

Investment Performance Review
Period Ending March 31, 2020

**Charter Township of Ypsilanti
Firefighters' Healthcare
Benefit Fund**



Charter Township of Ypsilanti Firefighters' Healthcare Benefit Fund

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Index Returns (%)

Equities	Month	3 M	YTD	1 Year	3 Yr Ann	5 Yr Ann
S&P 500 Total Return	(12.35)	(19.60)	(19.60)	(6.98)	5.10	6.73
Russell Midcap Index	(19.49)	(27.07)	(27.07)	(18.31)	(0.81)	1.85
Russell 2000 Index	(21.73)	(30.61)	(30.61)	(23.99)	(4.64)	(0.25)
Russell 1000 Growth Index	(9.84)	(14.10)	(14.10)	0.91	11.32	10.36
Russell 1000 Value Index	(17.09)	(26.73)	(26.73)	(17.17)	(2.18)	1.90
Russell 3000 Index	(13.75)	(20.90)	(20.90)	(9.13)	4.00	5.77
MSCI EAFE NR	(13.35)	(22.83)	(22.83)	(14.38)	(1.82)	(0.62)
MSCI EM NR	(15.40)	(23.60)	(23.60)	(17.69)	(1.62)	(0.37)

Russell Indices Style Returns

	V	B	G		V	B	G
L	-26.7	-20.2	-14.1	L	26.5	31.4	36.4
M	-31.7	-27.1	-20.0	M	27.0	30.5	35.5
S	-35.7	-30.6	-25.8	S	22.4	25.5	28.4
	YTD				2019		

Index Returns (%)

Fixed Income	Month	3 M	YTD	1 Year	Mod. Adj. Duration	Yield to Worst
U.S. Aggregate	(0.59)	3.15	3.15	8.93	5.69	1.59
U.S. Corporate Investment Grade	(7.09)	(3.63)	(3.63)	4.98	7.98	3.43
U.S. Corporate High Yield	(11.46)	(12.68)	(12.68)	(6.94)	4.06	9.44
Global Aggregate	(2.24)	(0.33)	(0.33)	4.20	7.03	1.22

Currencies

	03/31/20	12/31/19	12/31/18
Euro Spot	1.10	1.12	1.15
British Pound Spot	1.24	1.33	1.28
Japanese Yen Spot	107.54	108.61	109.69
Swiss Franc Spot	0.96	0.97	0.98

Levels

Levels (%)

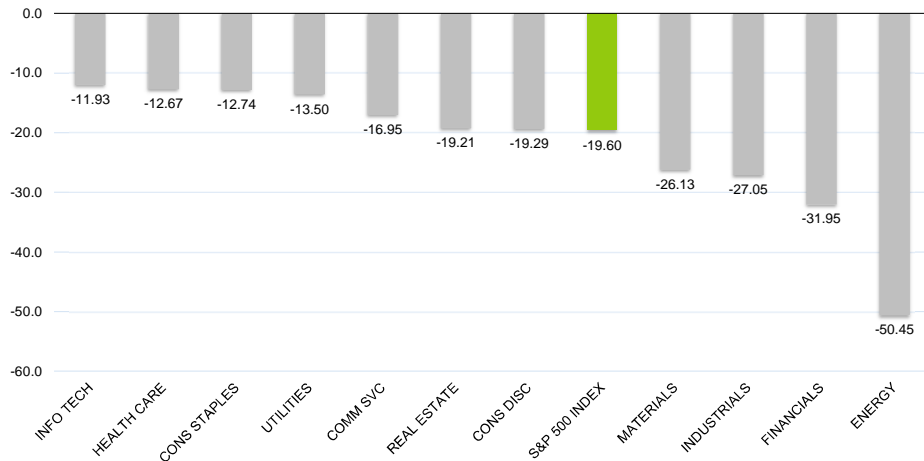
Key Rates	03/31/20	12/31/19	12/31/18	12/31/17	12/31/16
US Generic Govt 3 Mth	0.06	1.54	2.35	1.38	0.50
US Generic Govt 2 Yr	0.25	1.57	2.49	1.88	1.19
US Generic Govt 10 Yr	0.67	1.92	2.68	2.41	2.44
US Generic Govt 30 Yr	1.32	2.39	3.01	2.74	3.07
ICE LIBOR USD 3M	1.45	1.91	2.81	1.69	1.00
Euribor 3 Month ACT/360	(0.36)	(0.38)	(0.31)	(0.33)	(0.32)
Bankrate 30Y Mortgage Rates Na	3.86	3.86	4.51	3.85	4.06
Prime	3.25	4.75	5.50	4.50	3.75

Commodities

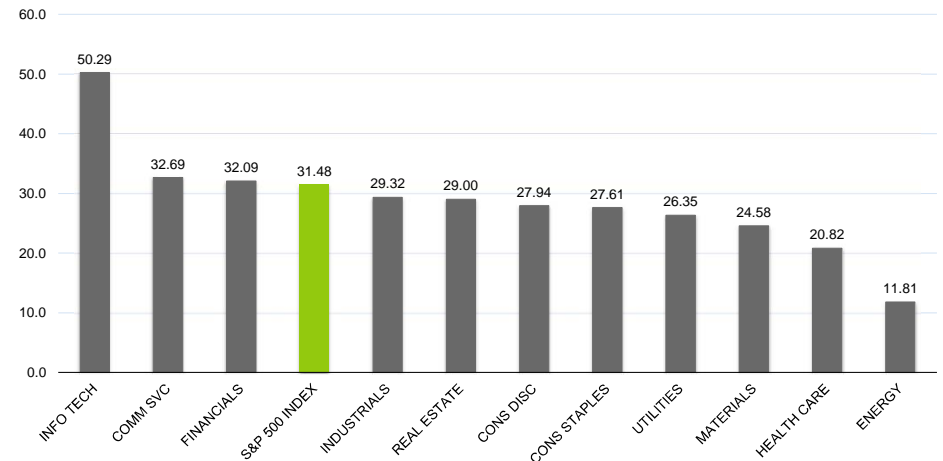
	03/31/20	12/31/19	12/31/18
Oil	20.48	59.97	48.99
Gasoline	1.98	2.59	2.26
Natural Gas	1.64	2.19	2.49
Gold	1,596.60	1,535.10	1,187.30
Silver	14.16	18.01	16.50
Copper	222.80	280.75	265.75
Corn	340.75	394.75	412.75
BBG Commodity TR Idx	131.94	172.00	159.72

Levels

YTD Sector Returns



2019 Sector Returns



Market Summary:

The first quarter of 2020 marked a return of a bear market across all parts of the equity markets. The S&P 500 peaked on February 20th before falling 33.8% to its low on March 23. For the quarter, the S&P 500 fell -19.60%. Mid cap stocks (-27.1%) and small cap stocks (-30.6%) were punished more severely as investors shunned the riskier segments of the markets. International markets also collapsed with the developed markets falling -22.8% (MSCI EAFE) and the emerging markets declining -23.6% (MSCI Emerging Markets). Treasuries provided a refuge during the equity market chaos, rising 8.2% as rates dropped. Corporate bonds traded in concert with the equity markets and generated negative returns, as Investment Grade Corporates fell -3.6% and High Yield fell -12.7%.

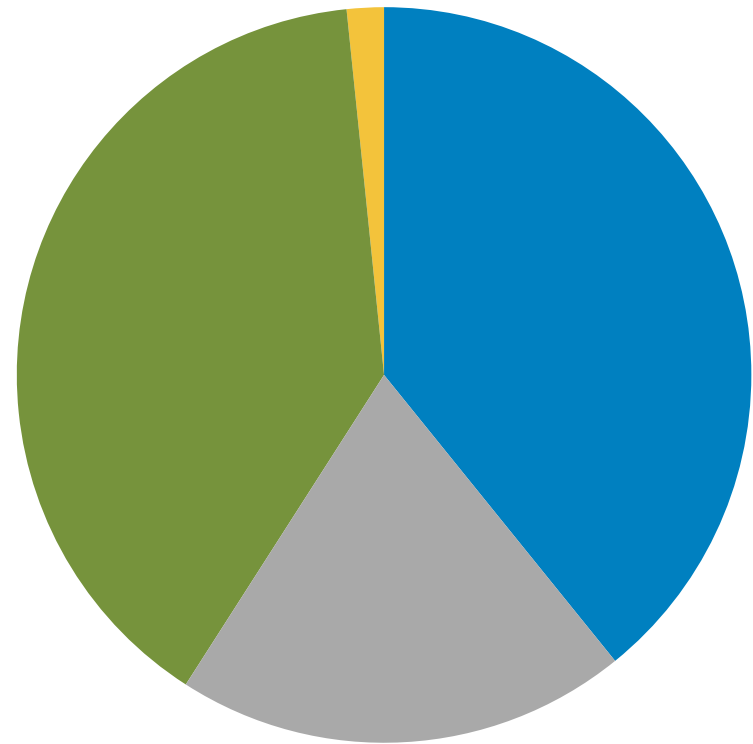
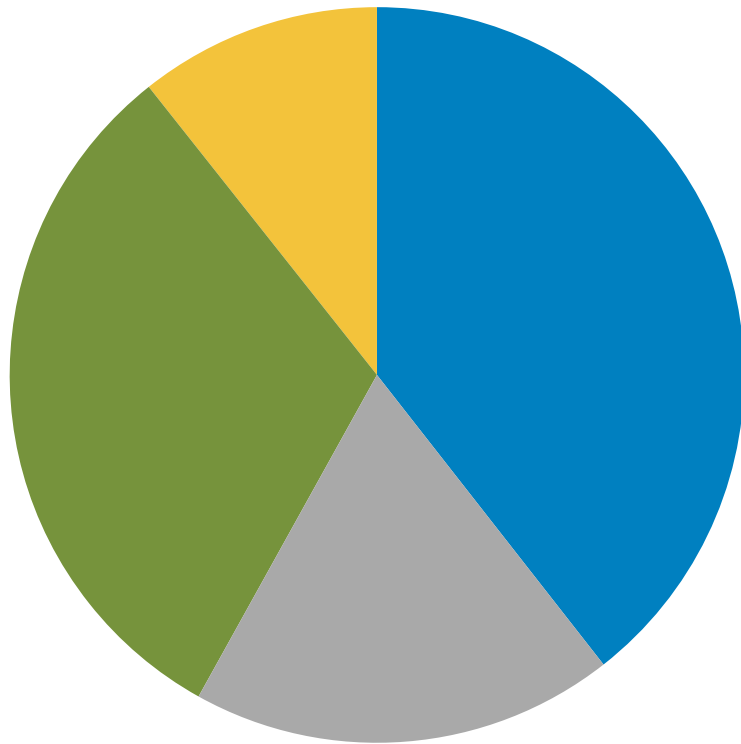
The Federal Reserve responded swiftly to stem the bleeding, using their GFC playbook and quickly deploying programs in that took months to design back in 2008. The response has been enormous with five times more liquidity being deployed now than in 2008. Additionally, a unified political response resulted in a \$2 trillion stimulus package for US consumers and businesses. These actions seem to have stabilized market functions and allowed stocks to reverse some losses from earlier in the month. Much of the commentary around individual manager performance seeks to provide context, not consolation.

1. Total fund results for the quarter of -12.40% trailed the policy index return of -12.18%. The primary cause of the lag in performance was Vanguard Intermediate Bond.
2. S&P Low Volatility returned -19.05% for the quarter, slightly outperforming the broad S&P 500 loss of -19.61%.
3. The Vanguard Extended Market Index portfolio was the lowest performer, falling -28.00% for the quarter.
4. Vanguard International Growth outperformed their benchmark, falling -15.52% vs. -23.26%. The growth bias in the portfolio aided returns, as did exposure to names like Amazon and HelloFresh.
5. Vanguard Intermediate Bond fell -0.48% for the quarter vs. +2.83% frothier benchmark. The portfolio's overweight to corporate bonds impacted returns the most.
6. As of 3/31/2020 the portfolio was in compliance with the Investment Policy Statement and Public Act 314, as amended.



December 31, 2019 : \$7,685,950

March 31, 2020 : \$6,084,736

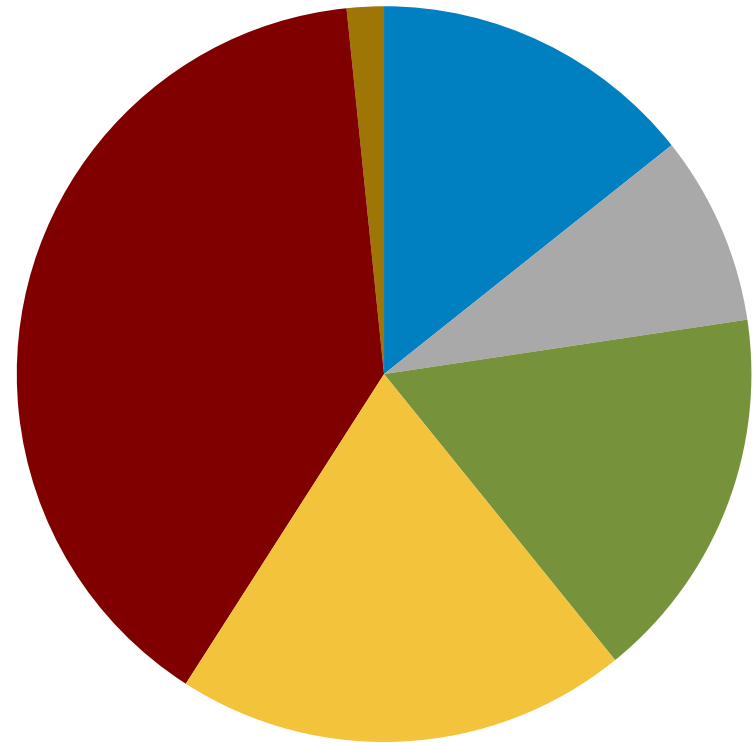
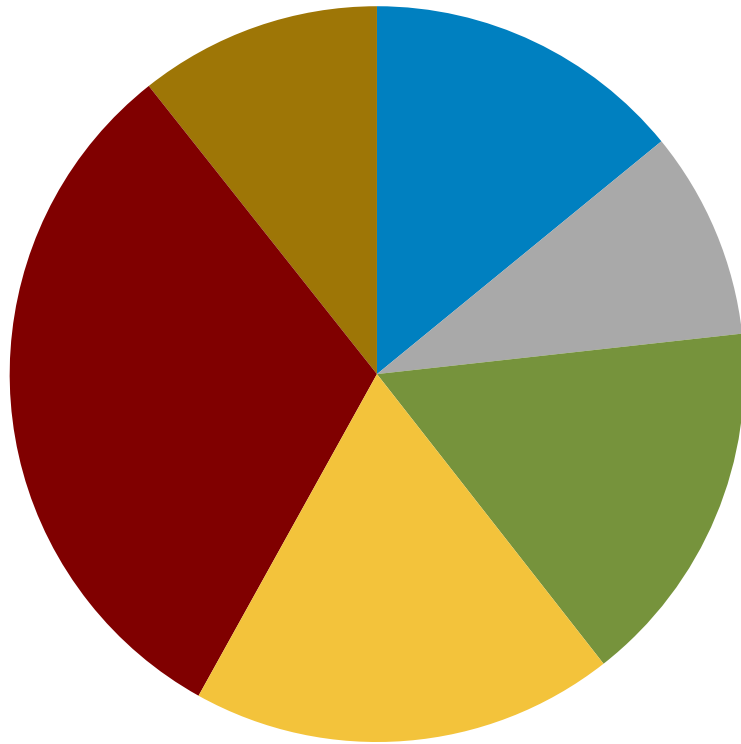


Allocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
■ US Equity	3,029,940	39.4	■ US Equity	2,383,694	39.2
■ International Equity	1,433,464	18.7	■ International Equity	1,211,033	19.9
■ US Fixed Income	2,402,397	31.3	■ US Fixed Income	2,390,785	39.3
■ Cash	820,149	10.7	■ Cash	99,225	1.6



December 31, 2019 : \$7,685,950

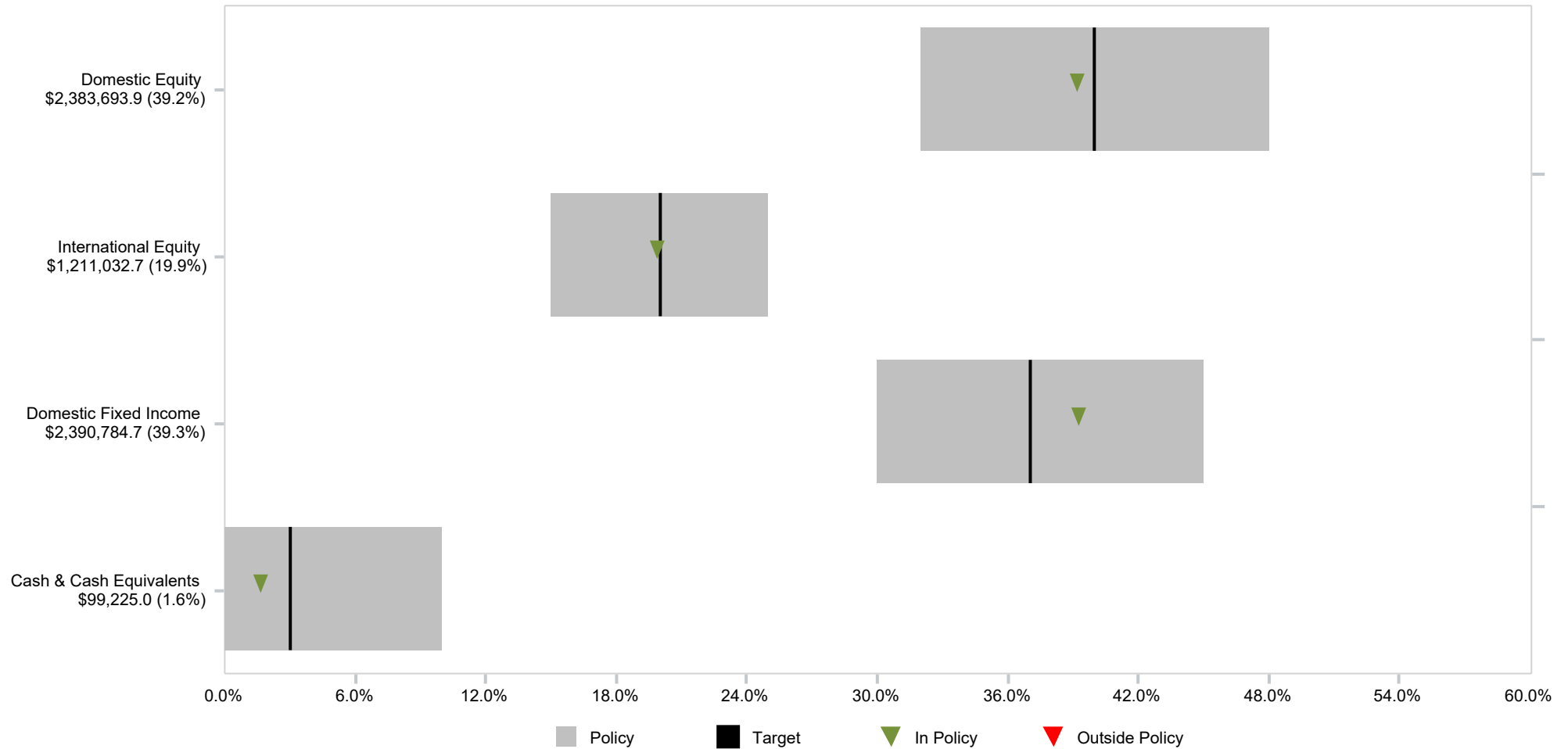
March 31, 2020 : \$6,084,736



Allocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
■ Vanguard 500 Index (VFIAX)	1,083,003	14.1	■ Vanguard 500 Index (VFIAX)	870,614	14.3
■ Vanguard Extended Mkt Index (VEXAX)	703,381	9.2	■ Vanguard Extended Mkt Index (VEXAX)	506,438	8.3
■ Invesco S&P 500 Low Volatility ETF	1,243,555	16.2	■ Invesco S&P 500 Low Volatility ETF	1,006,643	16.5
■ Vanguard International Growth Adm (VWILX)	1,433,464	18.7	■ Vanguard International Growth Adm (VWILX)	1,211,033	19.9
■ Vanguard Inter-Term Invest-Gr Adm (VFIDX)	2,402,397	31.3	■ Vanguard Inter-Term Invest-Gr Adm (VFIDX)	2,390,785	39.3
■ Federal Money Market Fund (VMFXX)	820,149	10.7	■ Federal Money Market Fund (VMFXX)	99,225	1.6



Executive Summary

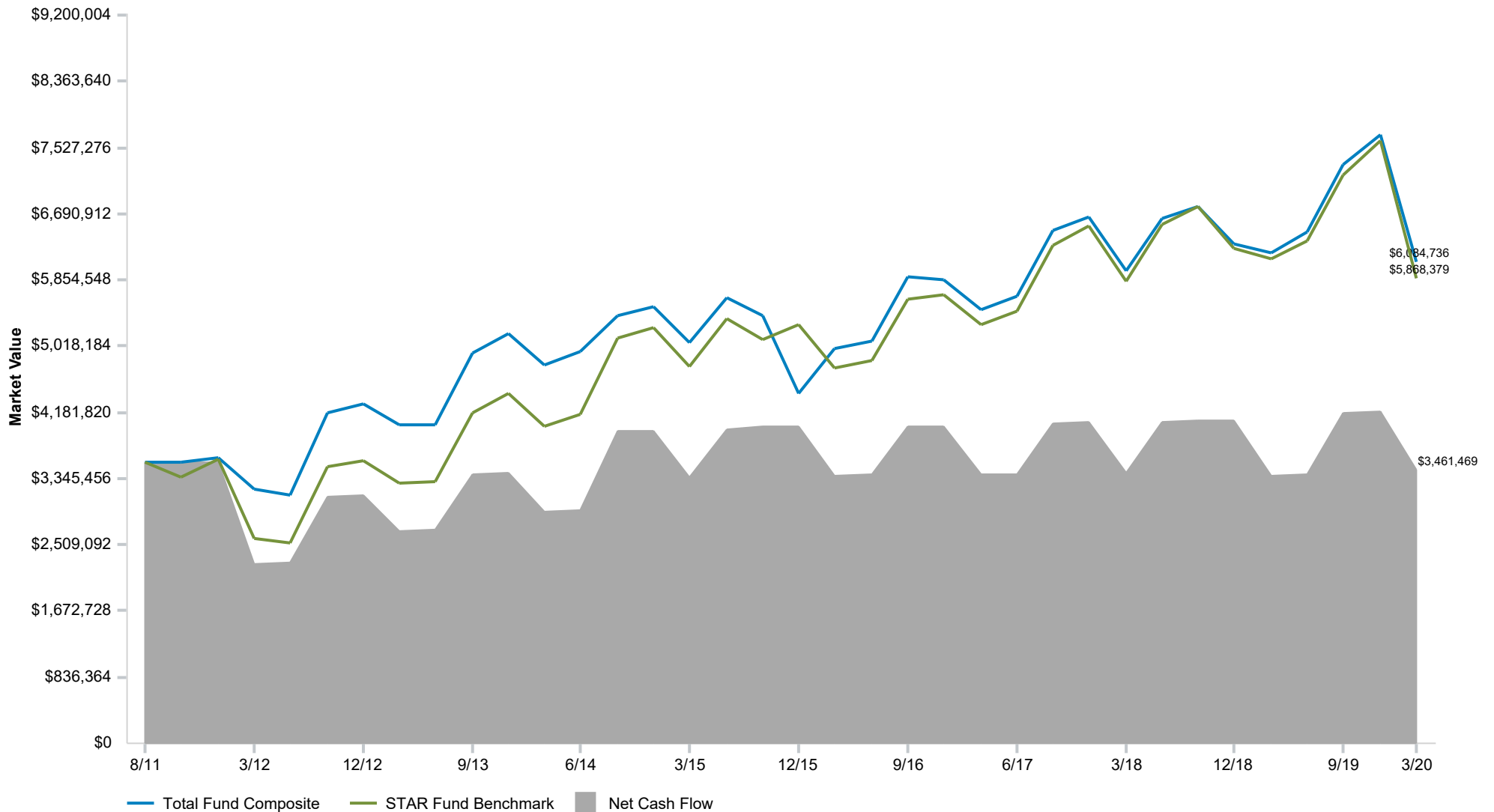


Asset Allocation Compliance

	Asset Allocation \$	Current Allocation (%)	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)	Min. Rebal. (\$000)	Target Rebal. (\$000)	Max. Rebal. (\$000)
Domestic Equity	2,383,694	39.2	32.0	40.0	48.0	-436,578	50,201	536,980
International Equity	1,211,033	19.9	15.0	20.0	25.0	-298,322	5,915	310,151
Domestic Fixed Income	2,390,785	39.3	30.0	37.0	45.0	-565,364	-139,432	347,347
Cash & Cash Equivalents	99,225	1.6	0.0	3.0	10.0	-99,225	83,317	509,249
Total Fund	6,084,736	100.0	N/A	100.0	N/A	-	-	-



Schedule of Investable Assets



Schedule of Investable Assets

Periods Ending	Beginning Market Value \$	Net Cash Flow \$	Gain/Loss \$	Ending Market Value \$	%Return
10 YR	3,555,727	-94,258	2,623,267	6,084,736	6.00



Comparative Performance Trailing Returns
Charter Township of Ypsilanti Firefighters' Healthcare Benefit Fund
As of March 31, 2020

Comparative Performance								
	MTH	YTD	1 YR	3 YR	5 YR	7 YR	Inception	Inception Date
Total Fund Composite	-9.72	-12.40	-3.43	2.86	3.22	4.74	6.06	10/01/2011
Total Fund Policy	-9.42	-12.18	-3.46	2.19	3.32	4.91	6.95	
Vanguard 500 Index (VFIAX)	-12.36	-19.61	-7.01	N/A	N/A	N/A	-4.09	08/01/2018
S&P 500 Index	-12.35	-19.60	-6.98	5.10	6.73	9.62	-3.07	
IM U.S. Large Cap Core Equity (MF) Median	-12.61	-19.85	-8.37	3.80	5.23	8.30	-4.53	
Vanguard Extended Mkt Index (VEXAX)	-21.33	-28.00	-20.51	N/A	N/A	N/A	-17.24	09/01/2018
S&P Completion Index	-21.35	-28.02	-20.59	-2.02	0.92	5.46	-17.36	
IM U.S. SMID Cap Core Equity (MF) Median	-21.54	-30.34	-23.59	-5.01	-1.33	3.16	-19.71	
Invesco S&P 500 Low Volatility ETF	-13.16	-19.05	-8.79	4.80	N/A	N/A	4.80	04/01/2017
S&P 500 Low Volatility Index TR	-13.10	-18.97	-8.53	5.16	6.94	8.78	5.16	
IM U.S. Large Cap Core Equity (SA+CF) Median	-12.77	-20.15	-8.36	4.05	5.65	9.19	4.05	
Vanguard International Growth Adm (VWILX)	-10.87	-15.52	-3.34	7.28	N/A	N/A	5.95	05/01/2017
MSCI AC World ex USA	-14.40	-23.26	-15.14	-1.48	-0.17	1.53	-2.26	
IM International Equity (MF) Median	-16.09	-23.74	-15.96	-2.51	-0.95	1.05	-3.48	
Vanguard Inter-Term Invest-Gr Adm (VFIDX)	-3.80	-0.48	5.77	3.89	N/A	N/A	3.82	05/01/2017
Blmbg. Barc. U.S. Gov/Credit: 5-10 Yr	-1.62	2.83	9.42	5.18	3.72	3.44	4.94	
IM U.S. Intermediate Duration Fixed Income (MF) Median	-1.12	0.51	4.20	2.42	1.85	1.69	2.37	
Federal Money Market Fund (VMFXX)	0.09	0.34	1.90	1.65	N/A	N/A	1.68	05/01/2017

Policy Index: effective 9/1/2018 - 15% Low Volatility, 15% S&P 500, 10% S&P Completion Index, 20% MSCI AC World Ex US, 37% BB US G/C 5-10 Yr and 3% cash.

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.



Comparative Performance Calendar Year Returns
Charter Township of Ypsilanti Firefighters' Healthcare Benefit Fund
As of March 31, 2020

Comparative Performance				
	2019	2018	2017	2016
Total Fund Composite	20.94	-5.49	13.06	5.87
Total Fund Policy	20.01	-5.64	11.59	6.80
Vanguard 500 Index (VFIAX)	31.53	N/A	N/A	N/A
S&P 500 Index	31.49	-4.38	21.83	11.96
Vanguard Extended Mkt Index (VEXAX)	28.04	N/A	N/A	N/A
S&P Completion Index	27.95	-9.57	18.11	15.95
Invesco S&P 500 Low Volatility ETF	27.85	-0.16	N/A	N/A
S&P 500 Low Volatility Index TR	28.26	0.27	17.41	10.37
Vanguard Inter-Term Invest-Gr Adm (VFIDX)	10.50	-0.44	N/A	N/A
Blmbg. Barc. U.S. Gov/Credit: 5-10 Yr	10.38	-0.07	3.81	3.10
Vanguard International Growth Adm (VWILX)	31.49	-12.58	N/A	N/A
MSCI AC World ex USA	22.13	-13.78	27.77	5.01
Vanguard STAR (VGSTX)	N/A	N/A	N/A	6.61
STAR Fund Benchmark	20.60	-4.58	15.29	7.59
Vanguard Short Term Investment Grade (VFSUX)	N/A	N/A	N/A	2.80
Blmbg. Barc. U.S. Aggregate 1-3 Yrs	4.04	1.60	0.87	1.31
Federal Money Market Fund (VMFXX)	2.13	1.80	N/A	N/A

Returns for periods greater than one year are annualized.
Returns are expressed as percentages.



Financial Reconciliation
Charter Township of Ypsilanti Firefighters' Healthcare Benefit Fund
1 Quarter Ending March 31, 2020

Financial Reconciliation								
	Market Value 01/01/2020	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 03/31/2020
Total Fund Composite	7,685,950	-	14,413	-737,343	-	42,263	-920,547	6,084,736
Vanguard 500 Index (VFIAX)	1,083,003	-	-	-	-	-	-212,390	870,614
Vanguard Extended Mkt Index (VEXAX)	703,381	-	-	-	-	923	-197,867	506,438
Invesco S&P 500 Low Volatility ETF	1,243,555	-	-	-	-	7,468	-244,381	1,006,643
Vanguard International Growth Adm (VWILX)	1,433,464	-	-	-	-	-	-222,432	1,211,033
Vanguard Inter-Term Invest-Gr Adm (VFIDX)	2,402,397	-	-	-	-	31,866	-43,478	2,390,785
Federal Money Market Fund (VMFXX)	820,149	-	14,413	-737,343	-	2,006	-	99,225

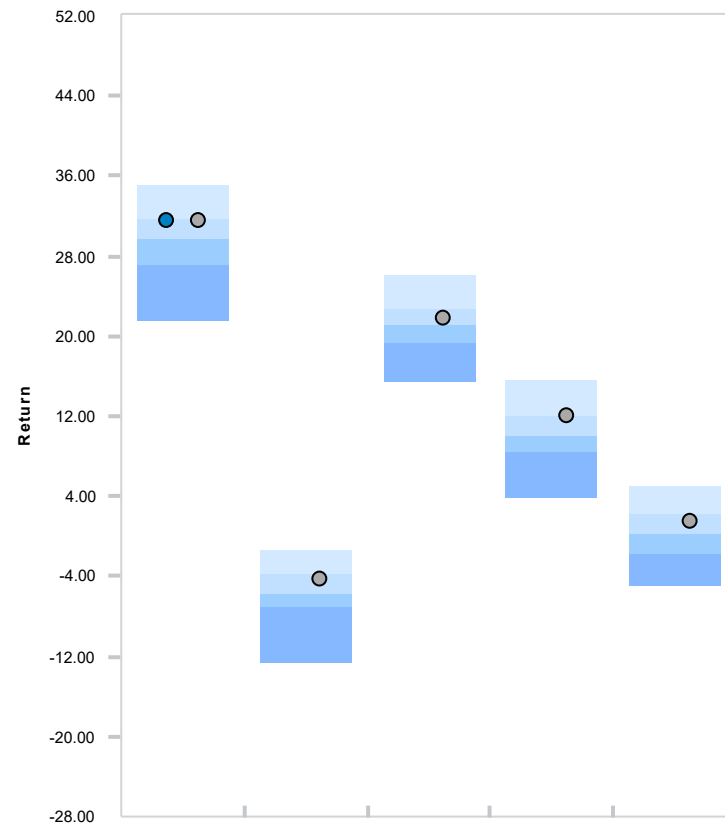
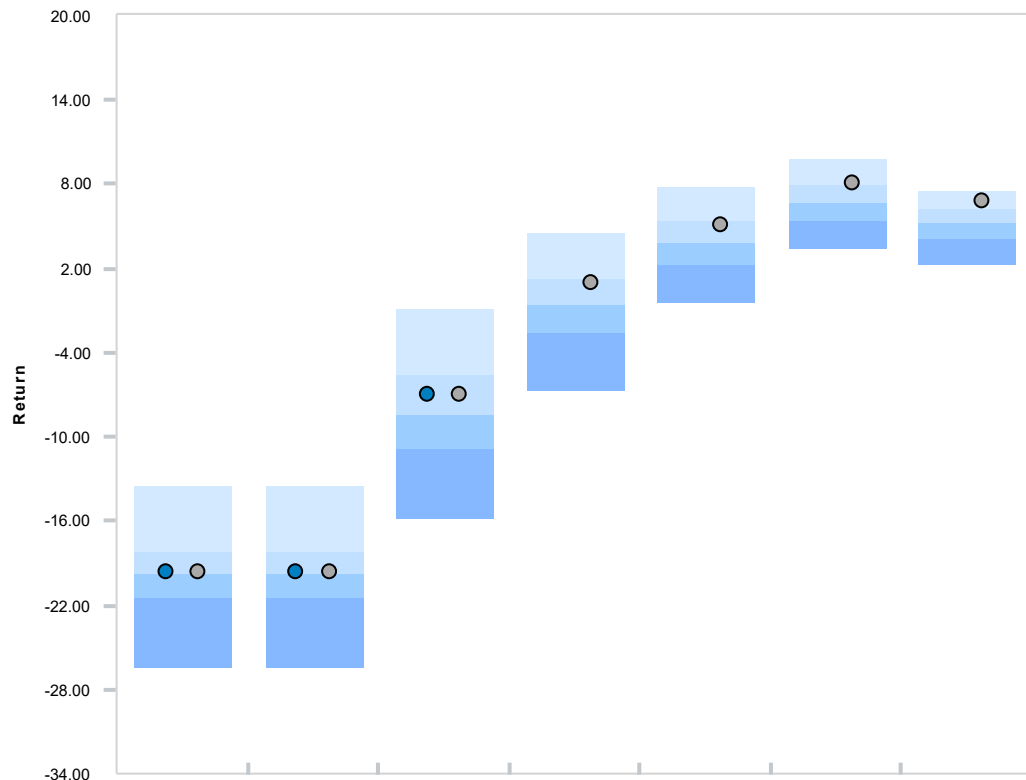


Financial Reconciliation
Charter Township of Ypsilanti Firefighters' Healthcare Benefit Fund
Year To Date Ending March 31, 2020

Financial Reconciliation								
	Market Value 01/01/2020	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 03/31/2020
Total Fund Composite	7,685,950	-	14,413	-737,343	-	42,263	-920,547	6,084,736
Vanguard 500 Index (VFIAX)	1,083,003	-	-	-	-	-	-212,390	870,614
Vanguard Extended Mkt Index (VEXAX)	703,381	-	-	-	-	923	-197,867	506,438
Invesco S&P 500 Low Volatility ETF	1,243,555	-	-	-	-	7,468	-244,381	1,006,643
Vanguard International Growth Adm (VWILX)	1,433,464	-	-	-	-	-	-222,432	1,211,033
Vanguard Inter-Term Invest-Gr Adm (VFIDX)	2,402,397	-	-	-	-	31,866	-43,478	2,390,785
Federal Money Market Fund (VMFXX)	820,149	-	14,413	-737,343	-	2,006	-	99,225



Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-19.61 (45)	-19.61 (45)	-7.01 (36)	N/A	N/A	N/A	N/A
● S&P 500 Index	-19.60 (44)	-19.60 (44)	-6.98 (36)	0.92 (28)	5.10 (29)	8.00 (22)	6.73 (14)
Median	-19.85	-19.85	-8.37	-0.65	3.80	6.67	5.23

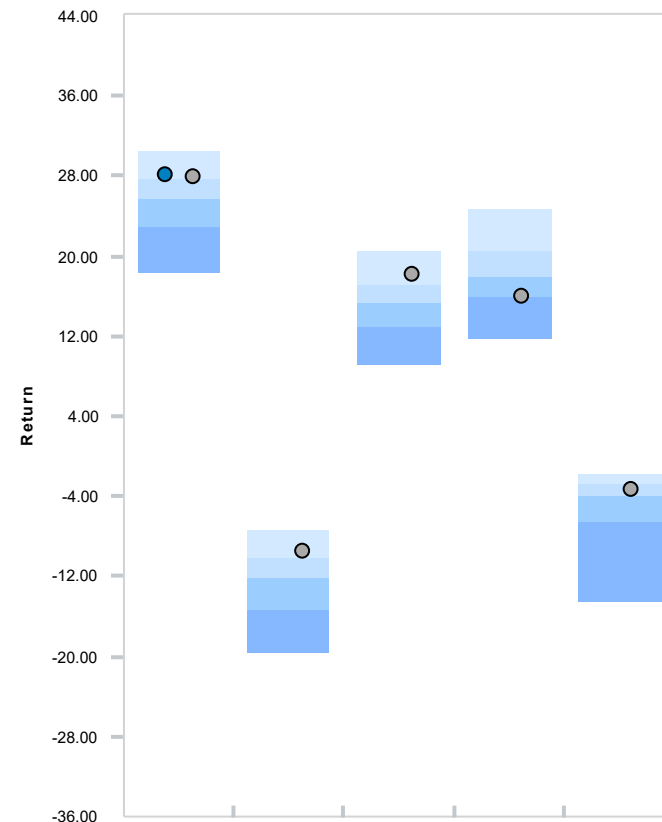
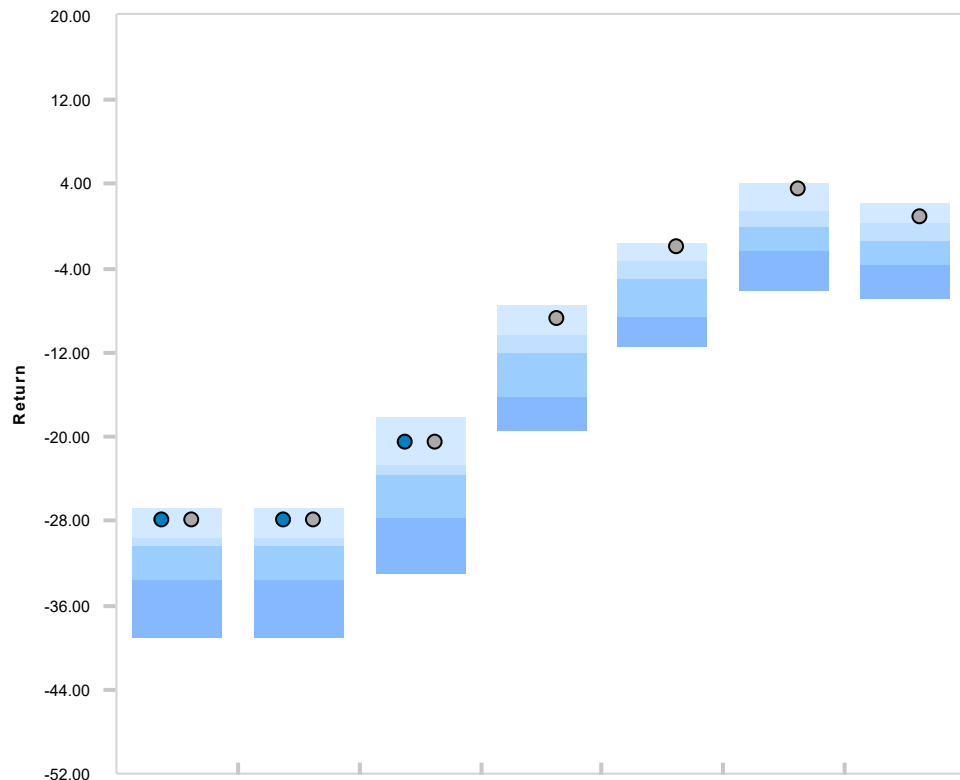
	2019	2018	2017	2016	2015
● Investment	31.53 (29)	N/A	N/A	N/A	N/A
● S&P 500 Index	31.49 (30)	-4.38 (30)	21.83 (38)	11.96 (26)	1.38 (33)
Median	29.67	-5.61	21.17	10.07	0.25

Comparative Performance

	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018
Investment	9.06 (39)	1.69 (40)	4.30 (44)	13.71 (30)	-13.53 (46)	N/A
S&P 500 Index	9.07 (38)	1.70 (39)	4.30 (44)	13.65 (31)	-13.52 (46)	7.71 (32)
IM U.S. Large Cap Core Equity (MF) Median	8.72	1.46	4.15	13.08	-13.74	7.28



Peer Group Analysis - IM U.S. SMID Cap Core Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-28.00 (11)	-28.00 (11)	-20.51 (13)	N/A	N/A	N/A	N/A
● S&P Completion Index	-28.02 (12)	-28.02 (12)	-20.59 (15)	-8.79 (15)	-2.02 (13)	3.58 (11)	0.92 (14)
Median	-30.34	-30.34	-23.59	-12.03	-5.01	-0.08	-1.33

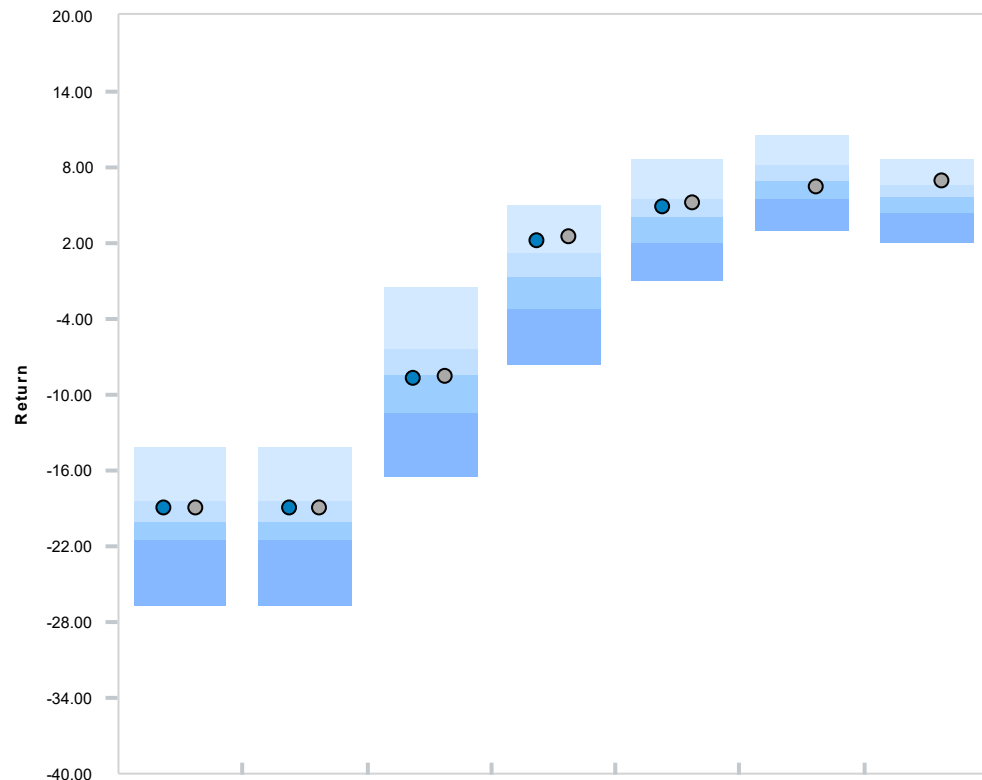
	2019	2018	2017	2016	2015
● Investment	28.04 (20)	N/A	N/A	N/A	N/A
● S&P Completion Index	27.95 (22)	-9.57 (23)	18.11 (17)	15.95 (75)	-3.35 (37)
Median	25.74	-12.15	15.41	17.94	-4.00

Comparative Performance

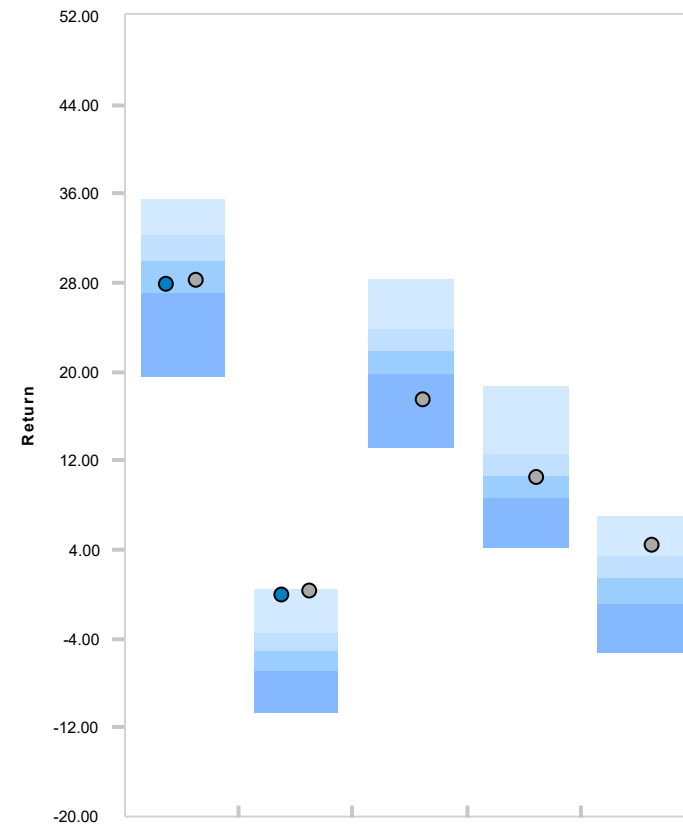
	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018
Investment	8.90 (12)	-1.61 (76)	3.04 (34)	15.97 (19)	-18.18 (59)	N/A
S&P Completion Index	8.86 (14)	-1.64 (77)	3.02 (37)	15.99 (18)	-18.28 (65)	4.33 (31)
IM U.S. SMID Cap Core Equity (MF) Median	7.07	-0.50	2.88	14.31	-18.05	3.71



Peer Group Analysis - IM U.S. Large Cap Core Equity (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-19.05 (34)	-19.05 (34)	-8.79 (57)	2.23 (17)	4.80 (35)	N/A	N/A
● S&P 500 L V Ind TR	-18.97 (32)	-18.97 (32)	-8.53 (53)	2.53 (15)	5.16 (28)	6.44 (59)	6.94 (19)
Median	-20.15	-20.15	-8.36	-0.68	4.05	6.96	5.65



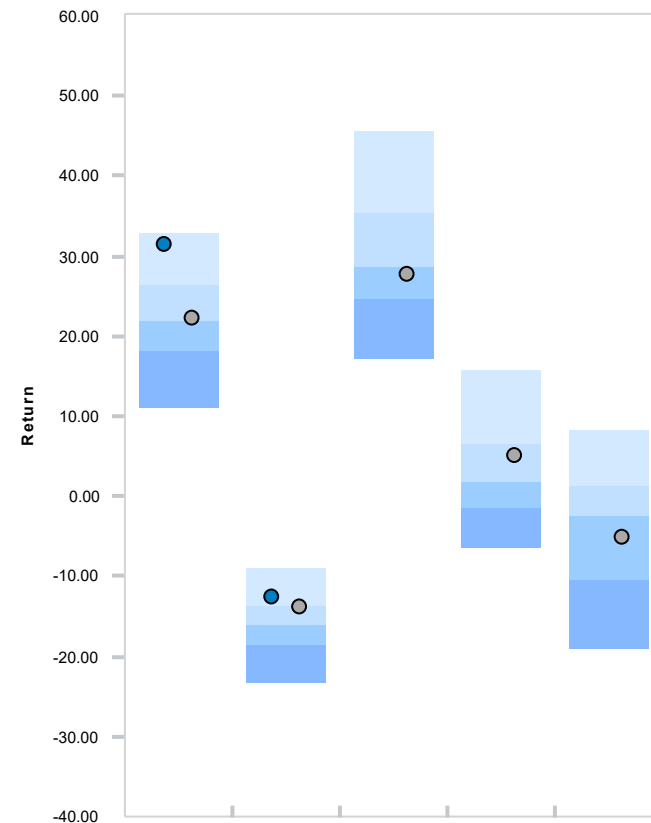
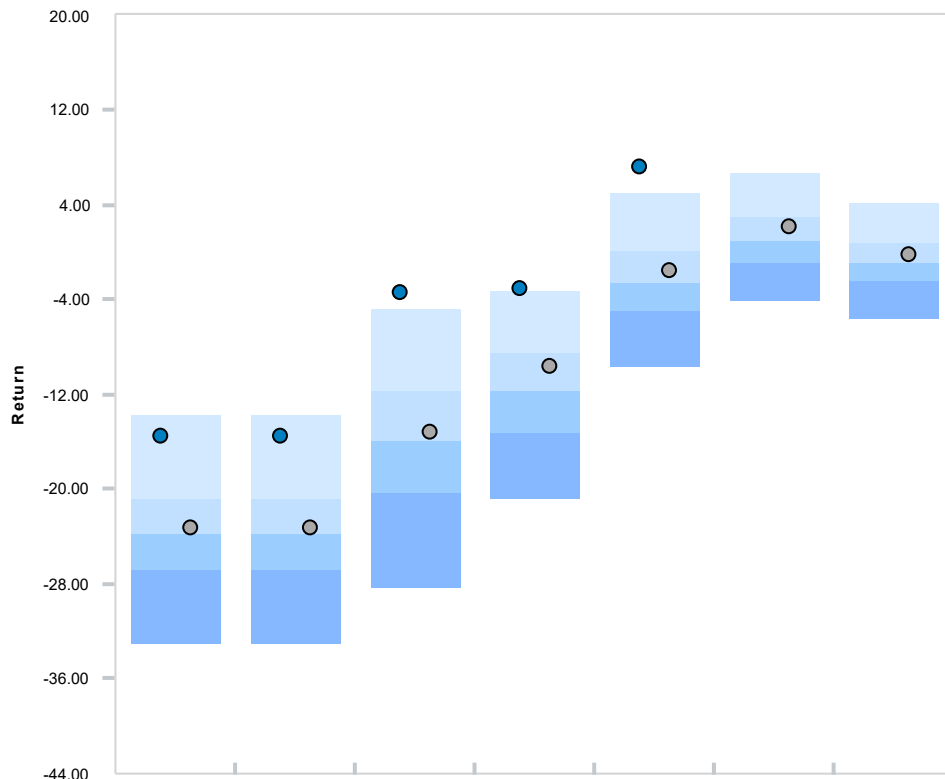
	2019	2018	2017	2016	2015
● Investment	27.85 (70)	-0.16 (6)	N/A	N/A	N/A
● S&P 500 L V Ind TR	28.26 (66)	0.27 (6)	17.41 (86)	10.37 (53)	4.34 (17)
Median	29.96	-5.16	21.84	10.54	1.42

Comparative Performance

	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018
Investment	1.32 (100)	5.80 (1)	5.10 (23)	13.47 (43)	-5.27 (1)	5.04 (88)
S&P 500 L V Ind TR	1.42 (100)	5.80 (1)	5.20 (20)	13.62 (40)	-5.22 (1)	5.04 (88)
IM U.S. Large Cap Core Equity (SA+CF) Median	8.22	1.54	4.26	13.19	-13.77	7.15



Peer Group Analysis - IM International Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-15.52 (7)	-15.52 (7)	-3.34 (4)	-3.10 (5)	7.28 (3)	N/A	N/A
● MSCI AC World ex USA	-23.26 (46)	-23.26 (46)	-15.14 (45)	-9.62 (33)	-1.48 (38)	2.11 (34)	-0.17 (37)
Median	-23.74	-23.74	-15.96	-11.68	-2.51	0.99	-0.95

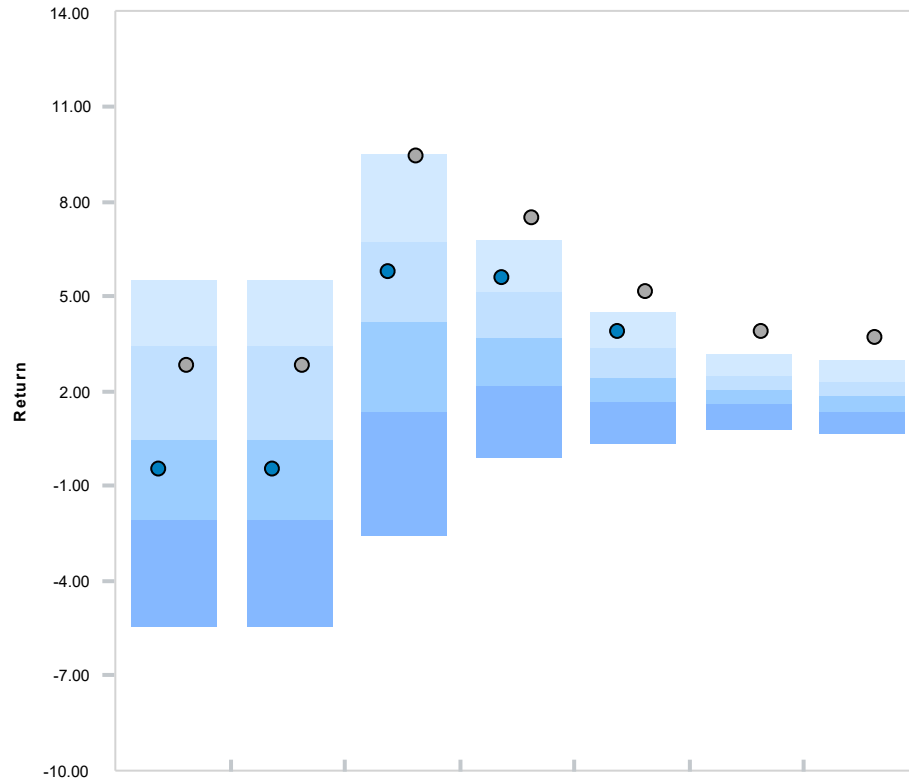
	2019	2018	2017	2016	2015
● Investment	31.49 (8)	-12.58 (20)	N/A	N/A	N/A
● MSCI AC World ex USA	22.13 (49)	-13.78 (27)	27.77 (56)	5.01 (32)	-5.25 (61)
Median	21.99	-16.01	28.78	1.79	-2.33

Comparative Performance

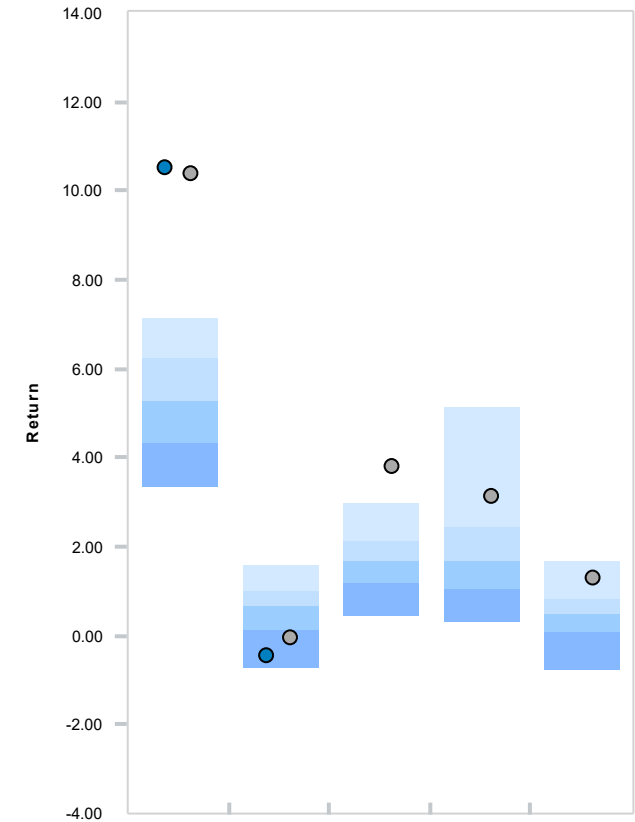
	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018
Investment	14.29 (3)	-3.02 (72)	3.23 (39)	14.92 (9)	-14.75 (77)	-1.52 (68)
MSCI AC World ex USA	8.99 (61)	-1.70 (44)	3.22 (39)	10.44 (52)	-11.41 (43)	0.80 (29)
IM International Equity (MF) Median	9.60	-1.90	2.58	10.54	-12.22	-0.27



Peer Group Analysis - IM U.S. Int Duration FI (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Investment	-0.48 (62)	-0.48 (62)	5.77 (36)	5.60 (20)	3.89 (13)	N/A	N/A
● BB U.S. Gov/Credit: 5-10 Yr	2.83 (38)	2.83 (38)	9.42 (7)	7.51 (3)	5.18 (2)	3.92 (1)	3.72 (1)
Median	0.51	0.51	4.20	3.70	2.42	2.06	1.85



	2019	2018	2017	2016	2015
● Investment	10.50 (1)	-0.44 (90)	N/A	N/A	N/A
● BB U.S. Gov/Credit: 5-10 Yr	10.38 (1)	-0.07 (85)	3.81 (2)	3.10 (13)	1.28 (10)
Median	5.29	0.64	1.68	1.69	0.48

Comparative Performance

	1 Qtr Ending Dec-2019	1 Qtr Ending Sep-2019	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018
Investment	0.64 (25)	1.89 (7)	3.64 (1)	3.97 (1)	1.12 (50)	0.65 (14)
BB U.S. Gov/Credit: 5-10 Yr	0.13 (77)	2.28 (1)	3.91 (1)	3.72 (1)	2.04 (8)	0.13 (57)
IM U.S. Int Duration FI (MF)	0.40	0.94	1.89	1.95	1.11	0.20



**Ypsilanti Firefighters' Healthcare
Fee Analysis
As of March 31, 2020**

	Estimated Annual Fee (%)	Market Value (\$)	Estimated Annual Fee (\$)	Fee Schedule
Invesco S&P 500 Low Volatility ETF	0.25	1,006,643	2,517	0.25 % of Assets
Vanguard 500 Index (VFIAX)	0.04	870,614	348	0.04 % of Assets
Vanguard Extended Mkt Index (VEXAX)	0.10	506,438	506	0.10 % of Assets
Vanguard International Growth Adm (VWILX)	0.33	1,211,033	3,996	0.33 % of Assets
Vanguard Inter-Term Invest-Gr Adm (VFIDX)	0.10	2,390,785	2,391	0.10 % of Assets
Federal Money Market Fund (VMFXX)		99,225	-	
Total Fund Composite	0.16	6,084,736	9,758	



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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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.

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