

Investment Performance Review
Period Ending July 31, 2022

Employees' Retirement System of the City of Norfolk



Equities	Index Returns (%)					
	Month	3 M	YTD	1 Year	3 Yr Ann	5 Yr Ann
S&P 500 Total Return	9.22	0.39	(12.58)	(4.64)	13.36	12.83
Russell Midcap Index	9.87	(1.02)	(13.83)	(9.83)	9.47	9.69
Russell 2000 Index	10.44	1.51	(15.43)	(14.29)	7.51	7.12
Russell 1000 Growth Index	12.00	0.73	(19.44)	(11.93)	16.05	16.30
Russell 1000 Value Index	6.63	(0.79)	(7.08)	(1.43)	8.88	8.26
Russell 3000 Index	9.38	0.10	(13.70)	(7.35)	12.55	12.18
MSCI EAFE NR	4.98	(4.04)	(15.56)	(14.32)	3.16	2.61
MSCI EM NR	(0.25)	(6.46)	(17.83)	(20.09)	0.90	0.95

Russell Indices Style Returns						
	V B G			V B G		
L	-7.1	-13.6	-19.4	25.1	26.4	27.6
M	-9.0	-13.8	-22.6	28.3	22.6	12.7
S	-9.3	-15.5	-21.6	28.2	14.8	2.8

YTD

2021

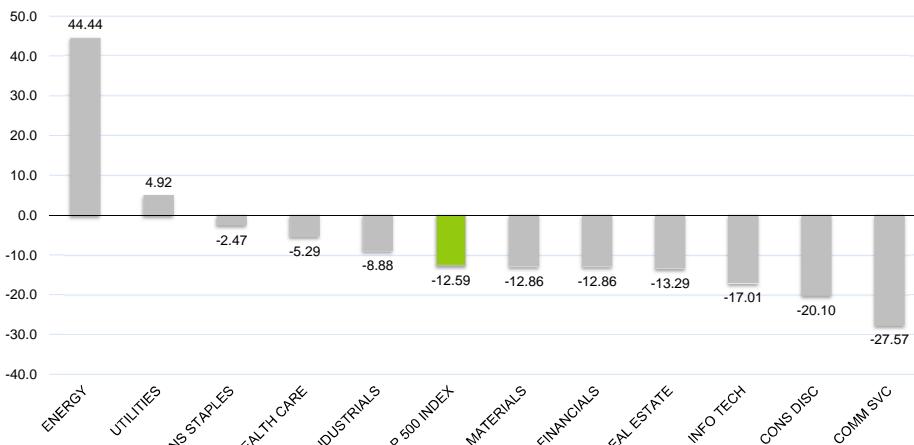
Fixed Income	Index Returns (%)					
	Month	3 M	YTD	1 Year	Mod. Adj. Duration	Yield to Worst
U.S. Aggregate	2.44	1.49	(8.16)	(9.12)	6.40	3.42
U.S. Corporate Investment Grade	3.24	1.28	(11.61)	(12.61)	7.70	4.33
U.S. Corporate High Yield	5.90	(0.98)	(9.12)	(8.02)	4.02	7.73
Global Aggregate	2.13	(0.88)	(12.08)	(14.58)	7.06	2.60

Currencies	Levels		
	07/31/22	12/31/21	12/31/20
Euro Spot	1.02	1.14	1.22
British Pound Spot	1.22	1.35	1.37
Japanese Yen Spot	133.27	115.08	103.25
Swiss Franc Spot	0.95	0.91	0.89

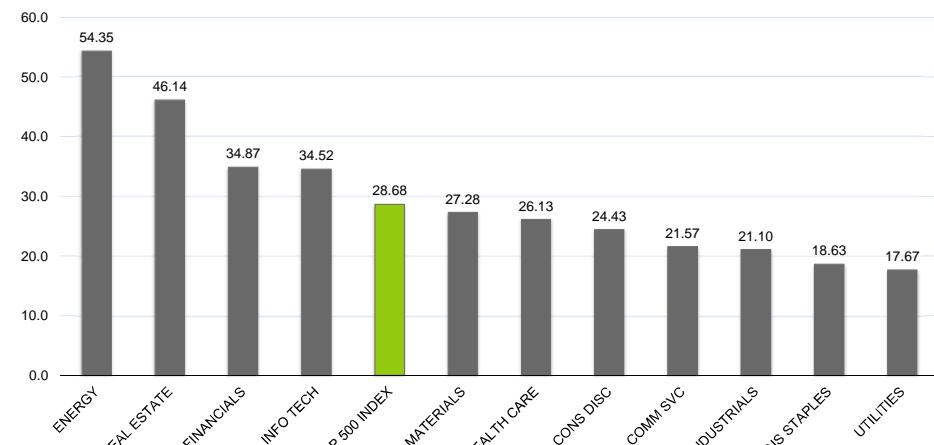
Key Rates	Levels (%)				
	07/31/22	12/31/21	12/31/20	12/31/19	12/31/18
US Generic Govt 3 Mth	2.32	0.03	0.06	1.54	2.35
US Generic Govt 2 Yr	2.88	0.73	0.12	1.57	2.49
US Generic Govt 10 Yr	2.65	1.51	0.91	1.92	2.68
US Generic Govt 30 Yr	3.01	1.90	1.64	2.39	3.01
ICE LIBOR USD 3M	2.79	0.21	0.24	1.91	2.81
Euribor 3 Month ACT/360	0.23	(0.57)	(0.55)	(0.38)	(0.31)
Bankrate 30Y Mortgage Rates Na	5.28	3.27	2.87	3.86	4.51
Prime	5.50	3.25	3.25	4.75	5.50

Commodities	Levels		
	07/31/22	12/31/21	12/31/20
Oil	98.62	71.56	46.44
Gasoline	4.21	3.29	2.25
Natural Gas	8.23	3.65	2.44
Gold	1,781.80	1,840.90	1,187.30
Silver	20.20	23.46	16.50
Copper	357.35	443.05	351.60
Corn	620.00	546.00	403.25
BBG Commodity TR Idx	261.55	211.80	166.63

YTD Sector Returns



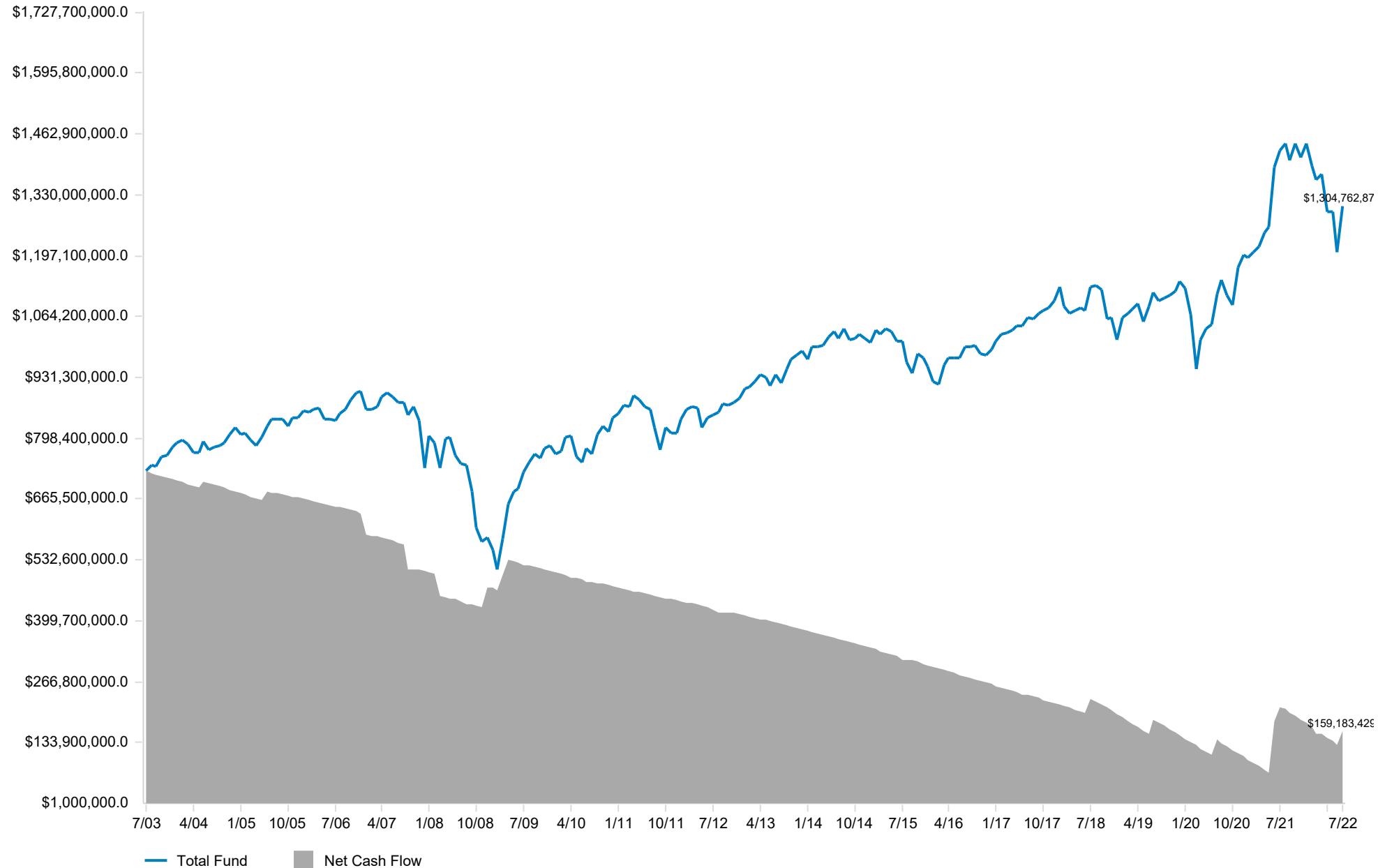
2021 Sector Returns



Source: Bloomberg & Investment Metrics. For informational purposes only and should not be regarded as investment advice. Information is based on sources and data believed to be reliable, but AndCo Consulting cannot guarantee the accuracy, adequacy or completeness of the information. The material provided herein is valid only as of the date of distribution and not as of any future date.

*Heat maps are displayed utilizing a 9-color scale, with green as the highest return for the time period noted and red as the lowest return for the time period noted. Color scales within each time period are mutually exclusive.

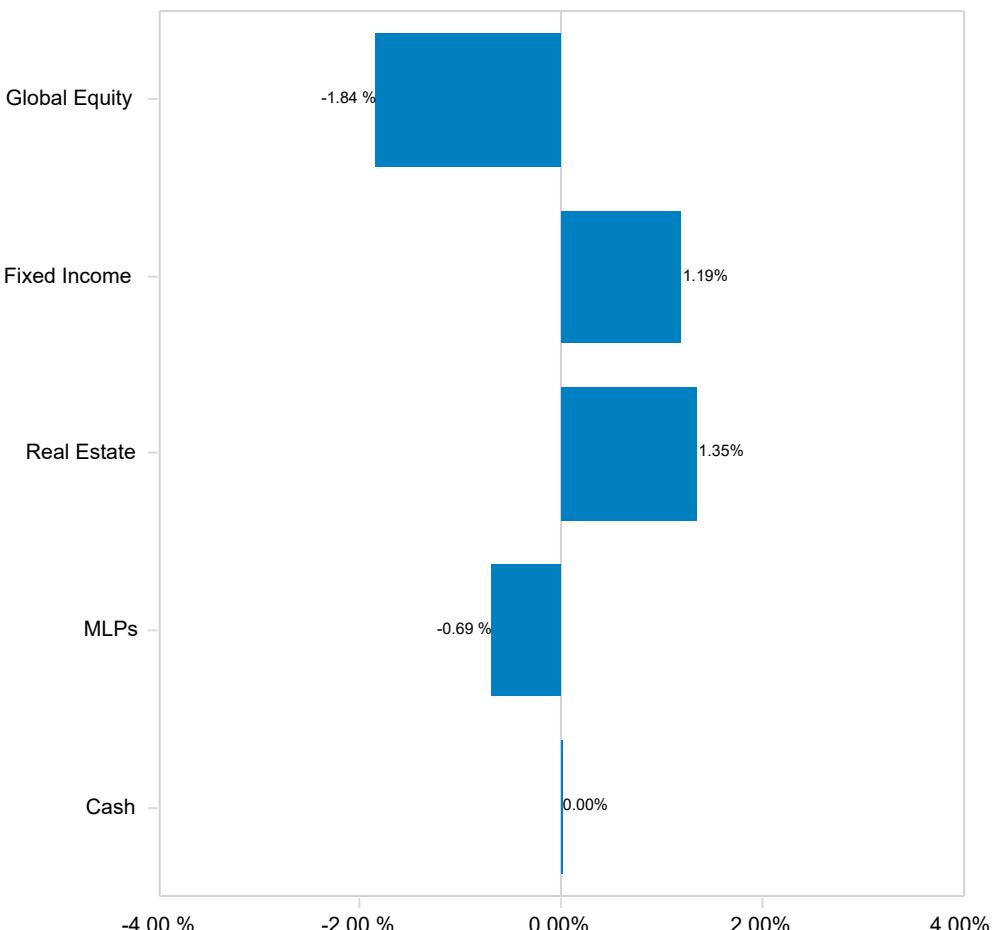
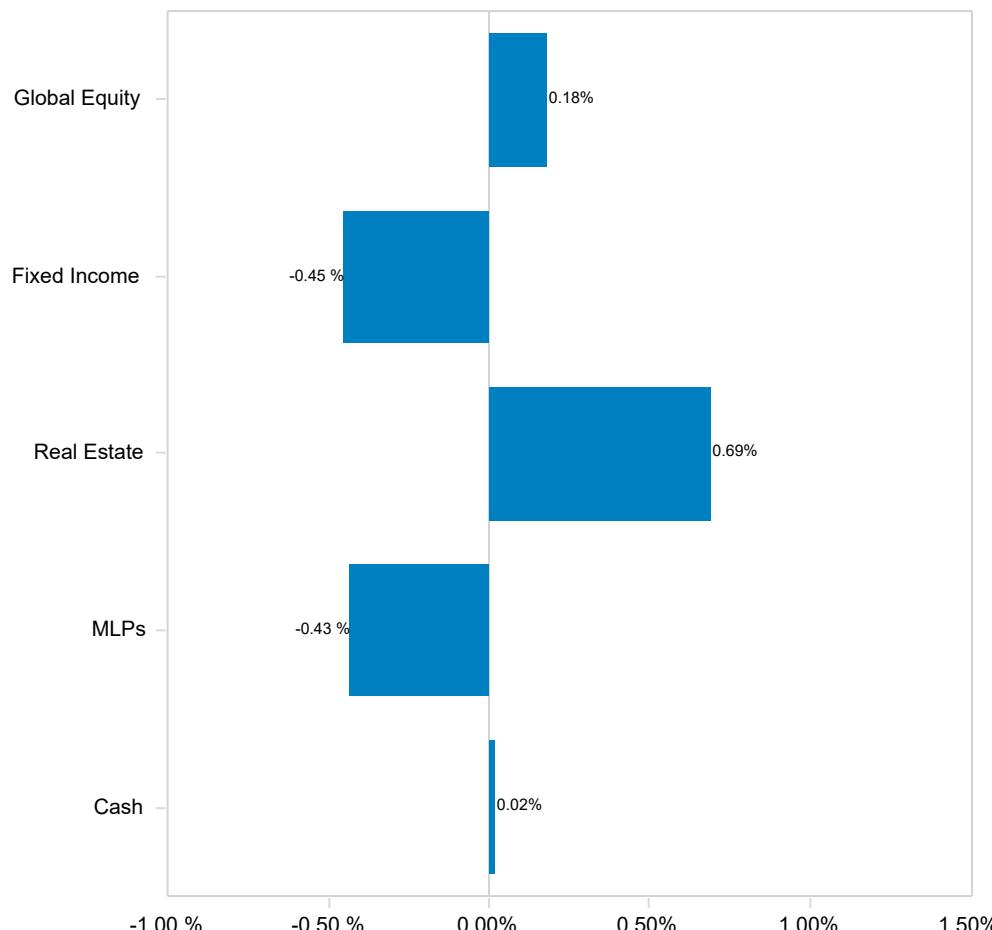
Schedule of Investable Assets



Employees' Retirement System of the City of Norfolk

Asset Allocation vs. Target Allocation

As of July 31, 2022



July 31, 2022

June 30, 2022

	Market Value \$	Allocation (%)	Target (%)		Market Value \$	Allocation (%)	Target (%)
Global Equity	719,978,277	55.2	55.0	Global Equity	640,443,527	53.2	55.0
Fixed Income	385,517,872	29.5	30.0	Fixed Income	375,735,264	31.2	30.0
Real Estate	106,854,993	8.2	7.5	Real Estate	106,621,398	8.8	7.5
MLPs	92,205,322	7.1	7.5	MLPs	82,025,265	6.8	7.5
Cash	206,415	0.0	0.0	Cash	4,491	0.0	0.0
Total Fund	1,304,762,878	100.0	100.0	Total Fund	1,204,829,944	100.0	100.0



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

As of July 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	1,304,762,878	100.0		5.55	-0.29	5.55	-5.28	7.68	6.36	5.92	6.11	7.27	7.87	Oct-1990
Total Fund Policy (62.5% ACWI/37.5% Agg)				5.38	-0.65	5.38	-10.10	4.07	5.44	5.51	5.76	6.77	7.85	
Excess Return				0.17	0.36	0.17	4.82	3.61	0.92	0.41	0.35	0.50	0.02	
Total Fund Strategy Index				5.60	0.14	5.60	-5.07	8.03	6.72	6.14	6.19	7.10	7.97	
Excess Return				-0.05	-0.43	-0.05	-0.21	-0.35	-0.36	-0.22	-0.08	0.17	-0.10	
Composite Returns														
Global Equity	719,978,277	55.2	7.15	-1.91	7.15	-10.67	10.04	8.87	8.09	8.27	10.08	8.97		Oct-1990
Global Equity Policy			7.14	-2.04	7.14	-11.01	9.47	8.34	7.60	7.78	9.70	9.17		
Excess Return			0.01	0.13	0.01	0.34	0.57	0.53	0.49	0.49	0.38	-0.20		
Fixed Income	385,517,872	29.5	2.60	1.17	2.60	-9.24	-4.75	-0.04	1.39	1.78	1.82	5.41		Oct-1990
Blmbg. U.S. Aggregate Index			2.44	1.49	2.44	-9.12	-5.00	-0.21	1.28	1.67	1.65	5.35		
Excess Return			0.16	-0.32	0.16	-0.12	0.25	0.17	0.11	0.11	0.17	0.06		
Real Estate	106,854,993	8.2	1.28	1.91	1.28	18.43	11.32	7.38	6.09	6.54	7.99	8.52		Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.00	4.54	0.00	28.31	17.22	11.66	9.55	9.35	10.15	10.36		
Excess Return			1.28	-2.63	1.28	-9.88	-5.90	-4.28	-3.46	-2.81	-2.16	-1.84		
MLPs	92,205,322	7.1	12.41	3.55	12.41	35.02	41.42	7.37	3.80	1.12	-	3.34		Mar-2013
Alerian MLP Index			12.49	4.27	12.49	25.26	41.25	4.14	1.83	0.00	-	0.14		
Excess Return			-0.08	-0.72	-0.08	9.76	0.17	3.23	1.97	1.12	-	3.20		
Cash	206,415	0.0												



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

As of July 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
Global Equity													
SSgA MSCI ACWI IMI Index Fund	719,978,277	55.2	7.15	-1.91	7.15	-10.67	9.92	8.79	8.04	-	-	9.86	May-2016
MSCI AC World IMI (Net)			7.14	-2.04	7.14	-11.01	9.47	8.34	7.60	-	-	9.41	
Excess Return			0.01	0.13	0.01	0.34	0.45	0.45	0.44	-	-	0.45	
Fixed Income													
PIMCO Total Return	190,686,982	14.6	2.77	0.88	2.77	-9.31	-4.57	0.09	1.50	1.91	2.14	5.72	Jan-1991
Blmbg. U.S. Aggregate Index			2.44	1.49	2.44	-9.12	-5.00	-0.21	1.28	1.67	1.65	5.23	
Excess Return			0.33	-0.61	0.33	-0.19	0.43	0.30	0.22	0.24	0.49	0.49	
SSgA Bond Market Index	194,830,890	14.9	2.44	1.46	2.44	-9.16	-4.99	-0.19	1.29	1.68	1.66	2.97	Jan-2009
Blmbg. U.S. Aggregate Index			2.44	1.49	2.44	-9.12	-5.00	-0.21	1.28	1.67	1.65	2.97	
Excess Return			0.00	-0.03	0.00	-0.04	0.01	0.02	0.01	0.01	0.01	0.00	
Real Estate													
JP Morgan Asset Management Strategic Property Fund	57,841,054	4.4	0.01	2.80	0.01	25.51	16.17	11.10	8.79	8.62	9.90	10.26	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.00	4.54	0.00	28.31	17.22	11.66	9.55	9.35	10.15	10.36	
Excess Return			0.01	-1.74	0.01	-2.80	-1.05	-0.56	-0.76	-0.73	-0.25	-0.10	
UBS Trumbull Property Fund	32,020,889	2.5	0.00	3.79	0.00	23.82	11.78	7.02	5.36	5.82	6.96	7.03	Jan-2012
NCREIF Fund Index-ODCE (VW) (Net)			0.00	4.54	0.00	28.31	17.22	11.66	9.55	9.35	10.15	10.06	
Excess Return			0.00	-0.75	0.00	-4.49	-5.44	-4.64	-4.19	-3.53	-3.19	-3.03	
Vanguard Real Estate Index (VGSNX)	16,993,050	1.3	8.66	-4.12	8.66	-3.86	-	-	-	-	-	0.42	Jul-2021
Vanguard Spliced REIT Index			8.68	-4.09	8.68	-4.24	-	-	-	-	-	0.04	
Excess Return			-0.02	-0.03	-0.02	0.38	-	-	-	-	-	0.38	
MLPs													
Harvest MLP	46,532,876	3.6	12.15	4.48	12.15	38.39	43.73	9.82	5.54	2.01	-	4.08	Mar-2013
Alerian MLP Index			12.49	4.27	12.49	25.26	41.25	4.14	1.83	0.00	-	0.14	
Excess Return			-0.34	0.21	-0.34	13.13	2.48	5.68	3.71	2.01	-	3.94	
Tortoise Capital Advisors	45,672,446	3.5	12.67	2.61	12.67	31.67	39.55	5.11	2.17	0.29	-	2.11	Apr-2013
Alerian MLP Index			12.49	4.27	12.49	25.26	41.25	4.14	1.83	0.00	-	-0.42	
Excess Return			0.18	-1.66	0.18	6.41	-1.70	0.97	0.34	0.29	-	2.53	



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

1 Month Ending July 31, 2022

Financial Reconciliation									
	Market Value 07/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 07/31/2022	
Total Fund	1,204,829,944	-	31,417,431	-	-203,081	2,722,532	65,996,052	1,304,762,878	
Global Equity	640,443,527	32,350,500	-	-	-	-	47,184,250	719,978,277	
SSgA MSCI ACWI IMI Index Fund	640,443,527	32,350,500	-	-	-	-	47,184,250	719,978,277	
Fixed Income	375,735,264	-	-	-	-	1,706,987	8,075,621	385,517,872	
PIMCO Total Return	185,545,098	-	-	-	-	1,706,987	3,434,898	190,686,982	
SSgA Bond Market Index	190,190,166	-	-	-	-	-	4,640,724	194,830,890	
Real Estate	106,621,398	-1,125,630	-	-	-203,081	394,183	1,168,123	106,854,993	
JP Morgan Asset Management Strategic Property Fund	57,836,636	-61	-	-	-133,266	131,452	6,293	57,841,054	
UBS Trumbull Property Fund	33,146,457	-1,125,568	-	-	-69,816	262,731	-192,916	32,020,889	
Vanguard Real Estate Index (VGSNX)	15,638,304	-	-	-	-	-	1,354,745	16,993,050	
MLPs	82,025,265	-	-	-	-	611,567	9,568,490	92,205,322	
Harvest MLP	41,490,231	-	-	-	-	275,716	4,766,929	46,532,876	
Tortoise Capital Advisors	40,535,034	-	-	-	-	335,850	4,801,561	45,672,446	
Cash	4,491	-31,224,870	31,417,431	-	-	9,795	-432	206,415	



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

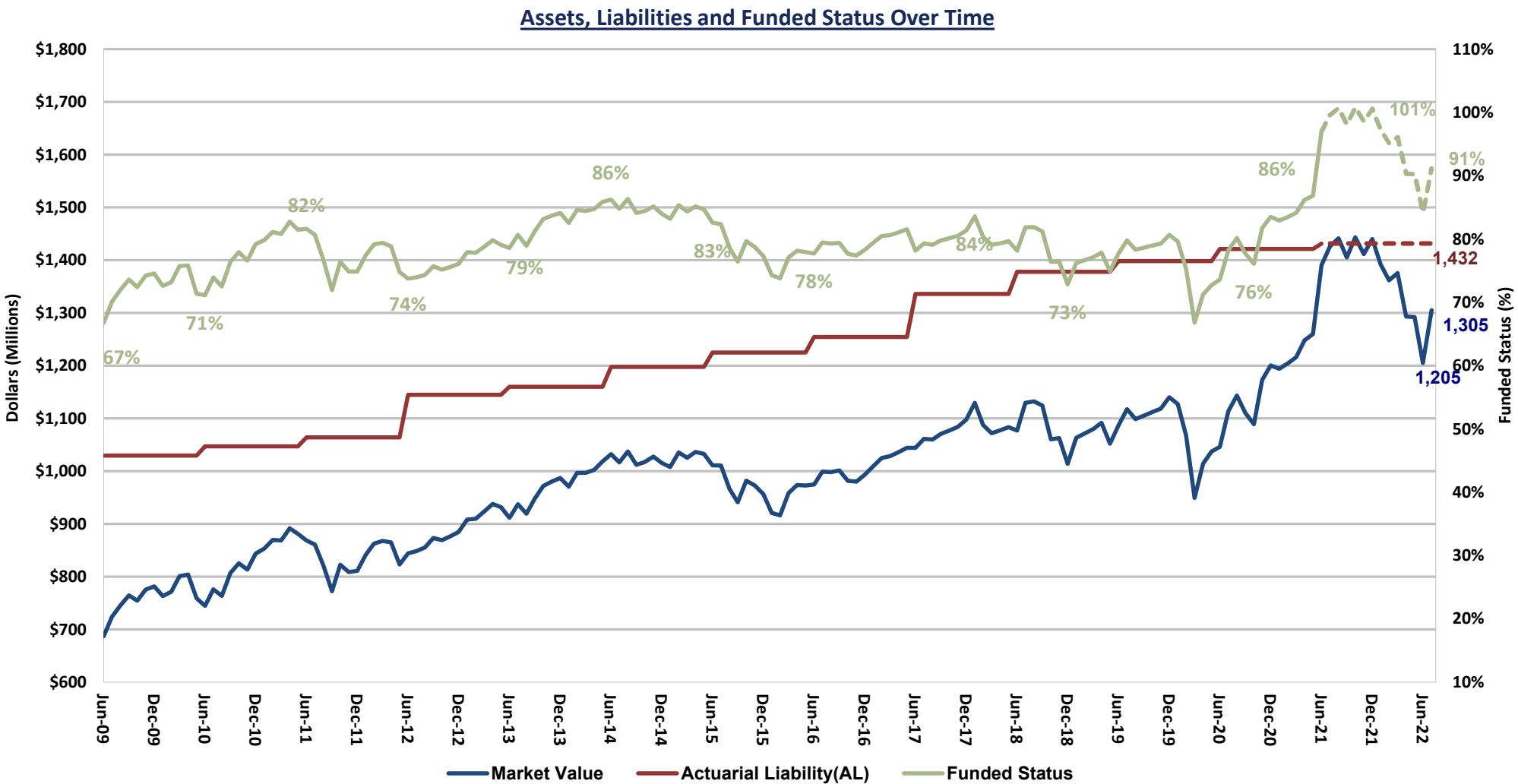
July 1, 2022 To July 31, 2022

Financial Reconciliation									
	Market Value 07/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 07/31/2022	
Total Fund	1,204,829,944	-	31,417,431	-	-203,081	2,722,532	65,996,052	1,304,762,878	
Global Equity	640,443,527	32,350,500	-	-	-	-	47,184,250	719,978,277	
SSgA MSCI ACWI IMI Index Fund	640,443,527	32,350,500	-	-	-	-	47,184,250	719,978,277	
Fixed Income	375,735,264	-	-	-	-	1,706,987	8,075,621	385,517,872	
PIMCO Total Return	185,545,098	-	-	-	-	1,706,987	3,434,898	190,686,982	
SSgA Bond Market Index	190,190,166	-	-	-	-	-	4,640,724	194,830,890	
Real Estate	106,621,398	-1,125,630	-	-	-203,081	394,183	1,168,123	106,854,993	
JP Morgan Asset Management Strategic Property Fund	57,836,636	-61	-	-	-133,266	131,452	6,293	57,841,054	
UBS Trumbull Property Fund	33,146,457	-1,125,568	-	-	-69,816	262,731	-192,916	32,020,889	
Vanguard Real Estate Index (VGSNX)	15,638,304	-	-	-	-	-	1,354,745	16,993,050	
MLPs	82,025,265	-	-	-	-	611,567	9,568,490	92,205,322	
Harvest MLP	41,490,231	-	-	-	-	275,716	4,766,929	46,532,876	
Tortoise Capital Advisors	40,535,034	-	-	-	-	335,850	4,801,561	45,672,446	
Cash	4,491	-31,224,870	31,417,431	-	-	9,795	-432	206,415	



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 June 30, 2022, the Plan's current market value of assets (MVA) was \$1,304,762,878

As of July 31, 2022, the Plan's market value funded ratio (current MVA/fiscal year end AL) was 91.1%

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

Total Fund Policy		Total Fund Strategy Index	
Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)
May-2016			
MSCI AC World IMI (Net)	62.50	MSCI AC World IMI (Net)	55.00
Blmbg. U.S. Aggregate Index	37.50	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.



Employees' Retirement System of the City of Norfolk
Historical Hybrid Composition

As of July 31, 2022

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.

AndCo compiled this report for the sole use of the client for which it was prepared. AndCo is responsible for evaluating the performance results of the Total Fund along with the investment advisors by comparing their performance with indices and other related peer universe data that is deemed appropriate. AndCo uses the results from this evaluation to make observations and recommendations to the client.

AndCo uses time-weighted calculations which are founded on standards recommended by the CFA Institute. The calculations and values shown are based on information that is received from custodians. AndCo analyzes transactions as indicated on the custodian statements and reviews the custodial market values of the portfolio. As a result, this provides AndCo with a reasonable basis that the investment information presented is free from material misstatement. This methodology of evaluating and measuring performance provides AndCo with a practical foundation for our observations and recommendations. Nothing came to our attention that would cause AndCo to believe that the information presented is significantly misstated.

This performance report is based on data obtained by the client's custodian(s), investment fund administrator, or other sources believed to be reliable. While these sources are believed to be reliable, the data providers are responsible for the accuracy and completeness of their statements. Clients are encouraged to compare the records of their custodian(s) to ensure this report fairly and accurately reflects their various asset positions.

The strategies listed may not be suitable for all investors. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. Past performance is not an indication of future performance. Any information contained in this report is for informational purposes only and should not be construed to be an offer to buy or sell any securities, investment consulting, or investment management services.

Additional information included in this document may contain data provided by from index databases, public economic sources and the managers themselves.

This document may contain data provided by Bloomberg Barclays. Bloomberg Barclays Index data provided by way of Barclays Live.

This document may contain data provided by Standard and Poor's. Nothing contained within any document, advertisement or presentation from S&P Indices constitutes an offer of services in jurisdictions where S&P Indices does not have the necessary licenses. All information provided by S&P Indices is impersonal and is not tailored to the needs of any person, entity or group of persons. Any returns or performance provided within any document is provided for illustrative purposes only and does not demonstrate actual performance. Past performance is not a guarantee of future investment results.

This document may contain data provided by MSCI, Inc. Copyright MSCI, 2017. Unpublished. All Rights Reserved. This information may only be used for your internal use, may not be reproduced or disseminated in any form and may not be used to create any financial instruments or products or any indices. This information is provided on an "as is" basis and the user of this information assumes the entire risk of any use it may make or permit to be made of this information. Neither MSCI, any of its affiliates or any other person involved in or related to compiling, computing or creating this information makes any express or implied warranties or representations with respect to such information or the results to be obtained by the use thereof, and MSCI, its affiliates and each such other person hereby expressly disclaim all warranties (including, without limitation, all warranties of originality, accuracy, completeness, timeliness, non-infringement, merchantability and fitness for a particular purpose) with respect to this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any other person involved in or related to compiling, computing or creating this information have any liability for any direct, indirect, special, incidental, punitive, consequential or any other damages (including, without limitation, lost profits) even if notified of, or if it might otherwise have anticipated, the possibility of such damages.

This document may contain data provided by Russell Investment Group. Russell Investment Group is the source owner of the data contained or reflected in this material and all trademarks and copyrights related thereto. The material may contain confidential information and unauthorized use, disclosure, copying, dissemination or redistribution is strictly prohibited. This is a user presentation of the data. Russell Investment Group is not responsible for the formatting or configuration of this material or for any inaccuracy in presentation thereof.

This document may contain data provided by Morningstar. All rights reserved. Use of this content requires expert knowledge. It is to be used by specialist institutions only. The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied, adapted or distributed; and (3) is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information, except where such damages or losses cannot be limited or excluded by law in your jurisdiction. Past financial performance is not a guarantee of future results.

Clients first.



CHICAGO | CLEVELAND | DALLAS | DETROIT | ORLANDO | PITTSBURGH | RENO

AndCo Consulting | (844) 44-ANDCO | AndCoConsulting.com