

Investment Performance Review
Period Ending December 31, 2021

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	4.48	11.03	28.71	28.71	26.07	18.47
Russell Midcap Index	4.08	6.44	22.58	22.58	23.29	15.10
Russell 2000 Index	2.23	2.14	14.82	14.82	20.02	12.02
Russell 1000 Growth Index	2.11	11.64	27.60	27.60	34.08	25.32
Russell 1000 Value Index	6.31	7.77	25.16	25.16	17.64	11.16
Russell 3000 Index	3.94	9.28	25.66	25.66	25.79	17.97
MSCI EAFE NR	5.12	2.69	11.26	11.26	13.54	9.55
MSCI EM NR	1.88	(1.31)	(2.54)	(2.54)	10.94	9.87

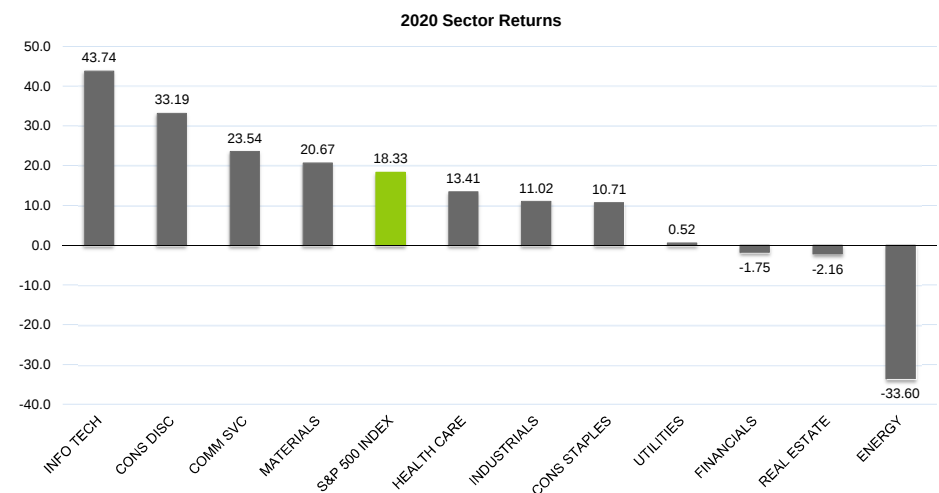
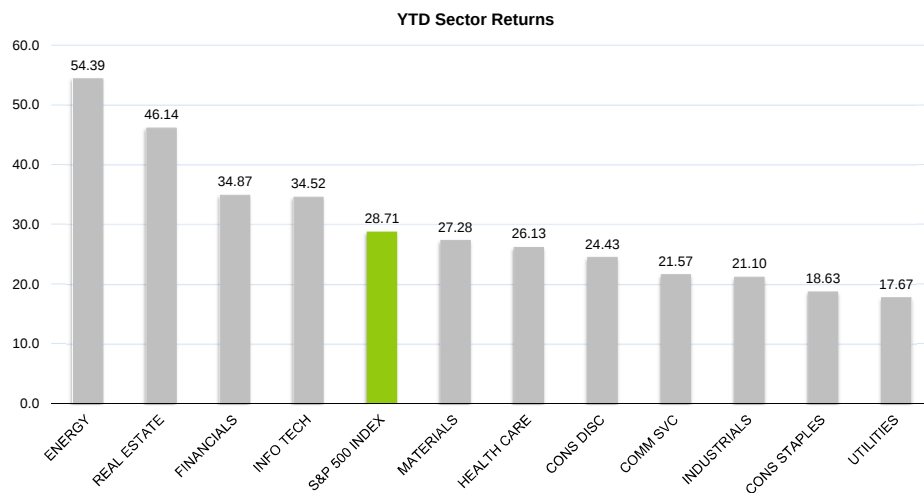
<u>Fixed Income</u>	<u>Index Returns (%)</u>					
	<u>Month</u>	<u>3 M</u>	<u>YTD</u>	<u>1 Year</u>	<u>Mod. Adj. Duration</u>	<u>Yield to Worst</u>
U.S. Aggregate	(0.26)	0.01	(1.55)	(1.55)	6.78	1.75
U.S. Corporate Investment Grade	(0.08)	0.23	(1.04)	(1.04)	8.70	2.33
U.S. Corporate High Yield	1.87	0.71	5.28	5.28	3.83	4.21
Global Aggregate	(0.14)	(0.67)	(4.71)	(4.71)	7.54	1.31

<u>Key Rates</u>	<u>Levels (%)</u>				
	<u>12/31/21</u>	<u>12/31/20</u>	<u>12/31/19</u>	<u>12/31/18</u>	<u>12/31/17</u>
US Generic Govt 3 Mth	0.03	0.06	1.54	2.35	1.38
US Generic Govt 2 Yr	0.73	0.12	1.57	2.49	1.88
US Generic Govt 10 Yr	1.51	0.91	1.92	2.68	2.41
US Generic Govt 30 Yr	1.90	1.64	2.39	3.01	2.74
ICE LIBOR USD 3M	0.21	0.24	1.91	2.81	1.69
Euribor 3 Month ACT/360	(0.57)	(0.55)	(0.38)	(0.31)	(0.33)
Bankrate 30Y Mortgage Rates Na	3.27	2.87	3.86	4.51	3.85
Prime	3.25	3.25	4.75	5.50	4.50

Russell Indices Style Returns *						
V	B	G	V	B	G	
25.1	26.4	27.6	L	2.8	20.9	38.4
28.3	22.6	12.7	M	4.9	17.0	35.5
28.2	14.8	2.8	S	4.6	19.9	34.5
YTD			2020			

<u>Currencies</u>	<u>Levels</u>		
	<u>12/31/21</u>	<u>12/31/20</u>	<u>12/31/19</u>
Euro Spot	1.14	1.22	1.12
British Pound Spot	1.35	1.37	1.33
Japanese Yen Spot	115.08	103.25	108.61
Swiss Franc Spot	0.91	0.89	0.97

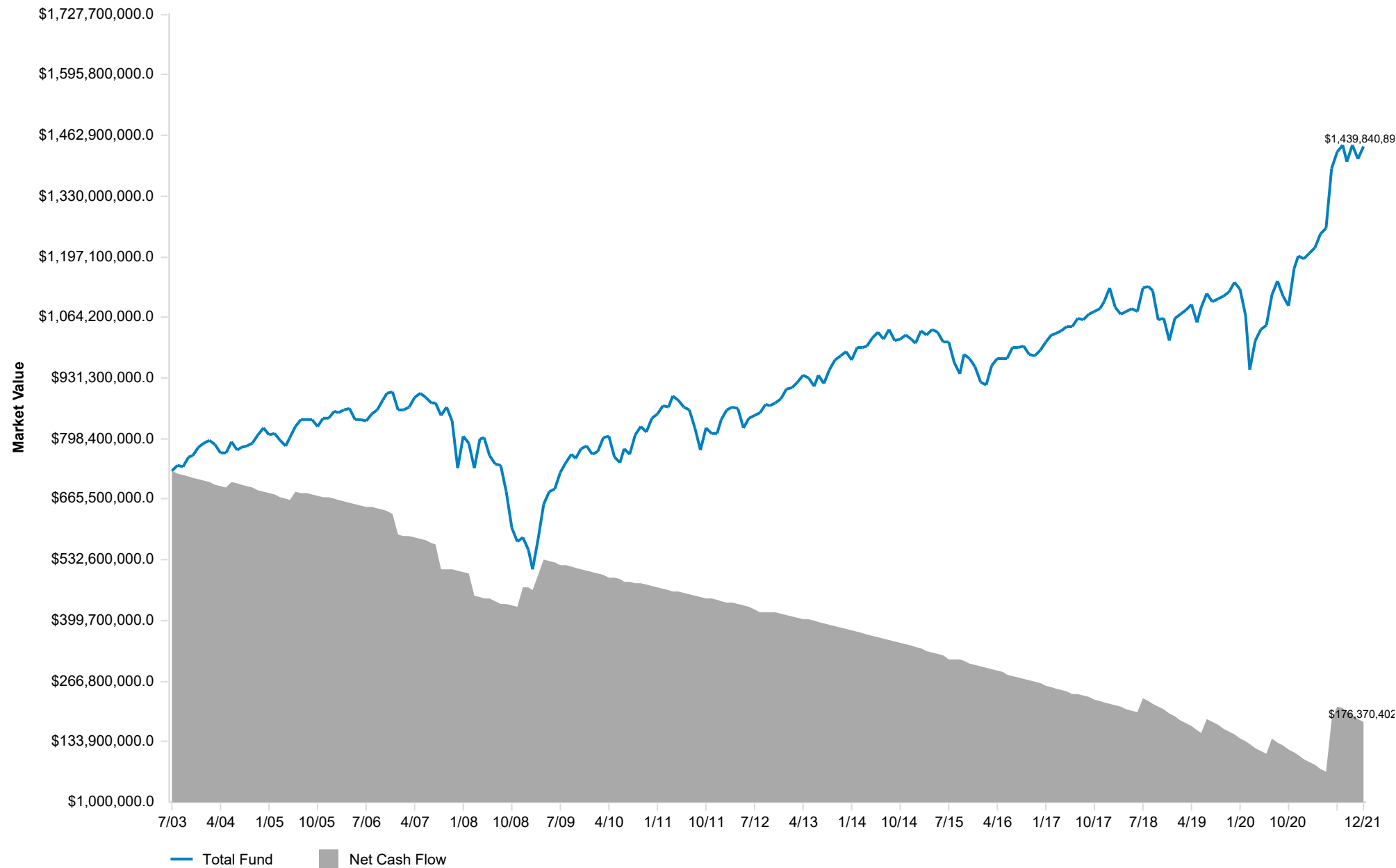
<u>Commodities</u>	<u>Levels</u>		
	<u>12/31/21</u>	<u>12/31/20</u>	<u>12/31/19</u>
Oil	75.21	47.32	52.65
Gasoline	3.29	2.25	2.59
Natural Gas	3.73	2.94	2.65
Gold	1,828.60	1,914.00	1,187.30
Silver	23.35	26.74	16.50
Copper	446.35	352.05	284.85
Corn	593.25	440.25	417.75
BBG Commodity TR Idx	211.80	166.63	172.00



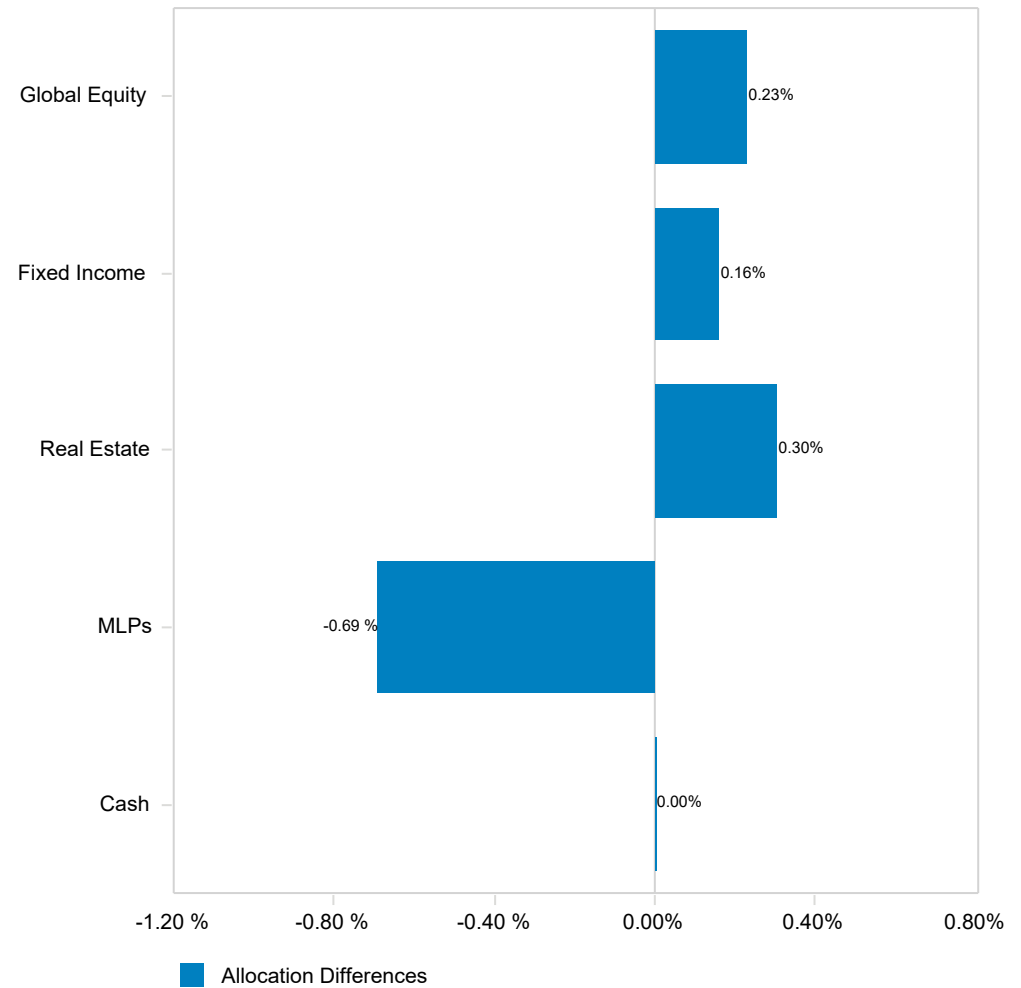
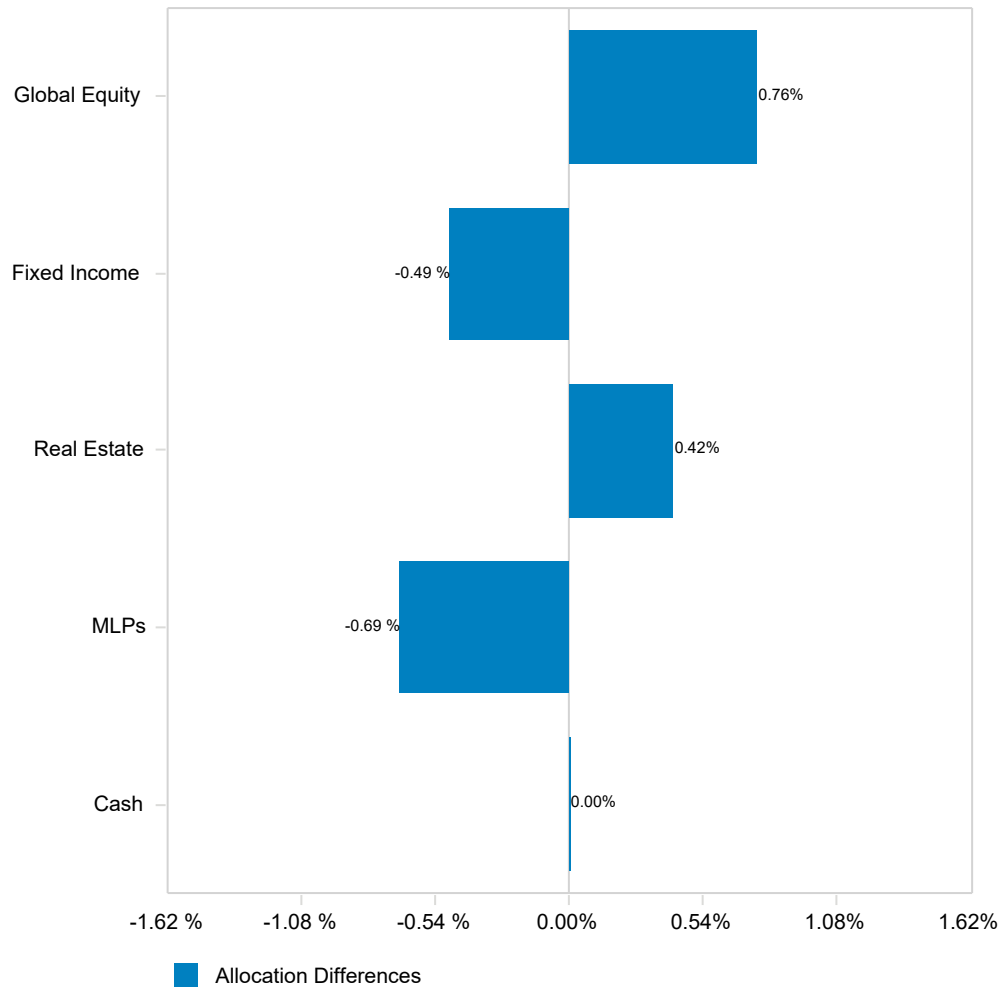
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*Heat maps are displayed utilizing a 9-color scale, with green as the highest return for the time period noted and red as the lowest return for the time period noted. Color scales within each time period are mutually exclusive.

Schedule of Investable Assets



Employees' Retirement System of the City of Norfolk
Asset Allocation vs. Target Allocation
As of December 31, 2021



December 31, 2021				November 30, 2021			
	Market Value \$	Allocation (%)	Target (%)		Market Value \$	Allocation (%)	Target (%)
Global Equity	802,843,392	55.8	55.0	Global Equity	779,500,129	55.2	55.0
Fixed Income	424,934,237	29.5	30.0	Fixed Income	425,661,897	30.2	30.0
Real Estate	113,972,679	7.9	7.5	Real Estate	110,150,222	7.8	7.5
MLPs	98,085,692	6.8	7.5	MLPs	96,116,355	6.8	7.5
Cash	4,899	0.0	0.0	Cash	6,826	0.0	0.0
Total Fund	1,439,840,900	100.0	100.0	Total Fund	1,411,435,429	100.0	100.0



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

As of December 31, 2021

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	1,439,840,900	100.0	2.55	4.06	3.75	13.79	11.76	13.63	9.74	7.81	8.97	8.32	Oct-1990
Total Fund Policy (62.5% ACWI/37.5% Agg)			2.39	3.83	3.15	10.53	12.13	14.61	10.36	8.13	8.85	8.46	
Excess Return			0.16	0.23	0.60	3.26	-0.37	-0.98	-0.62	-0.32	0.12	-0.14	
Total Fund Strategy Index			2.95	4.01	3.50	13.85	12.32	14.16	9.78	7.78	8.70	8.42	
Excess Return			-0.40	0.05	0.25	-0.06	-0.56	-0.53	-0.04	0.03	0.27	-0.10	
Composite Returns													
Global Equity	802,843,392	55.8	3.98	6.17	5.04	18.90	17.87	20.80	14.63	11.31	12.70	9.69	Oct-1990
Global Equity Policy			3.97	6.10	4.92	18.22	17.23	20.20	14.12	10.84	12.33	9.91	
Excess Return			0.01	0.07	0.12	0.68	0.64	0.60	0.51	0.47	0.37	-0.22	
Fixed Income	424,934,237	29.5	-0.17	-0.05	0.19	-1.27	3.34	4.94	3.83	3.24	3.29	5.81	Oct-1990
Bloomberg U.S. Aggregate Index			-0.26	0.01	0.06	-1.55	2.88	4.79	3.57	3.00	2.90	5.74	
Excess Return			0.09	-0.06	0.13	0.28	0.46	0.15	0.26	0.24	0.39	0.07	
Real Estate	113,972,679	7.9	3.47	6.98	11.50	16.01	6.65	4.47	5.18	6.51	7.77	8.30	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			7.69	7.69	14.59	21.06	10.21	8.24	7.75	8.62	9.44	9.79	
Excess Return			-4.22	-0.71	-3.09	-5.05	-3.56	-3.77	-2.57	-2.11	-1.67	-1.49	
MLPs	98,085,692	6.8	1.97	2.23	0.87	40.88	1.41	4.31	-1.24	-3.58	-	0.79	Mar-2013
Alerian MLP Index			3.56	0.55	-5.19	40.17	-0.02	2.12	-2.70	-5.06	-	-2.24	
Excess Return			-1.59	1.68	6.06	0.71	1.43	2.19	1.46	1.48	-	3.03	
Cash	4,899	0.0											



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

As of December 31, 2021

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	802,843,392	55.8	3.98	6.17	5.04	18.62	17.73	20.70	14.58	-	-	14.04	May-2016
MSCI AC World IMI (Net)			3.97	6.10	4.92	18.22	17.23	20.20	14.12	-	-	13.59	
Excess Return			0.01	0.07	0.12	0.40	0.50	0.50	0.46	-	-	0.45	
Fixed Income													
PIMCO Total Return	212,759,090	14.8	-0.06	-0.09	0.33	-1.03	3.71	5.08	4.07	3.46	3.74	6.14	Jan-1991
Blmbg. U.S. Aggregate Index			-0.26	0.01	0.06	-1.55	2.88	4.79	3.57	3.00	2.90	5.62	
Excess Return			0.20	-0.10	0.27	0.52	0.83	0.29	0.50	0.46	0.84	0.52	
SSgA Bond Market Index	212,175,147	14.7	-0.28	-0.02	0.04	-1.53	2.91	4.81	3.58	3.01	2.91	3.79	Jan-2009
Blmbg. U.S. Aggregate Index			-0.26	0.01	0.06	-1.55	2.88	4.79	3.57	3.00	2.90	3.78	
Excess Return			-0.02	-0.03	-0.02	0.02	0.03	0.02	0.01	0.01	0.01	0.01	
Real Estate													
JP Morgan Asset Management Strategic Property Fund	52,095,003	3.6	2.63	7.88	14.86	19.82	9.83	7.63	7.26	8.22	9.33	9.77	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			7.69	7.69	14.59	21.06	10.21	8.24	7.75	8.62	9.44	9.79	
Excess Return			-5.06	0.19	0.27	-1.24	-0.38	-0.61	-0.49	-0.40	-0.11	-0.02	
UBS Trumbull Property Fund	33,886,108	2.4	0.00	0.00	5.98	9.93	2.27	0.50	2.56	4.30	5.82	5.82	Jan-2012
NCREIF Fund Index-ODCE (VW) (Net)			7.69	7.69	14.59	21.06	10.21	8.24	7.75	8.62	9.44	9.44	
Excess Return			-7.69	-7.69	-8.61	-11.13	-7.94	-7.74	-5.19	-4.32	-3.62	-3.62	
Vanguard Real Estate Index (VGSNX)	27,991,569	1.9	9.75	14.96	15.73	-	-	-	-	-	-	15.73	Jul-2021
Vanguard Spliced REIT Index			9.73	14.94	15.75	-	-	-	-	-	-	15.75	
Excess Return			0.02	0.02	-0.02	-	-	-	-	-	-	-0.02	
MLPs													
Harvest MLP	49,568,773	3.4	1.46	2.66	2.39	43.42	3.90	6.72	-0.19	-3.00	-	1.36	Mar-2013
Alerian MLP Index			3.56	0.55	-5.19	40.17	-0.02	2.12	-2.70	-5.06	-	-2.24	
Excess Return			-2.10	2.11	7.58	3.25	3.92	4.60	2.51	2.06	-	3.60	
Tortoise Capital Advisors	48,516,920	3.4	2.50	1.71	-0.93	38.98	-0.89	2.06	-2.20	-4.13	-	-0.32	Apr-2013
Alerian MLP Index			3.56	0.55	-5.19	40.17	-0.02	2.12	-2.70	-5.06	-	-2.85	
Excess Return			-1.06	1.16	4.26	-1.19	-0.87	-0.06	0.50	0.93	-	2.53	



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

1 Month Ending December 31, 2021

Financial Reconciliation								
	Market Value 12/01/2021	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 12/31/2021
Total Fund	1,411,435,429	-	74,882	-7,500,000	-77,007	688,890	35,218,706	1,439,840,900
Global Equity	779,500,129	-7,498,000	-	-	-	-	30,841,263	802,843,392
SSgA MSCI ACWI IMI Index Fund	779,500,129	-7,498,000	-	-	-	-	30,841,263	802,843,392
Fixed Income	425,661,897	-	-	-	-	220,632	-948,293	424,934,237
PIMCO Total Return	212,881,374	-	-	-	-	220,632	-342,916	212,759,090
SSgA Bond Market Index	212,780,523	-	-	-	-	-	-605,376	212,175,147
Real Estate	110,150,222	-	-	-	-2,125	403,762	3,420,820	113,972,679
JP Morgan Asset Management Strategic Property Fund	50,758,872	-	-	-	-	150,673	1,185,458	52,095,003
UBS Trumbull Property Fund	33,886,108	-	-	-	-	-	-	33,886,108
Vanguard Real Estate Index (VGSNX)	25,505,243	-	-	-	-2,125	253,090	2,235,362	27,991,569
MLPs	96,116,355	-	74,882	-	-74,882	64,496	1,904,842	98,085,692
Harvest MLP	48,857,188	-	-	-	-	57,780	653,804	49,568,773
Tortoise Capital Advisors	47,259,166	-	74,882	-	-74,882	6,715	1,251,038	48,516,920
Cash	6,826	7,498,000	-	-7,500,000	-	-	73	4,899



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

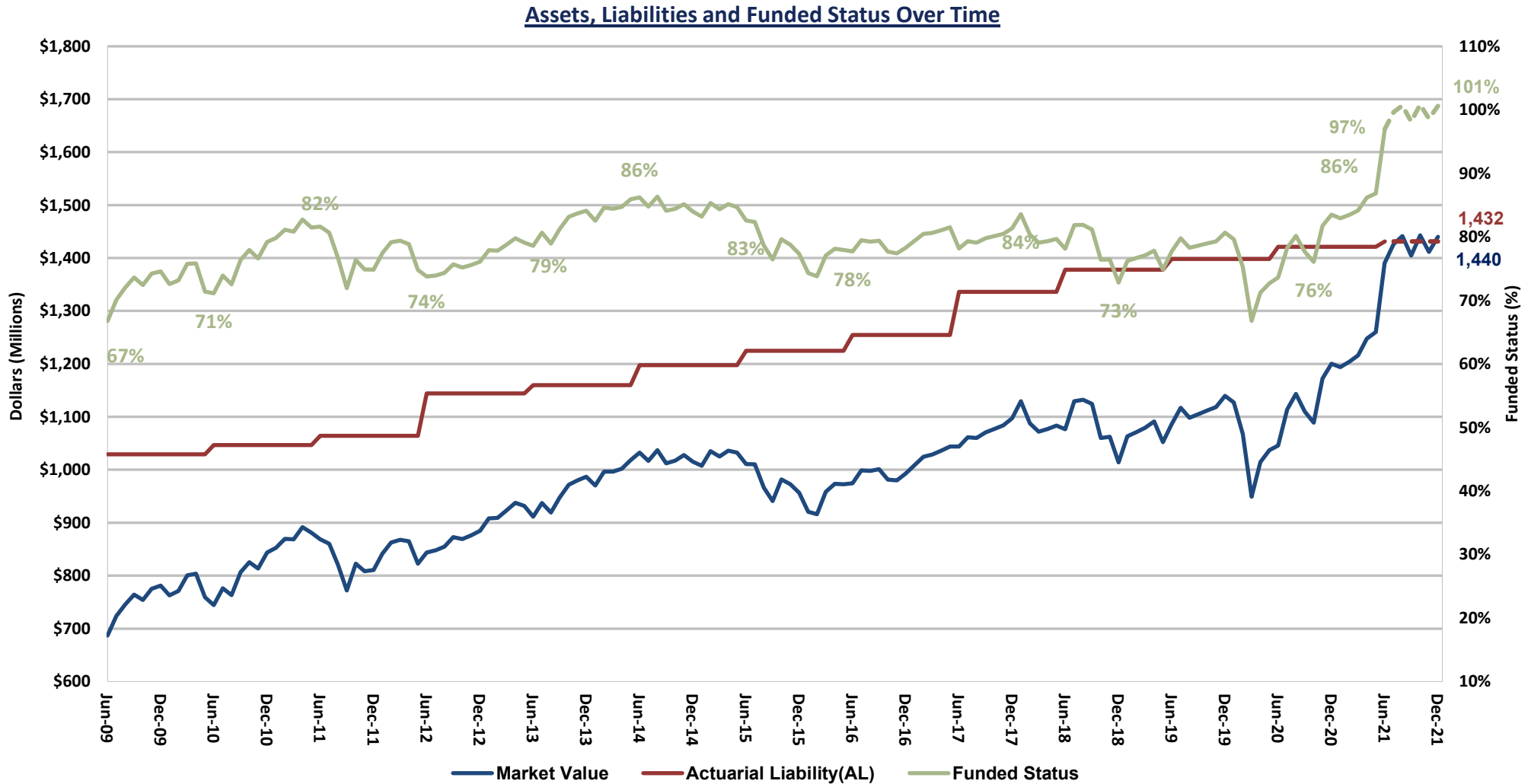
July 1, 2021 To December 31, 2021

Financial Reconciliation								
	Market Value 07/01/2021	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 12/31/2021
Total Fund	1,390,335,588	-	31,243,961	-34,349,000	-631,247	7,188,546	46,053,051	1,439,840,900
Global Equity	779,940,629	-15,898,000	-	-	-158,275	-	38,959,039	802,843,392
SSgA MSCI ACWI IMI Index Fund	779,940,629	-15,898,000	-	-	-158,275	-	38,959,039	802,843,392
Fixed Income	428,086,879	-4,059,000	76,011	-	-95,911	2,189,928	-1,263,670	424,934,237
PIMCO Total Return	215,989,678	-4,059,000	76,011	-	-76,011	2,189,928	-1,361,516	212,759,090
SSgA Bond Market Index	212,097,201	-	-	-	-19,901	-	97,846	212,175,147
Real Estate	81,594,793	20,644,418	-	-	-302,178	1,684,964	10,350,683	113,972,679
JP Morgan Asset Management Strategic Property Fund	45,356,339	-6	-	-	-215,328	715,588	6,238,410	52,095,003
UBS Trumbull Property Fund	36,238,454	-4,355,575	-	-	-76,266	558,831	1,520,664	33,886,108
Vanguard Real Estate Index (VGSNX)	-	25,000,000	-	-	-10,584	410,545	2,591,608	27,991,569
MLPs	100,706,225	-3,940,000	74,882	-	-74,882	3,310,699	-1,991,232	98,085,692
Harvest MLP	51,807,422	-3,940,000	-	-	-	1,718,860	-17,509	49,568,773
Tortoise Capital Advisors	48,898,803	-	74,882	-	-74,882	1,591,840	-1,973,724	48,516,920
Cash	7,062	3,252,582	31,093,069	-34,349,000	-	2,955	-1,768	4,899



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 December 31, 2021, the Plan's current market value of assets (MVA) was \$1,439,740,900.

As of December 31, 2021, the Plan's market value funded ratio (current MVA/fiscal year end AL) was 100.6%



Employees' Retirement System of the City of Norfolk
Historical Hybrid Composition
As of December 31, 2021

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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