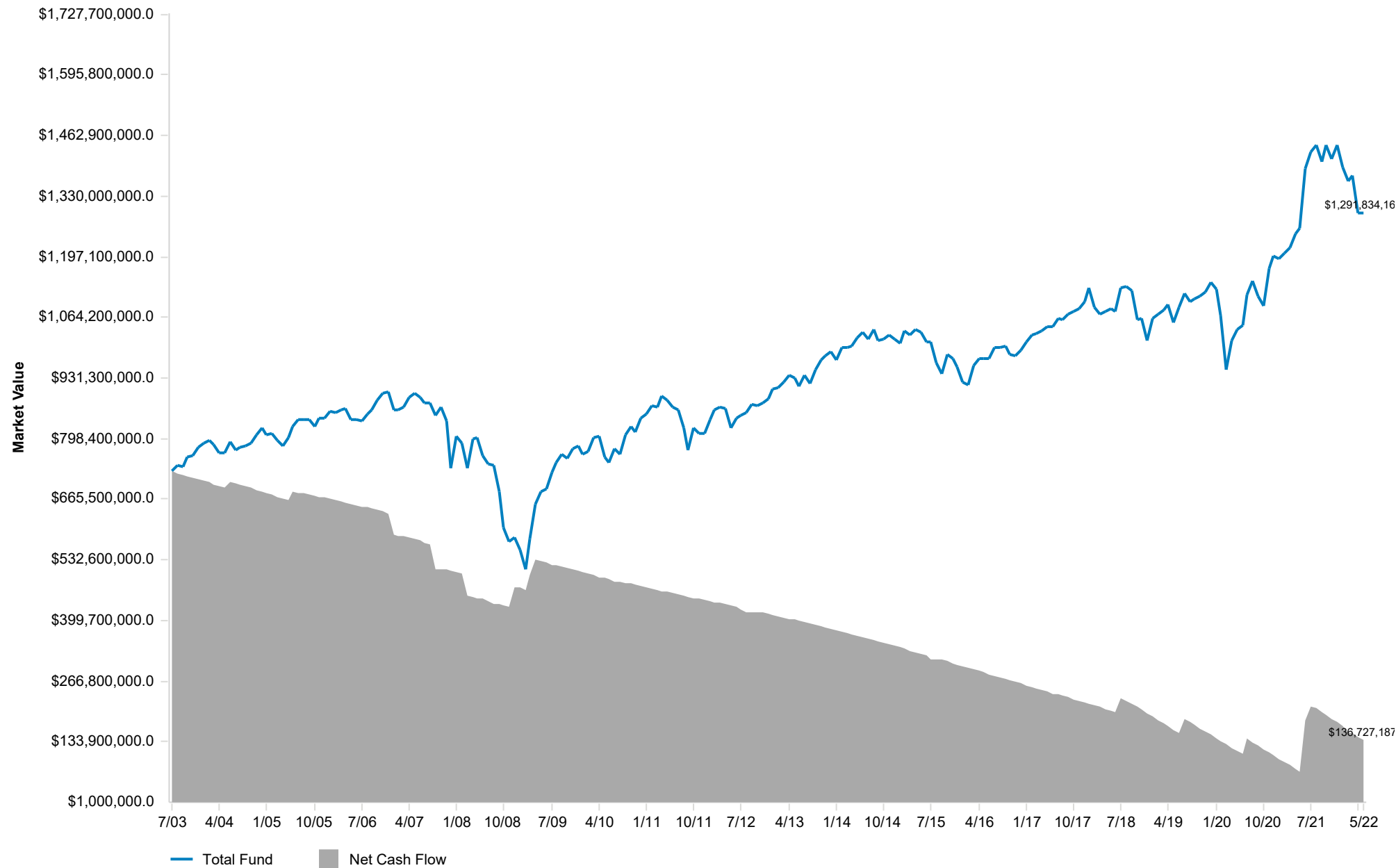
YTD Sector Returns



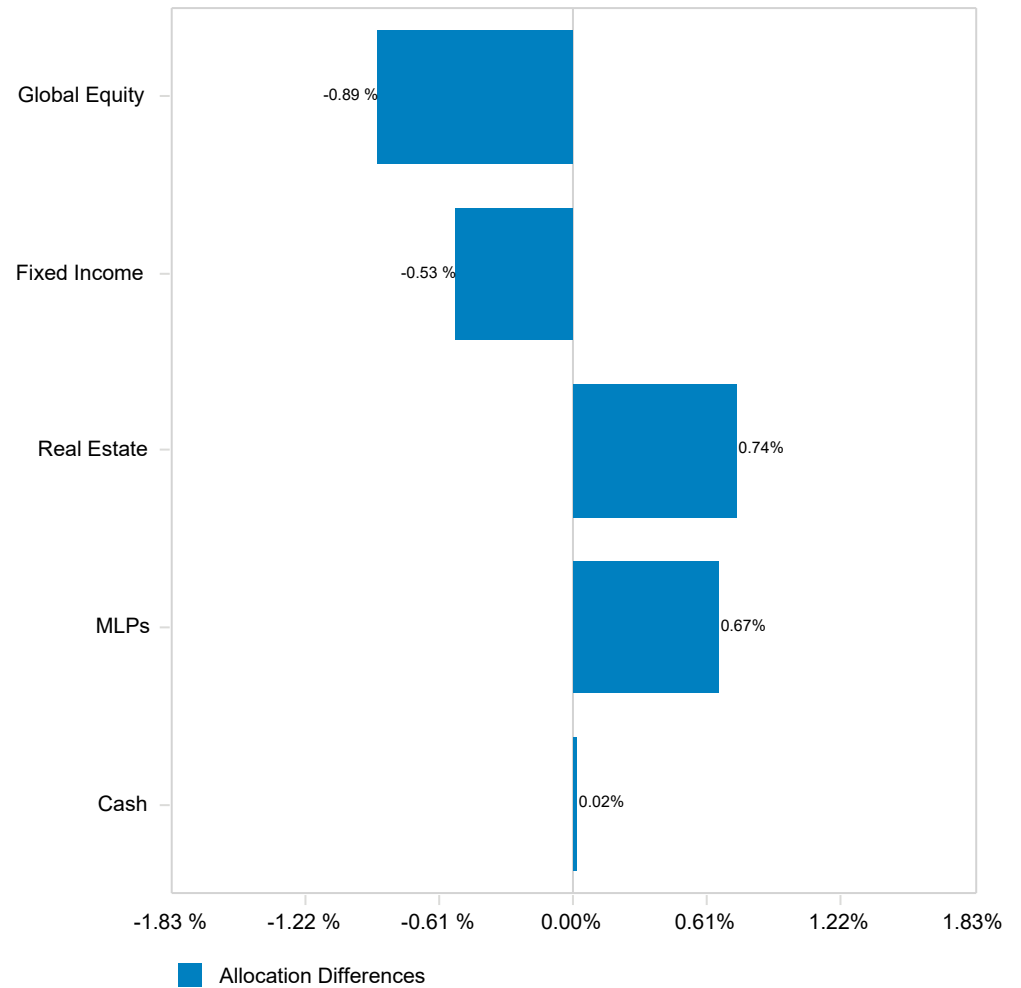
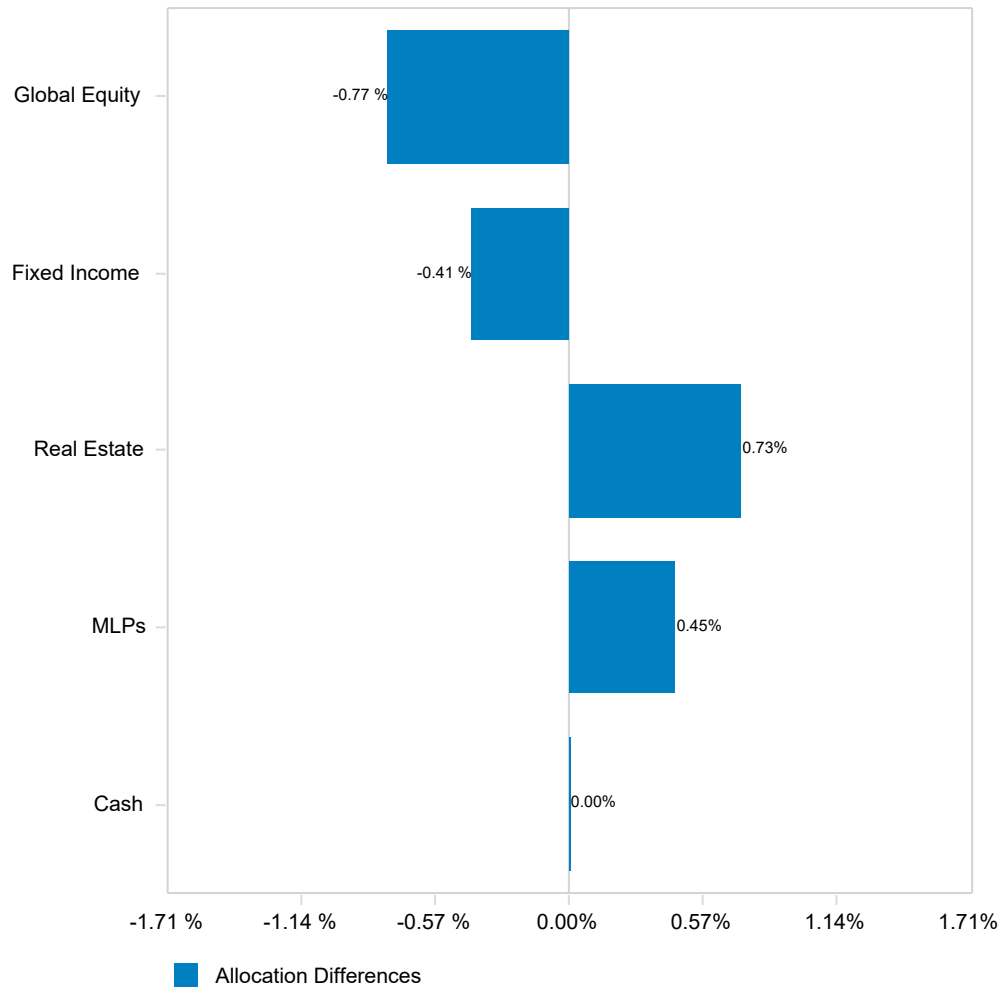
2021 Sector Returns



Schedule of Investable Assets



Employees' Retirement System of the City of Norfolk
Asset Allocation vs. Target Allocation
As of May 31, 2022



May 31, 2022				April 30, 2022			
	Market Value \$	Allocation (%)	Target (%)		Market Value \$	Allocation (%)	Target (%)
Global Equity	700,510,231	54.2	55.0	Global Equity	699,578,080	54.1	55.0
Fixed Income	382,208,262	29.6	30.0	Fixed Income	380,974,561	29.5	30.0
Real Estate	106,352,030	8.2	7.5	Real Estate	106,566,029	8.2	7.5
MLPs	102,756,302	8.0	7.5	MLPs	105,593,525	8.2	7.5
Cash	7,337	0.0	0.0	Cash	217,170	0.0	0.0
Total Fund	1,291,834,162	100.0	100.0	Total Fund	1,292,929,366	100.0	100.0



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

As of May 31, 2022

Asset Allocation & Performance													
	Allocation		Performance(%)										
	Market Value \$	%	1 Month	3 Month	FYTD	1 Year	2 YR	3 Year	5 Year	7 Year	10 Year	Since Inception	Inception Date
Total Fund	1,291,834,162	100.0	0.56	-4.00	-4.16	-2.81	10.69	8.07	6.58	6.07	7.80	7.94	Oct-1990
Total Fund Policy (62.5% ACWI/37.5% Agg)			0.28	-5.91	-8.59	-7.66	7.70	7.42	6.17	5.76	7.30	7.93	
Excess Return			0.28	1.91	4.43	4.85	2.99	0.65	0.41	0.31	0.50	0.01	
Total Fund Strategy Index			0.80	-3.82	-4.31	-2.84	10.69	8.50	6.73	6.10	7.61	8.04	
Excess Return			-0.24	-0.18	0.15	0.03	0.00	-0.43	-0.15	-0.03	0.19	-0.10	
Composite Returns													
Global Equity	700,510,231	54.2	0.13	-5.83	-8.35	-7.26	15.87	12.05	9.27	8.41	10.93	9.09	Oct-1990
Global Equity Policy			0.06	-6.01	-8.64	-7.54	15.27	11.51	8.78	7.91	10.57	9.30	
Excess Return			0.07	0.18	0.29	0.28	0.60	0.54	0.49	0.50	0.36	-0.21	
Fixed Income	382,208,262	29.6	0.32	-6.09	-8.93	-8.29	-4.09	0.11	1.31	1.65	1.91	5.41	Oct-1990
Bloomberg U.S. Aggregate Index			0.64	-5.86	-8.86	-8.22	-4.39	0.00	1.17	1.49	1.71	5.35	
Excess Return			-0.32	-0.23	-0.07	-0.07	0.30	0.11	0.14	0.16	0.20	0.06	
Real Estate	106,352,030	8.2	-0.20	4.43	17.11	19.37	9.05	5.96	5.88	6.59	7.95	8.45	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.00	7.14	22.74	27.26	13.64	10.30	8.90	9.20	9.92	10.08	
Excess Return			-0.20	-2.71	-5.63	-7.89	-4.59	-4.34	-3.02	-2.61	-1.97	-1.63	
MLPs	102,756,302	8.0	5.19	9.22	30.18	37.11	36.49	8.51	4.43	-0.03	-	3.57	Mar-2013
Alerian MLP Index			7.73	9.84	21.25	27.52	35.34	6.13	2.62	-1.24	-	0.49	
Excess Return			-2.54	-0.62	8.93	9.59	1.15	2.38	1.81	1.21	-	3.08	
Cash	7,337	0.0											



Employees' Retirement System of the City of Norfolk
Asset Allocation & Performance - (net of fees)
As of May 31, 2022

Asset Allocation & Performance

	Allocation		Performance(%)										Inception Date
	Market Value \$	%	1 Month	3 Month	FYTD	1 Year	2 YR	3 Year	5 Year	7 Year	10 Year	Since Inception	
Global Equity													
SSgA MSCI ACWI IMI Index Fund	700,510,231	54.2	0.13	-5.83	-8.35	-7.26	15.74	11.97	9.22	-	-	10.52	May-2016
MSCI AC World IMI (Net)			0.06	-6.01	-8.64	-7.54	15.27	11.51	8.78	-	-	10.07	
Excess Return			0.07	0.18	0.29	0.28	0.47	0.46	0.44	-	-	0.45	
Fixed Income													
PIMCO Total Return	188,950,643	14.6	0.00	-6.31	-8.98	-8.36	-3.87	0.17	1.43	1.80	2.26	5.73	Jan-1991
Blmbg. U.S. Aggregate Index			0.64	-5.86	-8.86	-8.22	-4.39	0.00	1.17	1.49	1.71	5.23	
Excess Return			-0.64	-0.45	-0.12	-0.14	0.52	0.17	0.26	0.31	0.55	0.50	
SSgA Bond Market Index	193,257,619	15.0	0.64	-5.88	-8.88	-8.23	-4.36	0.03	1.19	1.50	1.72	2.95	Jan-2009
Blmbg. U.S. Aggregate Index			0.64	-5.86	-8.86	-8.22	-4.39	0.00	1.17	1.49	1.71	2.94	
Excess Return			0.00	-0.02	-0.02	-0.01	0.03	0.03	0.02	0.01	0.01	0.01	
Real Estate													
JP Morgan Asset Management Strategic Property Fund	56,897,070	4.4	1.12	5.24	25.44	27.14	14.40	10.54	8.70	8.73	9.89	10.26	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.00	7.14	22.74	27.26	13.64	10.30	8.90	9.20	9.92	10.08	
Excess Return			1.12	-1.90	2.70	-0.12	0.76	0.24	-0.20	-0.47	-0.03	0.18	
UBS Trumbull Property Fund	31,934,772	2.5	0.00	7.14	19.03	22.18	8.26	4.30	4.78	5.64	6.77	6.77	Jan-2012
NCREIF Fund Index-ODCE (VW) (Net)			0.00	7.14	22.74	27.26	13.64	10.30	8.90	9.20	9.92	9.77	
Excess Return			0.00	0.00	-3.71	-5.08	-5.38	-6.00	-4.12	-3.56	-3.15	-3.00	
Vanguard Real Estate Index (VGSNX)	17,520,188	1.4	-4.61	-2.85	-0.06	-	-	-	-	-	-	-0.06	Jul-2021
Vanguard Spliced REIT Index			-4.61	-2.80	-0.50	-	-	-	-	-	-	-0.50	
Excess Return			0.00	-0.05	0.44	-	-	-	-	-	-	0.44	
MLPs													
Harvest MLP	51,114,228	4.0	5.06	10.35	33.17	38.92	40.60	10.88	5.86	0.67	-	4.22	Mar-2013
Alerian MLP Index			7.73	9.84	21.25	27.52	35.34	6.13	2.62	-1.24	-	0.49	
Excess Return			-2.67	0.51	11.92	11.40	5.26	4.75	3.24	1.91	-	3.73	
Tortoise Capital Advisors	51,642,074	4.0	5.32	8.26	27.06	35.07	32.76	6.36	3.12	-0.69	-	2.44	Apr-2013
Alerian MLP Index			7.73	9.84	21.25	27.52	35.34	6.13	2.62	-1.24	-	-0.08	
Excess Return			-2.41	-1.58	5.81	7.55	-2.58	0.23	0.50	0.55	-	2.52	



Employees' Retirement System of the City of Norfolk
Financial Reconciliation
1 Month Ending May 31, 2022

Financial Reconciliation								
	Market Value 05/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 05/31/2022
Total Fund	1,292,929,366	-	-	-8,350,000	-80,457	422,257	6,912,996	1,291,834,162
Global Equity	699,578,080	-	-	-	-78,927	-	1,011,077	700,510,231
SSgA MSCI ACWI IMI Index Fund	699,578,080	-	-	-	-78,927	-	1,011,077	700,510,231
Fixed Income	380,974,561	-	-	-	-	-383,368	1,617,069	382,208,262
PIMCO Total Return	188,945,974	-	-	-	-	-383,368	388,037	188,950,643
SSgA Bond Market Index	192,028,587	-	-	-	-	-	1,229,032	193,257,619
Real Estate	106,566,029	-	-	-	-1,531	144,077	-356,545	106,352,030
JP Morgan Asset Management Strategic Property Fund	56,264,488	-	-	-	-	142,546	490,035	56,897,070
UBS Trumbull Property Fund	31,934,772	-	-	-	-	-	-	31,934,772
Vanguard Real Estate Index (VGSNX)	18,366,769	-	-	-	-1,531	1,531	-846,581	17,520,188
MLPs	105,593,525	-8,140,000	-	-	-	661,433	4,641,344	102,756,302
Harvest MLP	51,570,046	-3,000,000	-	-	-	345,982	2,198,201	51,114,228
Tortoise Capital Advisors	54,023,479	-5,140,000	-	-	-	315,451	2,443,143	51,642,074
Cash	217,170	8,140,000	-	-8,350,000	-	116	51	7,337



Employees' Retirement System of the City of Norfolk
Financial Reconciliation
July 1, 2021 To May 31, 2022

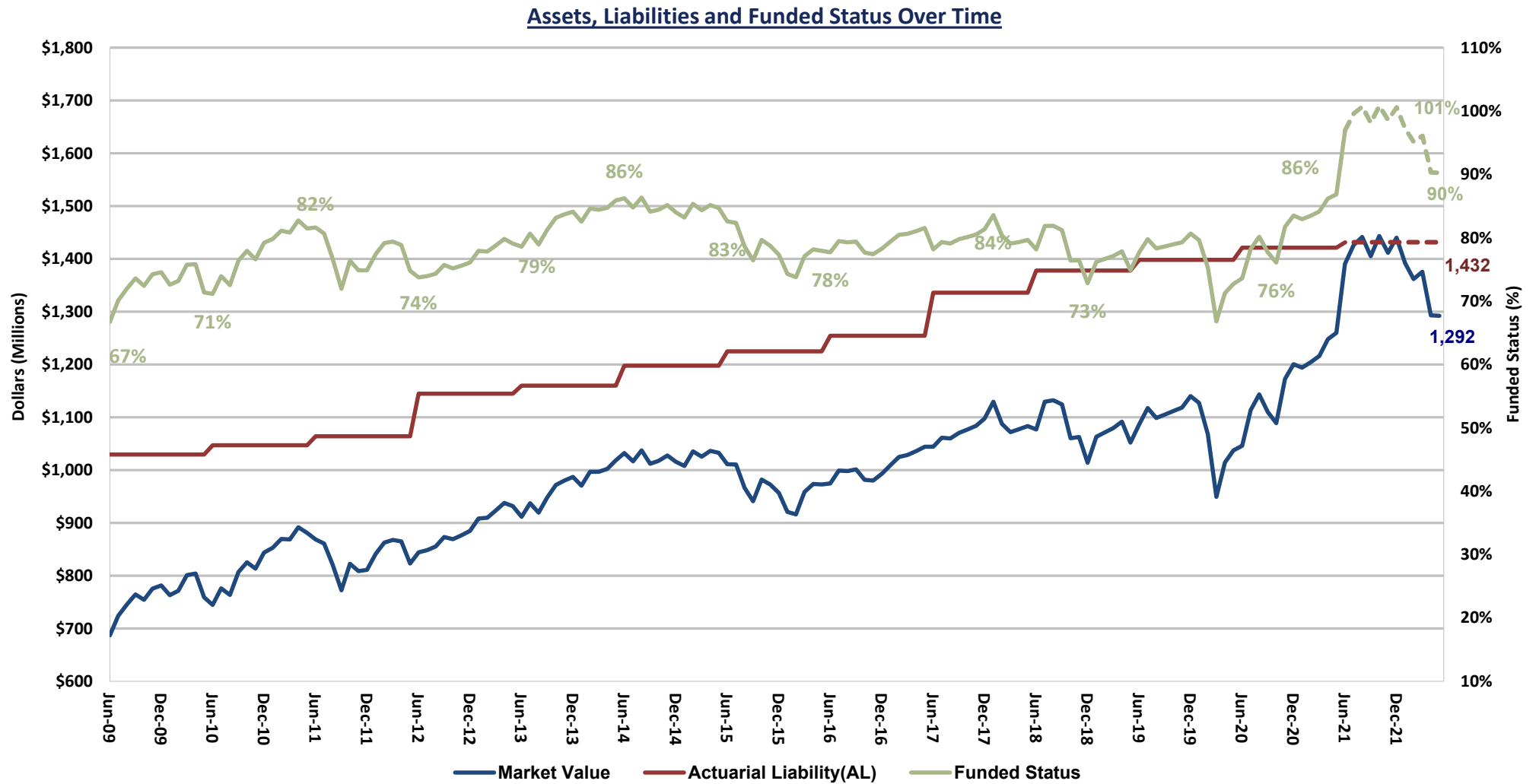
Financial Reconciliation

	Market Value 07/01/2021	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 05/31/2022
Total Fund	1,390,335,588	-	31,447,746	-74,196,000	-1,726,661	12,790,622	-66,817,133	1,291,834,162
Global Equity	779,940,629	-15,898,000	-	-	-320,056	-	-63,212,342	700,510,231
SSgA MSCI ACWI IMI Index Fund	779,940,629	-15,898,000	-	-	-320,056	-	-63,212,342	700,510,231
Fixed Income	428,086,879	-8,589,000	190,137	-	-220,656	3,428,277	-40,687,375	382,208,262
PIMCO Total Return	215,989,678	-8,589,000	190,137	-	-190,137	3,428,277	-21,878,312	188,950,643
SSgA Bond Market Index	212,097,201	-	-	-	-30,519	-	-18,809,063	193,257,619
Real Estate	81,594,793	7,757,368	-	-	-1,021,409	3,011,830	15,009,448	106,352,030
JP Morgan Asset Management Strategic Property Fund	45,356,339	-21	-	-	-707,355	1,437,847	10,810,260	56,897,070
UBS Trumbull Property Fund	36,238,454	-10,242,611	-	-	-296,697	1,059,512	5,176,114	31,934,772
Vanguard Real Estate Index (VGSNX)	-	18,000,000	-	-	-17,357	514,471	-976,925	17,520,188
MLPs	100,706,225	-26,350,000	164,540	-	-164,540	6,324,954	22,075,122	102,756,302
Harvest MLP	51,807,422	-16,010,000	-	-	-	3,146,354	12,170,452	51,114,228
Tortoise Capital Advisors	48,898,803	-10,340,000	164,540	-	-164,540	3,178,601	9,904,670	51,642,074
Cash	7,062	43,079,632	31,093,069	-74,196,000	-	25,561	-1,986	7,337



Employees' Retirement System for the City of Norfolk

Asset Liability Scorecard Net of Fees*



*The dashed liability line and dashed funded status line are not actuarial calculations and are for projections purposes only.

As of the Plan's June 30, 2021 actuarial valuation report, the plan had a fiscal year end Actuarial Liability (AL) of \$1,431,515,000.

As of May 31, 2022, the Plan's current market value of assets (MVA) was \$1,291,834,162.

As of May 31, 2022, the Plan's market value funded ratio (current MVA/fiscal year end AL) was 90.2%



Employees' Retirement System of the City of Norfolk
Historical Hybrid Composition
As of May 31, 2022

Total Fund Policy

Allocation Mandate	Weight (%)
May-2016	
MSCI AC World IMI (Net)	62.50
Blmbg. U.S. Aggregate Index	37.50

Total Fund Strategy Index

Allocation Mandate	Weight (%)
Jul-2016	
MSCI AC World IMI (Net)	55.00
Blmbg. U.S. Aggregate Index	30.00
NCREIF Fund Index-ODCE (VW) (Net)	7.50
Alerian MLP Index	7.50

Strategy Index is comprised of the returns of the various broad market benchmarks assigned to each manager and weighted to reflect the System's target asset allocation.



Global Equity Policy	
Allocation Mandate	Weight (%)
Oct-1990	
S&P 500 Index	100.00
Jun-2006	
Russell 3000 Index	70.00
MSCI EAFE Index	30.00
Jun-2009	
Russell 3000 Index	70.00
MSCI AC World ex USA (Net)	30.00
Sep-2009	
Russell 3000 Index	60.00
MSCI AC World ex USA (Net)	40.00
May-2016	
MSCI AC World IMI (Net)	100.00

Active Return	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
Alpha	- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.
Beta	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
Consistency	- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.
Distributed to Paid In (DPI)	- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.
Down Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
Downside Risk	- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.
Excess Return	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
Excess Risk	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
Information Ratio	- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.
Public Market Equivalent (PME)	- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.
R-Squared	- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.
Return	- Compounded rate of return for the period.
Sharpe Ratio	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.
Standard Deviation	- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.
Total Value to Paid In (TVPI)	- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life
Tracking Error	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
Treynor Ratio	- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.
Up Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.

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