MONTHLY PERFORMANCE REPORT

Howard County Retirement Plans

As of April 30, 2019

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CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Q1	Apr	YTD
US Large Cap	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	13.6%	4.0%	18.2%
US Small/Mid Cap	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	15.8%	3.5%	19.9%
Int'l Developed Equity	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	10.0%	2.8%	13.1%
Emerging Market Equity	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	9.9%	2.1%	12.2%
US Aggregate	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	2.9%	0.0%	3.0%
US High Yield	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	7.3%	1.4%	8.8%
US Long Treasury	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	4.7%	-1.8%	2.8%
EM Local Credit	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	2.9%	-0.2%	2.7%
Global Credit	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	7.4%	-1.2%	2.2%	-0.3%	1.9%
Commodities	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	6.3%	-0.4%	5.9%

Source: Bloomberg, Barclays, S&P, Russell, MSCI, JP Morgan, Credit Suisse

S&P 500 = US Large Cap
Russell 2500 = US Small/Mid Cap
MSCI EAFE = International Developed Equity
MSCI EM = Emerging Market Equity
Bloomberg Barclays Aggregate = US Aggregate
Bloomberg Barclays High Yield = US HY
Bloomberg Barclays Long Treasury = US Long Treasury
GBI-EM Global Diversified = EM Local Credit
Barclays Global Aggregate = Global Credit
Bloomberg Commodity = Commodities

Howard County Retirement Plans

TOTAL FUND PERFORMANCE SUMMARY (GROSS)

Ending April 30, 2019

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Composite	**1,071,506,484**	**100.0**	**100.0**	**2.0**	**8.7**	**5.6**	**5.7**	**9.3**	**7.0**	**9.9**	**7.3**	**Apr-97**
Policy Index				*1.4*	*7.9*	*5.2*	*5.0*	*7.9*	*6.3*	*8.9*	*7.3*	*Apr-97*
Allocation Index				*1.5*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*Apr-97*
Total US Equity Composite	**268,826,380**	**25.1**	**20.0**	**4.6**	**19.5**	**7.1**	**10.8**	**16.1**	**11.8**	**15.9**	**8.6**	**Jul-97**
Russell 3000				*4.0*	*18.6*	*8.9*	*12.7*	*14.7*	*11.2*	*15.3*	*7.9*	*Jul-97*
US Equity Allocation Index				*3.9*	*18.8*	*7.6*	*11.8*	*14.7*	*11.0*	*15.5*	*--*	*Jul-97*
Total International Equity	**195,438,966**	**18.2**	**20.0**	**3.9**	**15.0**	**4.2**	**-0.7**	**9.7**	**3.9**	**8.6**	**4.8**	**Jul-97**
MSCI ACWI ex USA				*2.6*	*13.2*	*1.0*	*-3.2*	*8.1*	*2.8*	*7.7*	*--*	*Jul-97*
Total Fixed Income Composite	**302,126,134**	**28.2**	**30.0**	**0.3**	**3.6**	**4.7**	**3.8**	**3.3**	**3.6**	**6.0**	**5.4**	**Jul-97**
Fixed Income Policy Index				*0.0*	*3.0*	*4.7*	*5.3*	*1.9*	*2.6*	*3.7*	*5.1*	*Jul-97*
Total Real Assets Composite	**37,990,226**	**3.5**	**7.5**	**1.6**	**2.3**	**6.5**	**10.9**	**12.0**	**10.7**	**4.7**	**7.7**	**Jul-03**
NCREIF Property Index 1 Qtr. Lag				*0.0*	*1.4*	*4.9*	*6.7*	*7.2*	*9.3*	*7.5*	*8.8*	*Jul-03*
Cash Composite	**7,623,319**	**0.7**		**0.2**	**0.9**	**2.0**	**2.2**	**1.0**	**0.6**	**0.4**	**1.4**	**Dec-03**
91 Day T-Bills				*0.2*	*0.8*	*1.9*	*2.2*	*1.3*	*0.8*	*0.4*	*1.3*	*Dec-03*
Hedge Fund Composite	**118,629,056**	**11.1**	**12.5**	**0.0**	**2.7**	**1.1**	**1.8**	**4.3**	**4.2**	**--**	**4.6**	**Jan-11**
HFRI FOF: Conservative Index				*0.9*	*4.1*	*1.5*	*2.2*	*3.7*	*2.3*	*3.4*	*2.5*	*Jan-11*
Private Equity Composite	**140,872,404**	**13.1**	**10.0**	**0.2**	**1.2**	**11.5**	**12.9**	**15.5**	**15.7**	**14.8**	**12.6**	**Jul-08**
Cambridge Associates Global All PE				*0.0*	*0.0*	*2.2*	*6.7*	*12.4*	*10.2*	*13.5*	*9.0*	*Jul-08*

Fiscal year end 6/30.

All history prior to 3/1/2019 was provided by AndCo.

Hedge Fund Composite market values have been carried over for 04/30/2019.

Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

Ending April 30, 2019

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Composite	**1,071,506,484**	**100.0**	**100.0**	**2.0**	**8.7**	**5.6**	**5.7**	**9.3**	**7.0**	**9.9**	**7.3**	**Apr-97**
Policy Index				*1.4*	*7.9*	*5.2*	*5.0*	*7.9*	*6.3*	*8.9*	*7.3*	*Apr-97*
Allocation Index				*1.5*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*Apr-97*
Total US Equity Composite	**268,826,380**	**25.1**	**20.0**	**4.6**	**19.5**	**7.1**	**10.8**	**16.1**	**11.8**	**15.9**	**8.6**	**Jul-97**
Russell 3000				*4.0*	*18.6*	*8.9*	*12.7*	*14.7*	*11.2*	*15.3*	*7.9*	*Jul-97*
US Equity Allocation Index				*3.9*	*18.8*	*7.6*	*11.8*	*14.7*	*11.0*	*15.5*	*--*	*Jul-97*
Large Cap Composite	**207,849,994**	**19.4**	**15.0**	**4.5**	**18.6**	**8.1**	**10.7**	**15.2**	**11.2**	**15.3**	**8.6**	**Apr-01**
Russell 1000				*4.0*	*18.6*	*9.8*	*13.3*	*14.8*	*11.4*	*15.4*	*7.7*	*Apr-01*
Invesco IQS – US Enhanced 1% Risk SMA	68,935,638	6.4		4.1	16.8	8.2	11.0	14.3	10.7	15.1	7.8	Apr-01
S&P 500				*4.0*	*18.2*	*10.1*	*13.5*	*14.9*	*11.6*	*15.3*	*7.4*	*Apr-01*
LSV Asset Management SMA	63,654,085	5.9		4.0	15.7	4.6	4.0	12.3	9.0	15.2	9.9	May-00
Russell 1000 Value				*3.5*	*15.9*	*8.2*	*9.1*	*11.0*	*8.3*	*13.8*	*7.0*	*May-00*
Westfield Capital Management SMA	75,260,272	7.0		5.2	22.8	11.2	16.6	18.8	13.8	--	16.3	Jul-10
Russell 1000 Growth				*4.5*	*21.3*	*11.4*	*17.4*	*18.6*	*14.5*	*17.0*	*16.9*	*Jul-10*
Small/Mid Cap Composite	**60,976,386**	**5.7**	**5.0**	**5.1**	**22.7**	**3.9**	**11.4**	**18.9**	**13.8**	**17.1**	**12.4**	**Apr-93**
Russell 2500				*3.5*	*19.9*	*2.3*	*7.9*	*13.3*	*9.0*	*15.0*	*10.4*	*Apr-93*
William Blair SMA	19,807,961	1.8		4.4	22.5	8.8	14.9	19.7	15.0	18.2	12.4	Jun-06
Russell 2500 Growth				*3.5*	*23.2*	*5.5*	*12.0*	*16.6*	*11.3*	*16.3*	*9.8*	*Jun-06*
ICM Small Company - ICSCX	23,188,860	2.2		4.6	19.7	-3.6	4.2	14.0	9.9	15.2	12.0	Apr-93
Russell 2000 Value				*3.8*	*16.2*	*-4.0*	*2.2*	*11.5*	*6.9*	*12.9*	*9.9*	*Apr-93*
Brown Capital Small Company Strategy SMA	17,979,565	1.7		6.5	27.4	9.7	17.9	25.6	18.1	--	19.5	Aug-11
Russell 2000 Growth				*3.0*	*20.7*	*-0.2*	*6.9*	*15.6*	*10.2*	*15.2*	*11.8*	*Aug-11*

Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
											Ending April 30, 2019	
Total International Equity	**195,438,966**	**18.2**	**20.0**	**3.9**	**15.0**	**4.2**	**-0.7**	**9.7**	**3.9**	**8.6**	**4.8**	**Jul-97**
MSCI ACWI ex USA				*2.6*	*13.2*	*1.0*	*-3.2*	*8.1*	*2.8*	*7.7*	*--*	*Jul-97*
International Developed Markets Composite	**126,552,473**	**11.8**	**13.0**	**5.0**	**16.6**	**2.4**	**0.3**	**7.9**	**3.3**	**8.8**	**3.2**	**Mar-08**
MSCI EAFE				*2.8*	*13.1*	*0.2*	*-3.2*	*7.2*	*2.6*	*8.0*	*2.3*	*Mar-08*
Mondrian International Equity Fund, L.P.	61,665,405	5.8		3.1	12.5	3.7	-1.7	7.6	2.8	8.2	2.0	Dec-07
MSCI EAFE				*2.8*	*13.1*	*0.2*	*-3.2*	*7.2*	*2.6*	*8.0*	*1.3*	*Dec-07*
Baillie Gifford EAFE Pure K - BGPKX	64,887,067	6.1		6.7	20.6	1.6	2.7	--	--	--	2.7	May-18
MSCI EAFE				*2.8*	*13.1*	*0.2*	*-3.2*	*7.2*	*2.6*	*8.0*	*-3.2*	*May-18*
International Emerging Markets Composite	**68,886,493**	**6.4**	**7.0**	**1.9**	**12.1**	**7.8**	**-2.4**	**13.3**	**5.0**	**8.4**	**6.2**	**Feb-06**
MSCI Emerging Markets				*2.1*	*12.2*	*2.7*	*-5.0*	*11.3*	*4.0*	*7.5*	*4.9*	*Feb-06*
DFA Emerging Markets Value Portfolio Institutional - DFEVX	28,008,033	2.6		0.8	8.2	1.8	-7.8	11.1	3.8	7.8	5.9	Feb-06
MSCI Emerging Markets				*2.1*	*12.2*	*2.7*	*-5.0*	*11.3*	*4.0*	*7.5*	*4.9*	*Feb-06*
GQG Partners Emerging Markets Equity Fund	40,878,460	3.8		2.7	15.0	--	--	--	--	--	14.7	Dec-18
MSCI Emerging Markets				*2.1*	*12.2*	*2.7*	*-5.0*	*11.3*	*4.0*	*7.5*	*9.3*	*Dec-18*
Total Fixed Income Composite	**302,126,134**	**28.2**	**30.0**	**0.3**	**3.6**	**4.7**	**3.8**	**3.3**	**3.6**	**6.0**	**5.4**	**Jul-97**
BBgBarc US Aggregate TR				*0.0*	*3.0*	*4.7*	*5.3*	*1.9*	*2.6*	*3.7*	*5.0*	*Jul-97*
Core Fixed Income Composite	**258,973,873**	**24.2**	**25.0**	**0.4**	**--**	**--**	**--**	**--**	**--**	**--**	**2.0**	**Mar-19**
BBgBarc US Aggregate TR				*0.0*	*3.0*	*4.7*	*5.3*	*1.9*	*2.6*	*3.7*	*1.9*	*Mar-19*
Dodge & Cox SMA	123,915,580	11.6		0.5	4.2	5.5	5.8	3.7	3.5	--	4.4	May-10
BBgBarc US Aggregate TR				*0.0*	*3.0*	*4.7*	*5.3*	*1.9*	*2.6*	*3.7*	*3.2*	*May-10*
PIMCO Total Return	113,072,884	10.6		0.2	3.2	4.7	5.2	2.9	2.9	--	3.8	May-10
BBgBarc US Aggregate TR				*0.0*	*3.0*	*4.7*	*5.3*	*1.9*	*2.6*	*3.7*	*3.2*	*May-10*
State Street Global Advisors TIPS	21,985,409	2.1		0.3	3.5	2.3	3.1	1.7	1.7	--	3.1	Nov-09
BBgBarc US TIPS TR				*0.3*	*3.5*	*2.3*	*3.1*	*1.7*	*1.7*	*3.6*	*3.1*	*Nov-09*
Emerging Markets Debt Composite	**43,152,262**	**4.0**	**5.0**	**0.1**	**--**	**--**	**--**	**--**	**--**	**--**	**-1.5**	**Mar-19**
JP Morgan GBI EM Global Diversified TR USD				*-0.2*	*2.7*	*3.0*	*-4.9*	*2.3*	*-1.0*	*3.5*	*-1.5*	*Mar-19*
Colchester Local Markets Debt Fund	43,152,262	4.0		0.1	2.8	3.6	-4.1	4.3	--	--	8.1	Oct-15
JP Morgan GBI EM Global Diversified TR USD				*-0.2*	*2.7*	*3.0*	*-4.9*	*2.3*	*-1.0*	*3.5*	*5.7*	*Oct-15*

TOTAL FUND PERFORMANCE DETAIL (GROSS)

											Ending April 30, 2019	
	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Assets Composite	**37,990,226**	**3.5**	**7.5**	**1.6**	**2.3**	**6.5**	**10.9**	**12.0**	**10.7**	**4.7**	**7.7**	**Jul-03**
NCREIF Property Index 1 Qtr. Lag				*0.0*	*1.4*	*4.9*	*6.7*	*7.2*	*9.3*	*7.5*	*8.8*	*Jul-03*
Real Estate Composite	**25,547,161**	**2.4**		**0.0**	**--**	**--**	**--**	**--**	**--**	**--**	**0.3**	**Mar-19**
NCREIF Property Index 1 Qtr. Lag				*0.0*	*1.4*	*4.9*	*6.7*	*7.2*	*9.3*	*7.5*	*1.4*	*Mar-19*
Realty Associates Fund VIII L.P.	25,697	0.0		0.0	-8.5	0.8	0.8	5.0	9.0	2.9	1.8	Jul-07
Realty Associates Fund IX L.P.	930	0.0		0.0	-5.9	-9.6	-9.6	-2.5	4.2	--	6.1	Apr-10
Partners Group Global RE 2011	5,455,334	0.5		0.1	-5.0	-11.4	-8.5	5.8	4.8	--	5.0	Mar-12
Partners Group Global RE 2014	16,976,211	1.6		0.0	2.6	5.8	11.3	13.0	--	--	9.9	Dec-14
Partners Group Global RE 2017	3,088,989	0.3		0.0	4.3	--	--	--	--	--	4.3	Dec-18
NCREIF Property Index 1 Qtr. Lag				*0.0*	*1.4*	*4.9*	*6.7*	*7.2*	*9.3*	*7.5*	*3.1*	*Dec-18*
Real Assets Composite	**12,443,064**	**1.2**		**5.4**	**--**	**--**	**--**	**--**	**--**	**--**	**5.3**	**Mar-19**
Cambridge Associates Global Natural Resources (1 Qtr Lag)				*0.0*	*-6.9*	*-1.5*	*-0.7*	*7.5*	*-0.4*	*5.1*	*-6.9*	*Mar-19*
Commonfund Natural Resources X	4,731,035	0.4		0.0	0.0	8.5	13.5	20.7	--	--	20.0	Apr-16
Commonfund Natural Resources XI	150,000	0.0		0.0	0.0	--	--	--	--	--	0.0	Oct-18
Aether Real Assets IV	5,360,468	0.5		2.7	2.4	13.7	17.2	--	--	--	5.9	Jun-16
Aether Real Assets V	2,201,561	0.2		33.2	33.2	--	--	--	--	--	138.7	Oct-18
Cambridge Associates Global Natural Resources (1 Qtr Lag)				*0.0*	*-6.9*	*-1.5*	*-0.7*	*7.5*	*-0.4*	*5.1*	*-4.9*	*Oct-18*
Cash Composite	**7,623,319**	**0.7**	**0.0**	**0.2**	**0.9**	**2.0**	**2.2**	**1.0**	**0.6**	**0.4**	**1.4**	**Dec-03**
91 Day T-Bills				*0.2*	*0.8*	*1.9*	*2.2*	*1.3*	*0.8*	*0.4*	*1.3*	*Dec-03*
Hedge Fund Composite	**118,629,056**	**11.1**	**12.5**	**0.0**	**2.7**	**1.1**	**1.8**	**4.3**	**4.2**	**--**	**4.6**	**Jan-11**
HFRI FOF: Conservative Index				*0.9*	*4.1*	*1.5*	*2.2*	*3.7*	*2.3*	*3.4*	*2.5*	*Jan-11*
Magnitude International Class A Eligible	58,162,024	5.4		0.0	2.4	-0.2	0.6	3.3	3.9	--	4.5	Jan-11
HFRI FOF: Conservative Index				*0.9*	*4.1*	*1.5*	*2.2*	*3.7*	*2.3*	*3.4*	*2.5*	*Jan-11*
Blackstone Partners Offshore Fund LTD	60,467,031	5.6		0.0	3.1	2.4	3.0	5.3	4.4	--	4.7	Mar-11
HFRI FOF: Conservative Index				*0.9*	*4.1*	*1.5*	*2.2*	*3.7*	*2.3*	*3.4*	*2.4*	*Mar-11*
Private Equity Composite	**140,872,404**	**13.1**	**10.0**	**0.2**	**1.2**	**11.5**	**12.9**	**15.5**	**15.7**	**14.8**	**12.6**	**Jul-08**
Cambridge Associates Global All PE				*0.0*	*0.0*	*2.2*	*6.7*	*12.4*	*10.2*	*13.5*	*9.0*	*Jul-08*

Hedge Fund Composite market values have been carried over for 04/30/2019.

TOTAL FUND PERFORMANCE DETAIL FOOTNOTES

Fiscal year ends 6/30.

Policy index consists of: 15% S&P 500 / 5% Russell 2500 / 13% MSCI EAFE / 7% MSCI Emerging Markets / 25% BBgBarc US Aggregate TR / 5% JP Morgan GBI EM Global Diversified TR USD / 7.5% NCREIF Property Index 1 Qtr. Lag / 12.5% HFRI FOF: Conservative Index / 10% Private Equity Composite.

Allocation index consists of: Weighted index of underlying managers to their respective benchmark.

Fixed Income Policyindex consists of: 100% BBgBarc US Aggregate TR.

Core Fixed Income Composite, Emerging Markets Debt, Real Estate Composite, and Real Assets Composite performance is calculated by NEPC as of 3/31/2019.

All history prior to 3/1/2019 was provided by AndCo.

Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
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- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.