

Investment Performance Review
Period Ending September 30, 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	(9.21)	(4.88)	(23.87)	(15.47)	8.16	9.24
Russell Midcap Index	(9.27)	(3.44)	(24.27)	(19.39)	5.19	6.48
Russell 2000 Index	(9.58)	(2.19)	(25.10)	(23.50)	4.29	3.55
Russell 1000 Growth Index	(9.72)	(3.60)	(30.66)	(22.59)	10.67	12.16
Russell 1000 Value Index	(8.77)	(5.62)	(17.75)	(11.36)	4.36	5.29
Russell 3000 Index	(9.27)	(4.46)	(24.62)	(17.63)	7.70	8.62
MSCI EAFE NR	(9.35)	(9.36)	(27.09)	(25.13)	(1.83)	(0.84)
MSCI EM NR	(11.72)	(11.57)	(27.16)	(28.11)	(2.07)	(1.81)

Russell Indices Style Returns							
	V	B	G		V	B	G
L	-17.8	-24.6	-30.7	L	25.1	26.4	27.6
M	-20.4	-24.3	-31.4	M	28.3	22.6	12.7
S	-21.1	-25.1	-29.3	S	28.2	14.8	2.8
YTD				2021			

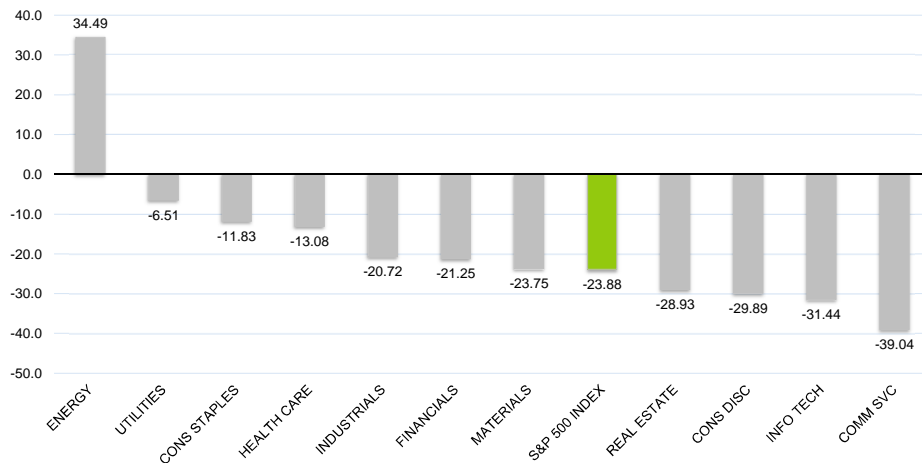
<u>Fixed Income</u>	<u>Index Returns (%)</u>					
	<u>Month</u>	<u>3 M</u>	<u>YTD</u>	<u>1 Year</u>	<u>Mod. Adj. Duration</u>	<u>Yield to Worst</u>
U.S. Aggregate	(4.32)	(4.75)	(14.61)	(14.60)	6.20	4.75
U.S. Corporate Investment Grade	(5.26)	(5.06)	(18.72)	(18.53)	7.09	5.69
U.S. Corporate High Yield	(3.97)	(0.65)	(14.74)	(14.14)	4.11	9.68
Global Aggregate	(5.14)	(6.94)	(19.89)	(20.43)	6.74	3.70

<u>Currencies</u>	<u>Levels</u>		
	<u>09/30/22</u>	<u>12/31/21</u>	<u>12/31/20</u>
Euro Spot	0.98	1.14	1.22
British Pound Spot	1.12	1.35	1.37
Japanese Yen Spot	144.74	115.08	103.25
Swiss Franc Spot	0.99	0.91	0.89

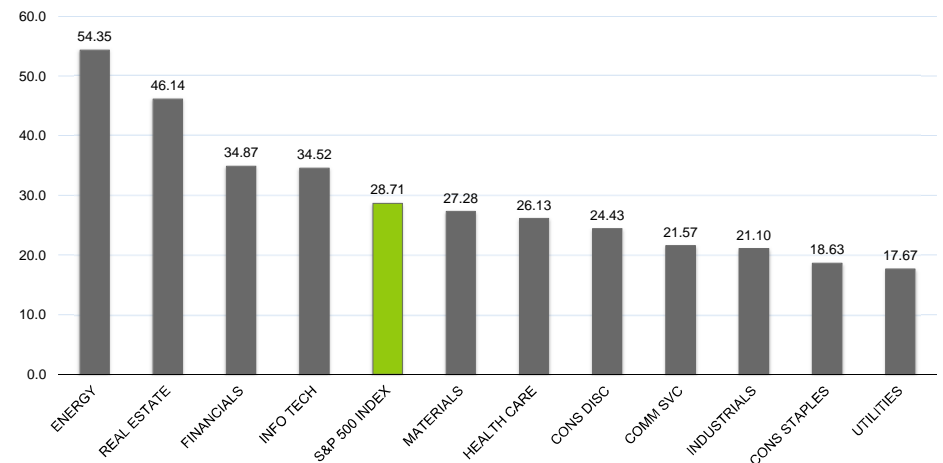
<u>Key Rates</u>	<u>Levels (%)</u>				
	<u>09/30/22</u>	<u>12/31/21</u>	<u>12/31/20</u>	<u>12/31/19</u>	<u>12/31/18</u>
US Generic Govt 3 Mth	3.25	0.03	0.06	1.54	2.35
US Generic Govt 2 Yr	4.28	0.73	0.12	1.57	2.49
US Generic Govt 10 Yr	3.83	1.51	0.91	1.92	2.68
US Generic Govt 30 Yr	3.78	1.90	1.64	2.39	3.01
ICE LIBOR USD 3M	3.75	0.21	0.24	1.91	2.81
Euribor 3 Month ACT/360	1.17	(0.57)	(0.55)	(0.38)	(0.31)
Bankrate 30Y Mortgage Rates Na	7.06	3.27	2.87	3.86	4.51
Prime	6.25	3.25	3.25	4.75	5.50

<u>Commodities</u>	<u>Levels</u>		
	<u>09/30/22</u>	<u>12/31/21</u>	<u>12/31/20</u>
Oil	79.49	70.38	46.29
Gasoline	3.80	3.29	2.25
Natural Gas	6.77	3.79	2.54
Gold	1,672.00	1,840.90	1,187.30
Silver	19.04	23.54	16.50
Copper	341.25	440.95	351.85
Corn	677.50	546.00	403.25
BBG Commodity TR Idx	240.55	211.80	166.63

YTD Sector Returns

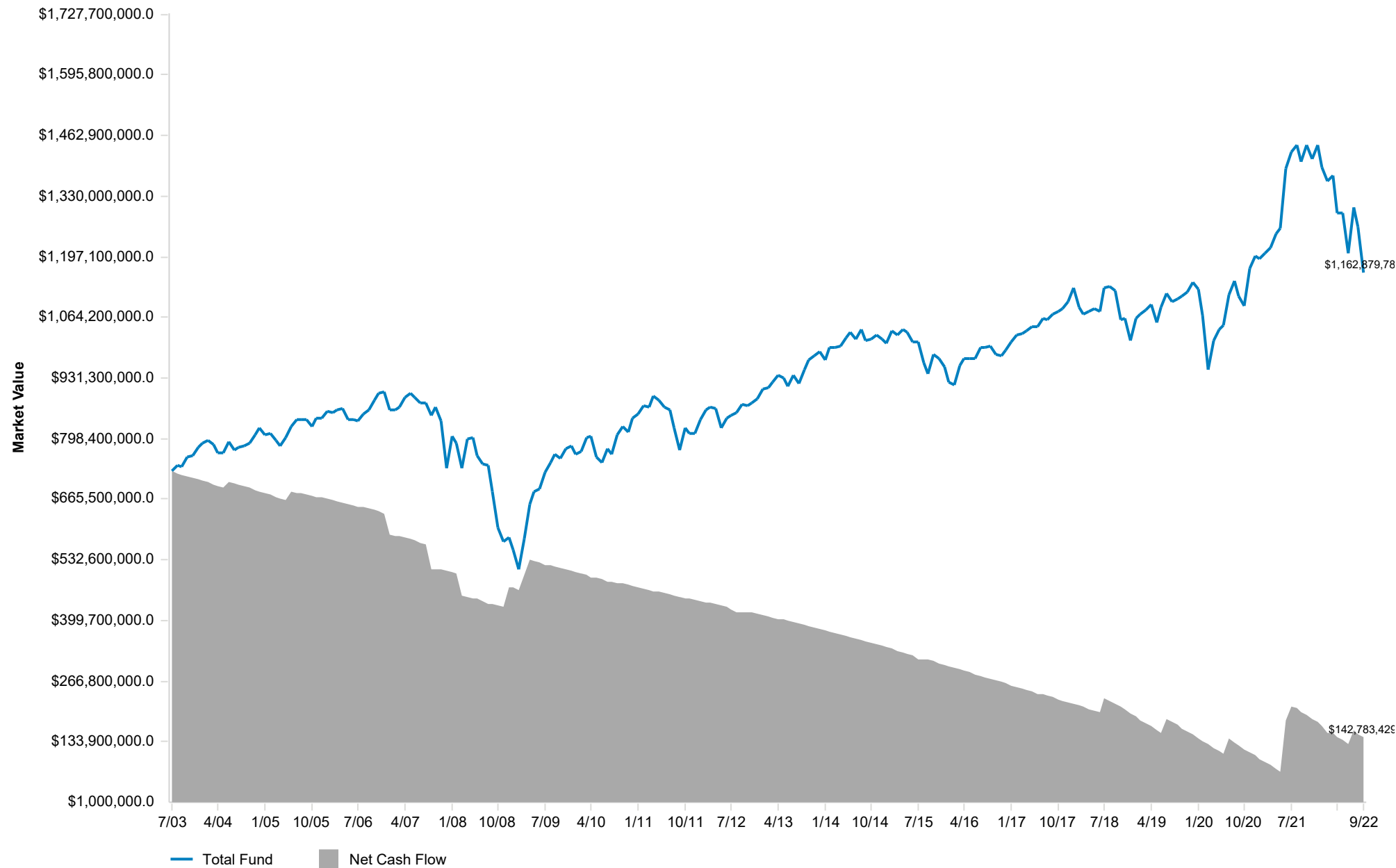


2021 Sector Returns

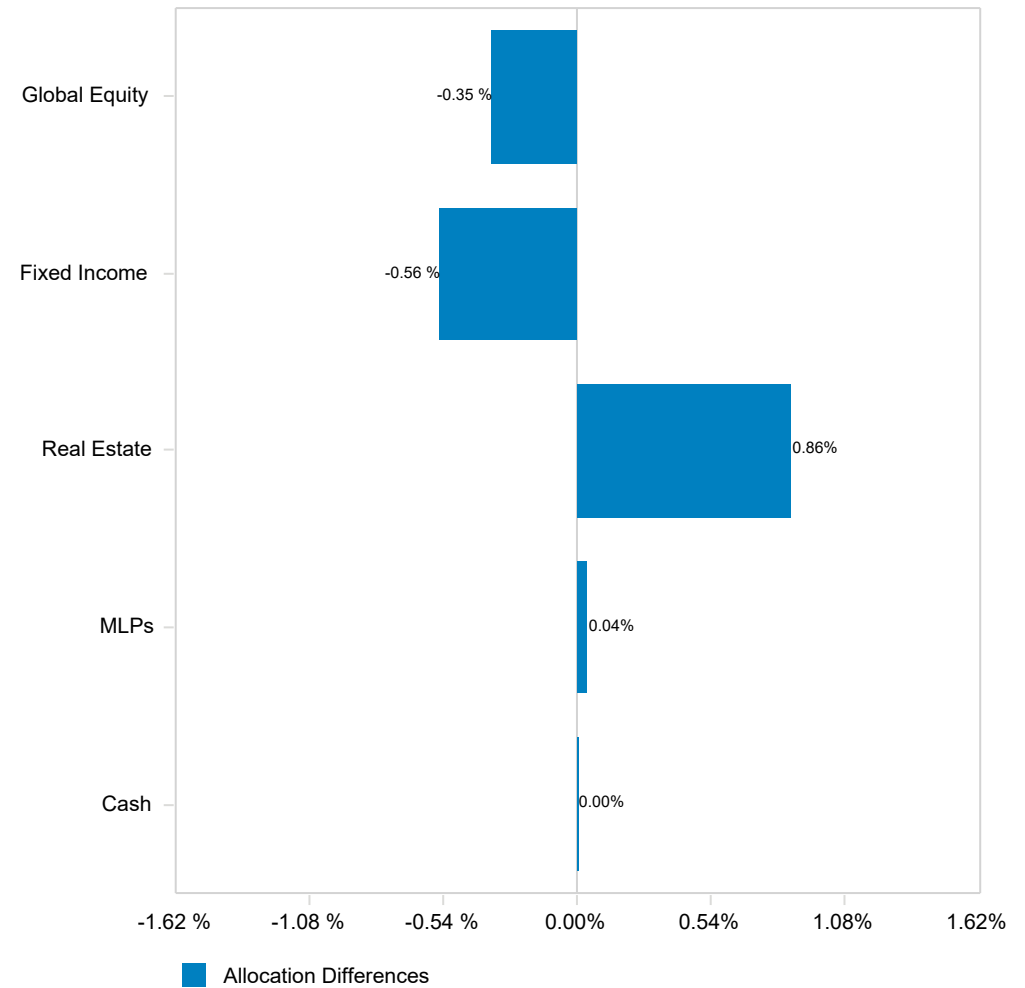
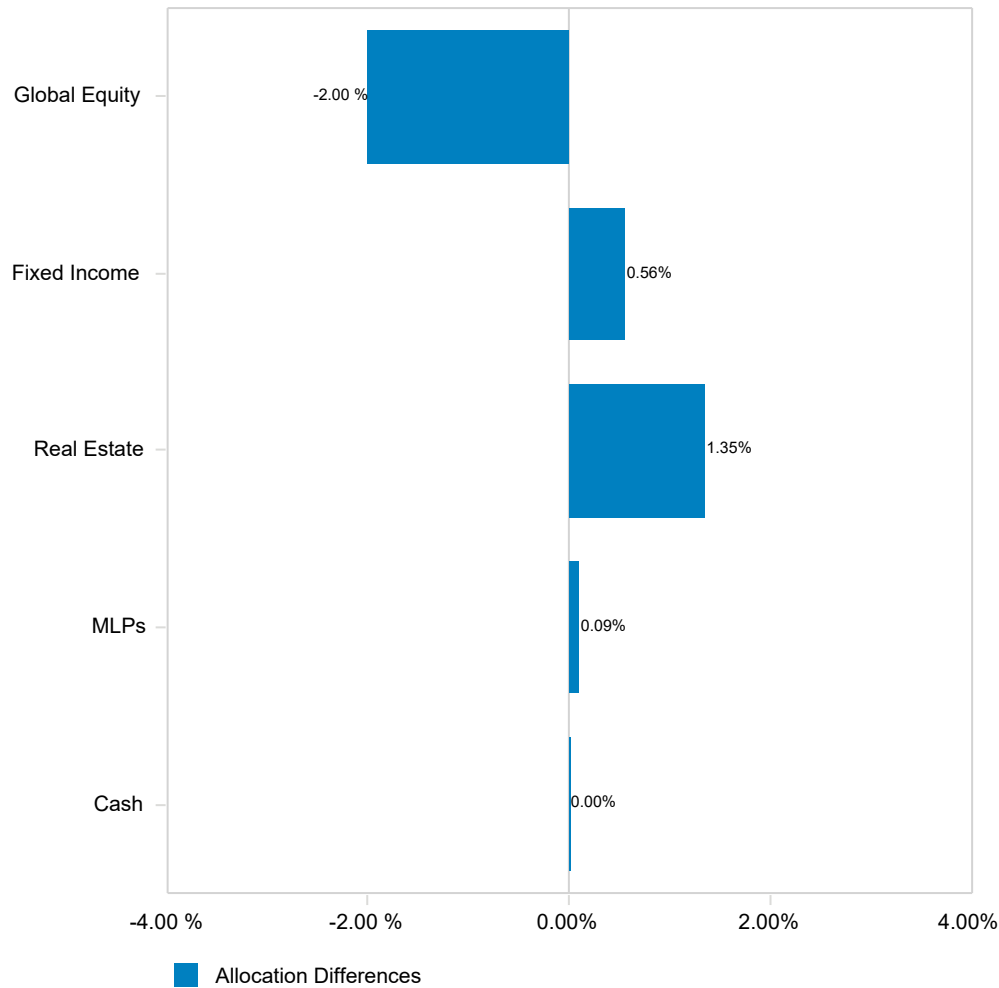


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*Heat maps are displayed utilizing a 9-color scale, with green as the highest return for the time period noted and red as the lowest return for the time period noted. Color scales within each time period are mutually exclusive.

Schedule of Investable Assets



Employees' Retirement System of the City of Norfolk
Asset Allocation vs. Target Allocation
As of September 30, 2022



September 30, 2022				August 31, 2022			
	Market Value \$	Allocation (%)	Target (%)		Market Value \$	Allocation (%)	Target (%)
Global Equity	616,268,425	53.0	55.0	Global Equity	690,105,418	54.7	55.0
Fixed Income	355,426,796	30.6	30.0	Fixed Income	371,795,418	29.4	30.0
Real Estate	102,910,098	8.8	7.5	Real Estate	105,620,969	8.4	7.5
MLPs	88,269,686	7.6	7.5	MLPs	95,173,192	7.5	7.5
Cash	4,781	0.0	0.0	Cash	7,252	0.0	0.0
Total Fund	1,162,879,785	100.0	100.0	Total Fund	1,262,702,249	100.0	100.0



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

As of September 30, 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	1,162,879,785	100.0	-7.28	-4.69	-4.69	-13.94	1.85	2.78	3.46	5.61	5.80	7.48	Oct-1990
Total Fund Policy (62.5% ACWI/37.5% Agg)			-7.65	-5.87	-5.87	-18.57	-2.36	1.38	2.81	4.97	5.22	7.43	
Excess Return			0.37	1.18	1.18	4.63	4.21	1.40	0.65	0.64	0.58	0.05	
Total Fund Strategy Index			-7.15	-4.41	-4.41	-13.51	2.62	3.20	3.78	5.65	5.68	7.59	
Excess Return			-0.13	-0.28	-0.28	-0.43	-0.77	-0.42	-0.32	-0.04	0.12	-0.11	
Composite Returns													
Global Equity	616,268,425	53.0	-9.57	-6.52	-6.52	-20.83	1.37	4.17	4.65	7.79	8.02	8.45	Oct-1990
Global Equity Policy			-9.65	-6.64	-6.64	-21.18	0.80	3.64	4.16	7.29	7.63	8.65	
Excess Return			0.08	0.12	0.12	0.35	0.57	0.53	0.49	0.50	0.39	-0.20	
Fixed Income	355,426,796	30.6	-4.40	-4.61	-4.61	-14.82	-7.97	-3.01	-0.20	0.77	1.01	5.14	Oct-1990
Bloomberg U.S. Aggregate Index			-4.32	-4.75	-4.75	-14.60	-8.00	-3.26	-0.27	0.54	0.89	5.08	
Excess Return			-0.08	0.14	0.14	-0.22	0.03	0.25	0.07	0.23	0.12	0.06	
Real Estate	102,910,098	8.8	-2.57	-2.46	-2.46	10.51	9.42	5.86	5.05	5.57	7.32	8.04	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.35	0.35	0.35	21.00	17.26	11.39	9.27	8.87	9.92	10.24	
Excess Return			-2.92	-2.81	-2.81	-10.49	-7.84	-5.53	-4.22	-3.30	-2.60	-2.20	
MLPs	88,269,686	7.6	-7.25	7.61	7.61	24.34	46.07	7.20	3.65	3.97	-	2.81	Mar-2013
Alerian MLP Index			-7.62	8.05	8.05	19.56	48.57	4.46	1.90	2.55	-	-0.29	
Excess Return			0.37	-0.44	-0.44	4.78	-2.50	2.74	1.75	1.42	-	3.10	
Cash	4,781	0.0											



Employees' Retirement System of the City of Norfolk
Asset Allocation & Performance - (net of fees)
As of September 30, 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	616,268,425	53.0	-9.57	-6.52	-6.52	-20.83	1.26	4.09	4.60	-	-	7.29	May-2016
MSCI AC World IMI (Net)			-9.65	-6.64	-6.64	-21.18	0.80	3.64	4.16	-	-	6.84	
Excess Return			0.08	0.12	0.12	0.35	0.46	0.45	0.44	-	-	0.45	
Fixed Income													
PIMCO Total Return	174,252,165	15.0	-4.50	-4.48	-4.48	-15.02	-7.95	-2.81	-0.14	0.97	1.29	5.45	Jan-1991
Blmbg. U.S. Aggregate Index			-4.32	-4.75	-4.75	-14.60	-8.00	-3.26	-0.27	0.54	0.89	4.96	
Excess Return			-0.18	0.27	0.27	-0.42	0.05	0.45	0.13	0.43	0.40	0.49	
SSgA Bond Market Index	181,174,631	15.6	-4.31	-4.74	-4.74	-14.63	-7.99	-3.24	-0.26	0.55	0.90	2.39	Jan-2009
Blmbg. U.S. Aggregate Index			-4.32	-4.75	-4.75	-14.60	-8.00	-3.26	-0.27	0.54	0.89	2.39	
Excess Return			0.01	0.01	0.01	-0.03	0.01	0.02	0.01	0.01	0.01	0.00	
Real Estate													
JP Morgan Asset Management Strategic Property Fund	56,970,427	4.9	-1.14	-1.50	-1.50	17.98	15.43	10.41	8.23	8.04	9.43	9.96	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.35	0.35	0.35	21.00	17.26	11.39	9.27	8.87	9.92	10.24	
Excess Return			-1.49	-1.85	-1.85	-3.02	-1.83	-0.98	-1.04	-0.83	-0.49	-0.28	
UBS Trumbull Property Fund	32,020,889	2.8	0.00	0.00	0.00	16.57	12.00	6.77	5.10	5.35	6.72	6.92	Jan-2012
NCREIF Fund Index-ODCE (VW) (Net)			0.35	0.35	0.35	21.00	17.26	11.39	9.27	8.87	9.92	9.94	
Excess Return			-0.35	-0.35	-0.35	-4.43	-5.26	-4.62	-4.17	-3.52	-3.20	-3.02	
Vanguard Real Estate Index (VGSNX)	13,918,783	1.2	-12.87	-11.00	-11.00	-18.27	-	-	-	-	-	-14.45	Jul-2021
Vanguard Spliced REIT Index			-12.83	-10.98	-10.98	-18.62	-	-	-	-	-	-14.72	
Excess Return			-0.04	-0.02	-0.02	0.35	-	-	-	-	-	0.27	
MLPs													
Harvest MLP	44,330,758	3.8	-7.01	6.85	6.85	26.49	47.11	9.50	5.31	4.73	-	3.48	Mar-2013
Alerian MLP Index			-7.62	8.05	8.05	19.56	48.57	4.46	1.90	2.55	-	-0.29	
Excess Return			0.61	-1.20	-1.20	6.93	-1.46	5.04	3.41	2.18	-	3.77	
Tortoise Capital Advisors	43,938,928	3.8	-7.50	8.40	8.40	22.27	45.58	5.09	2.12	3.26	-	1.66	Apr-2013
Alerian MLP Index			-7.62	8.05	8.05	19.56	48.57	4.46	1.90	2.55	-	-0.84	
Excess Return			0.12	0.35	0.35	2.71	-2.99	0.63	0.22	0.71	-	2.50	



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

1 Month Ending September 30, 2022

Financial Reconciliation								
	Market Value 09/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 09/30/2022
Total Fund	1,262,702,249	-	-	-8,300,000	-82,374	1,234,318	-92,674,408	1,162,879,785
Global Equity	690,105,418	-8,297,302	-	-	-71,452	-	-65,468,239	616,268,425
SSgA MSCI ACWI IMI Index Fund	690,105,418	-8,297,302	-	-	-71,452	-	-65,468,239	616,268,425
Fixed Income	371,795,418	-	-	-	-9,591	886,988	-17,246,020	355,426,796
PIMCO Total Return	182,461,248	-	-	-	-	886,988	-9,096,072	174,252,165
SSgA Bond Market Index	189,334,170	-	-	-	-9,591	-	-8,149,948	181,174,631
Real Estate	105,620,969	-	-	-	-1,331	292,744	-3,002,284	102,910,098
JP Morgan Asset Management Strategic Property Fund	57,625,048	-	-	-	-	132,324	-786,945	56,970,427
UBS Trumbull Property Fund	32,020,889	-	-	-	-	-	-	32,020,889
Vanguard Real Estate Index (VGSNX)	15,975,033	-	-	-	-1,331	160,420	-2,215,339	13,918,783
MLPs	95,173,192	-	-	-	-	54,043	-6,957,549	88,269,686
Harvest MLP	47,673,528	-	-	-	-	41,801	-3,384,571	44,330,758
Tortoise Capital Advisors	47,499,663	-	-	-	-	12,242	-3,572,978	43,938,928
Cash	7,252	8,297,302	-	-8,300,000	-	543	-316	4,781

Employees' Retirement System of the City of Norfolk

Financial Reconciliation

July 1, 2022 To September 30, 2022

Financial Reconciliation								
	Market Value 07/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 09/30/2022
Total Fund	1,204,829,944	-	31,417,431	-16,400,000	-286,872	5,170,266	-61,850,985	1,162,879,785
Global Equity	640,443,527	19,314,662	-	-	-71,452	-	-43,418,312	616,268,425
SSgA MSCI ACWI IMI Index Fund	640,443,527	19,314,662	-	-	-71,452	-	-43,418,312	616,268,425
Fixed Income	375,735,264	-3,159,024	-	-	-9,591	2,997,583	-20,137,436	355,426,796
PIMCO Total Return	185,545,098	-3,159,024	-	-	-	2,997,583	-11,131,492	174,252,165
SSgA Bond Market Index	190,190,166	-	-	-	-9,591	-	-9,005,944	181,174,631
Real Estate	106,621,398	-1,125,630	-	-	-205,829	823,786	-3,203,627	102,910,098
JP Morgan Asset Management Strategic Property Fund	57,836,636	-61	-	-	-133,266	400,635	-1,133,518	56,970,427
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	-	-	-	-2,747	160,420	-1,877,194	13,918,783
MLPs	82,025,265	-	-	-	-	1,335,208	4,909,212	88,269,686
Harvest MLP	41,490,231	-	-	-	-	656,446	2,184,081	44,330,758
Tortoise Capital Advisors	40,535,034	-	-	-	-	678,762	2,725,131	43,938,928
Cash	4,491	-15,030,008	31,417,431	-16,400,000	-	13,689	-822	4,781

Employees' Retirement System of the City of Norfolk
Historical Hybrid Composition
As of September 30, 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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