

**HOWARD COUNTY POLICE AND FIRE
EMPLOYEES' RETIREMENT PLAN**

**FINANCIAL STATEMENTS
WITH SUPPLEMENTARY INFORMATION**

YEARS ENDED JUNE 30, 2017 AND 2016

**HOWARD COUNTY POLICE AND FIRE
EMPLOYEES' RETIREMENT PLAN
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INDEPENDENT AUDITORS' REPORT

To the Retirement Plan Committee
Howard County Police and Fire Employees' Retirement Plan
Howard County, Maryland

Report on the Financial Statements

We have audited the accompanying financial statements of Howard County Police and Fire Employees' Retirement Plan (the Plan) as of and for the year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the Plan's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the of the Plan as of June 30, 2017, and the changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis (MD&A) on pages 3-5 and Schedule of Changes in the County's Net pension Liability and Related Ratios, the Schedule of County Contributions, and the schedule of Investment Returns on pages 19 through 21 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

The financial statements of the Plan as of and for the year ended June 30, 2016, were audited by other auditors whose report dated November 23, 2016, expressed an unmodified opinion on those statements.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated November 22, 2017, on our consideration of the Plan's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the result of that testing, and not to provide an opinion on the effectiveness of the Plan's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Plan's internal control over financial reporting and compliance.



CliftonLarsonAllen LLP

Baltimore, Maryland
November 22, 2017

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
MANAGEMENT'S DISCUSSION AND ANALYSIS
YEARS ENDED JUNE 30, 2017 AND 2016**

Introduction

The Howard County Police and Fire Employees' Plan (the "Plan") is a single-employer defined benefit public employee retirement plan administered by Howard County, Maryland, which provides retirement benefits as well as death and disability benefits and cost-of-living adjustments.

Responsibilities for administration and operation of the Police and Fire Plan vest in a Retirement Committee with seven members ("Committee"). The Committee has authority to establish and amend the respective benefit and contribution provisions.

Financial Highlights

The financial statements of the Police and Fire Plan were prepared using the accrual basis of accounting. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan. Employee and employer contributions are recognized as revenues in the period in which employee services are performed and expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is made. Investments are reported at fair value.

In 2017, the net position increased \$67.3 million or 14.9% to \$516.3 million driven primarily by investment gains of \$46.3 million. Contributions of \$32.1 million outpaced benefit payments of \$20.4 million by \$11.7 million. The number of benefit recipients increased to 374, a 5.9% increase over the prior year.

Overview of the Basic Financial Statements

In this financial report, the basic financial statements consist of the Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position with accompanying notes as of and for the year ended June 30, 2017 with comparative information as of and for the year ended June 30, 2016. The financial position is comprised of assets, which primarily consist of investments less liabilities, including accounts payable and investment commitments payable.

Investments consist of US equities (large cap and non-large cap), international equities (international developed markets and international emerging markets), fixed income, real assets and alternatives (private equities and hedge funds). The Plan is a participant in a combined pension investment pool and it does not own an undivided interest in specific assets of the Pool. The investments presented by category are the Plan's proportionate share of the investments by category of the Pool that are reported at fair value.

The Statement of Changes in Fiduciary Net Position presents the additions to and deductions from the Plan's net position during the year. The Plan receives contributions from participants and the County, as well as income or losses from investments and related activities. The primary deductions are the payment of benefits, which are the Plan's primary objectives. Deductions also include refunds to members who leave the Plan as well as administrative expenses.

Notes to the Basic Financial Statements

The Notes to Financial Statements contain disclosures and discussions which support the data presented in the financial statements. The notes present information about administration of the Plan, significant accounting policies, and investments. The notes are an integral part of the financial statements and should be considered in conjunction with any review of the financial statements.

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
MANAGEMENT'S DISCUSSION AND ANALYSIS
YEARS ENDED JUNE 30, 2017 AND 2016**

Required Supplementary Information

The RSI section provides actuarially determined information about the Plans and displays changes for each Plan's Net Pension Liability (NPL) and related ratios, contributions related to payrolls by Plan, and money-weighted investment returns.

Summary of Financial Information

The following Condensed Statements of Fiduciary Net Position and Changes in Fiduciary Net Position present financial information for the Plan and compares fiscal years 2017, 2016 and 2015.

	2017	2016	2015	2017 Percentage Change	2016 Percentage Change
Assets					
Receivables	\$ 2,573,878	\$ 2,292,504	\$ 2,349,162	12%	-2%
Investments	514,465,252	448,649,504	430,364,220	15%	4%
Prepaid Insurance	24,124	24,124	22,543	0%	7%
Total Assets	<u>517,063,254</u>	<u>450,966,132</u>	<u>432,735,925</u>	15%	4%
Liabilities					
Investment Purchased	470,375	1,705,257	300,222	-72%	468%
Accounts Payable	337,092	312,246	406,679	8%	-23%
Total Liabilities	<u>807,467</u>	<u>2,017,503</u>	<u>706,901</u>	-60%	185%
Net Position Held in Trust for Pension Benefits	<u>\$ 516,255,787</u>	<u>\$ 448,948,629</u>	<u>\$ 432,029,024</u>	15%	4%
Additions					
Employer Contributions	\$ 24,729,051	\$ 21,636,281	\$ 22,530,039	14%	-4%
Employee Contributions	7,387,461	7,040,881	7,006,494	5%	0%
Investment Income	55,956,414	6,458,907	11,530,877	766%	-44%
Total Additions	<u>88,072,926</u>	<u>35,136,069</u>	<u>41,067,410</u>	151%	-14%
Deductions					
Benefit Payments and Refunds	20,421,146	17,889,631	18,940,703	14%	-6%
Administrative Expense	344,622	326,833	368,299	5%	-11%
Total Deductions	<u>20,765,768</u>	<u>18,216,464</u>	<u>19,309,002</u>	14%	-6%
Net Change Net Position Held in Trust for Pension Benefits	67,307,158	16,919,605	21,758,408	298%	-22%
Beginning of Year	448,948,629	432,029,024	410,270,616	4%	5%
End of Year	<u>\$ 516,255,787</u>	<u>\$ 448,948,629</u>	<u>\$ 432,029,024</u>	15%	4%

The investment Pool's returns (gross of fees) are displayed by investment type in the following table.

<u>Asset Class</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Equities	21.6%	-4.1%	2.4%
Fixed Income	3.7%	6.9%	1.3%
Alternative Investments	9.6%	5.1%	10.3%
Real Assets	6.9%	12.5%	4.3%

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
MANAGEMENT'S DISCUSSION AND ANALYSIS
YEARS ENDED JUNE 30, 2017 AND 2016**

The Plan's funding objective is to meet long-term benefit obligations through contributions and investment income. The funding ratio, which is the actuarial value of assets divided by the actuarial accrued liability is an estimate of how well the Plan is meeting that objective. A higher ratio indicates the Plan is better funded. As of July 1, 2016 and July 1, 2015, the funded ratios for the Plan were 81.6% and 81.8% respectively. Additionally, Plan fiduciary net position as a percentage of the total pension liability as of June 30, 2017 is 80.95%.

The Plan paid \$20.4 million in retirement benefits and refunds to participants and beneficiaries during 2017, compared to \$17.9 million in 2016.

The Plan received \$32.1 million in contributions during 2017 and \$28.7 million in 2016. The County contributed 100.0% of the 2017 Actuarially Determined Contribution of 30.6%. In 2016, the County contributed the ADC of 30.0%.

Additional Information

The Plan's financial statements are presented in accordance with accounting principles generally accepted in the United States of America and are available at Howard County's web page at www.howardcountymd.gov/Departments/Finance/Financial-Information/Audit-Information

HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
STATEMENTS OF FIDUCIARY NET POSITION
JUNE 30, 2017 AND 2016

	2017	2016
ASSETS		
Receivables:		
Employer Contributions	\$ 1,358,257	\$ 1,103,819
Member Contributions	394,451	357,493
Interest and Dividends	612,712	570,535
Due from Sale of Investments	19,794	253,635
Other	188,664	7,022
Total Receivables	2,573,878	2,292,504
Investments, at Fair Value:		
Money Market	8,540,880	7,314,477
Equities	219,274,138	187,843,351
Fixed Income	148,628,783	132,985,222
Alternative Investments	118,920,503	98,781,475
Real Assets	19,100,948	21,724,979
Total Investments	514,465,252	448,649,504
Prepaid Insurance	24,124	24,124
Total Assets	517,063,254	450,966,132
LIABILITIES		
Investment Purchases	470,375	1,705,257
Accounts Payable	337,092	312,246
Total Liabilities	807,467	2,017,503
Fiduciary Net Position Held in Trust for Pension Benefits	\$ 516,255,787	\$ 448,948,629

See accompanying Notes to Financial Statements.

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION
YEARS ENDED JUNE 30, 2017 AND 2016**

	2017	2016
ADDITIONS		
Contributions:		
Employer	\$ 24,729,051	\$ 21,636,281
Member	7,387,461	7,040,881
Total Contributions	32,116,512	28,677,162
INVESTMENT INCOME		
Net Appreciation (Depreciation) in Fair Value of Investments	46,251,000	(3,073,955)
Interest	2,430,318	2,515,056
Dividends	8,503,292	8,304,546
Other, Net	269,689	51,441
Total Investment Income	57,454,299	7,797,088
Less Investment Expense	1,497,885	1,338,181
Net Investment Income	55,956,414	6,458,907
 Total Additions	 88,072,926	 35,136,069
DEDUCTIONS		
Benefits:		
Annuities	20,131,994	17,741,674
Refunds of Contributions	289,152	147,957
Total Benefits	20,421,146	17,889,631
Administration Expenses	344,622	326,833
Total Deductions	20,765,768	18,216,464
NET CHANGE	67,307,158	16,919,605
Fiduciary Net Position Held in Trust for Pension Benefits:		
Beginning of Year	448,948,629	432,029,024
End of Year	\$ 516,255,787	\$ 448,948,629

See accompanying Notes to Financial Statements.

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016**

NOTE 1 PLAN DESCRIPTION

Plan Administration

The Howard County Police and Fire Employees' Retirement Plan (the "Plan") is a single-employer defined benefit public employee retirement system established and administered by Howard County (the "County"), Maryland, to provide defined pension benefits for career firefighters and sworn police officers. The Plan is considered part of the County's financial reporting entity and is included in the County's financial statements as a pension trust fund. The accompanying financial statements present only the operations of the Plan and are not intended to present the financial position and results of operations of the County.

Plan Membership

At July 1, 2016 and 2015, the Plan's membership consisted of the following:

	2016	2015
Active	872	882
Retired and Beneficiaries	320	304
Disabled	33	31
Terminated Vested	19	18
Total	1,244	1,235

The Plan was established, is operated, and may be amended under the provisions of Sections 1.400 and 1.401A to 1.478A of the Howard County Code. All of the County's full-time career firefighters and sworn police officers are eligible to participate in the Plan. The Retirement Plan Committee established by Howard County Code Section 1.455A has full power and authority to administer and operate the Plan in accordance with its terms and in particular the authority contained in subsection 1.454(a). The Pension Oversight Commission established by Howard County Code, Section 1.482 provides ongoing assessment and evaluation of the Plan's operations.

Benefits Provided

All of the County's full-time career police and fire officers hired on or after July 1, 1990 must enroll in the Police and Fire Plan. The Plan provides retirement benefits as well as death and disability benefits and cost-of-living adjustments.

Participants become vested after 5 years of eligibility service and are entitled to a benefit beginning at age 62. Terminated vested employees with less than 20 years of service will receive a benefit equal to 2.5% of average compensation times the number of years of creditable service, payable at age 62. If an employee leaves employment or dies before 5 years of eligibility service, accumulated employee contributions plus interest are refunded to the employee or the designated beneficiary. A participant who becomes totally and permanently disabled may retire prior to normal retirement and receive a benefit. Both disability and death benefits vary if incurred in the line of duty.

HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016

NOTE 1 PLAN DESCRIPTION (CONTINUED)

Benefits Provided (Continued)

Employees who attain the age of 62 with at least 5 years of eligibility service and employees who have completed 20 years of eligibility service, if at least 10 years were served as a covered employee, are entitled to a normal retirement benefit. The amount will vary, based on the number of years of creditable service, from 50% (with 20 years of service) to 80% (with 30 years of service) of average compensation for police; and from 50% (with 20 years of service) to 70% (with 30 years of service) of average compensation for firefighters.

Benefits in pay status are adjusted annually for a post retirement cost of living adjustment ("COLA"). The Plan uses the Consumer Price Index ("CPI-U") for the Washington/Baltimore area as published by the Bureau of Labor Statistics to calculate the change in retiree allowances each July. Maximum annual COLA is 2%.

Contributions

The Plan is authorized to establish or amend the obligations to make contributions under the provisions of the Howard County Code, Sections 1.423A and 1.465A. The Plan's funding policy provides for periodic employer contributions at actuarially determined rates that, expressed as percentages of annual covered payroll, are sufficient to accumulate adequate assets to pay benefits when due. Participant contributions are 11.6% of base pay for participating Police Department Employees and 7.7% of base pay for participating Fire Department Employees. The County funds the remainder of the cost of employees' participation in the Plan, which was 30.6% and 30% of covered payroll in fiscal years 2017 and 2016, respectively. The County contribution to the Plan is determined through an actuarial valuation performed by Bolton Partners, Inc. for each fiscal year. Expenses incurred in the administration and operation of the Plan are funded by the Plan.

NOTE 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND PLAN ASSET MATTERS

Method Used to Value Investments

The Plan's investments are maintained in a combined investment pool. The Plan does not own an undivided interest in specific assets of the Pool. The investments presented by category are the Plan's proportionate share of the investments by category of the Pool and are reported at fair value. Short-term investments consisting of money market funds are reported at amortized cost, which approximates fair value. Securities traded on a national or international exchange are valued at either the last reported sales price, evaluated bid, broker quoted, or pool-specific pricing. The fair value of real estate investments is approximated by the net asset value of the Plan's share of ownership of the co-mingled real estate investment funds. Fair value of other securities is determined by the mean of the most recent bid and asked prices as obtained from dealers that make markets in such securities.

Basis of Accounting

The Plan's financial statements are prepared using the accrual basis of accounting. Employer and employee contributions are recognized as revenue in the period in which employee services are performed and expenses and refunds are recorded when the corresponding liabilities are incurred, regardless of when payment is made. Benefits are recorded when the payments are made.

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016**

**NOTE 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND PLAN ASSET MATTERS
(CONTINUED)**

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates that affect the reported amounts in the financial statements and accompanying notes. Actual results could differ from those estimates.

Income Taxes

The Internal Revenue Service issued a determination letter on September 28, 2016, which stated that the Plan and its underlying trust qualify under the applicable provisions of the Internal Revenue Code and therefore are exempt from Federal income taxes.

NOTE 3 INVESTMENTS

Investment Policy

The Plan's policy in regard to the allocation of invested assets is established and administered by the Retirement Plan Committee. Specific investment goals stated in the policy shall be reviewed at least annually and, when appropriate, new goals and standards shall be adopted by the Retirement Plan Committee. The policy is expected to provide diversification of assets in an effort to maximize investment return to the Plan consistent with prudent market and economic risk. All of the Plan's assets are to remain invested at all times in the asset classes as designated by the policy. The following strategic asset allocation policy was adopted by the Plan on March 21, 2002, last amended on February 26, 2015 and remained in effect as of June 30, 2017:

<u>Asset Class</u>	<u>Target Allocation</u>
Equities	40.0%
Alternative Investments	22.5%
Fixed Income	30.0%
Real Assets	7.5%
Total	<u>100.0%</u>

Concentrations

The Plan held investments in the following organizations that represent 5% or more of the pension plan's fiduciary net position: Blackstone (6%), Dimensional (7%), Dodge and Cox (12%), Fidelity (7%), Invesco (6%), LSV (6%), Magnitude (6%), Mondrian (6%), PIMCO (11%), and Westfield (6%).

Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the statements of fiduciary net position.

HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016

NOTE 3 INVESTMENTS (CONTINUED)

Risks and Uncertainties (Continued)

Interest Rate Risk

The Plan's investment policy does not place any limits on the professional investment managers with respect to the duration of investments for the Plan. The Plan's fixed income investments by maturity and type at June 30, 2017 were as follows:

<u>Investment Type</u>	<u>Fair Value/ NAV</u>	<u>Weighted Average Maturity (in years)</u>
Corporate Bonds	\$ 26,806,090	12.83
U.S. Government - Sponsored Enterprises	18,085,032	22.59
Government Issued/Treasuries	11,520,795	2.71
Collateralized Mortgage Obligations	2,022,025	24.87
Municipal Securities	1,870,989	12.61
Credit Card Receivable	628,909	4.93
Auto Loan Receivable	309,637	9.05
Alternative Investments, Mutual Funds, and TIPS Identified as Fixed Income for Reporting Purposes	87,385,306	N/A
Total	<u>\$ 148,628,783</u>	
Portfolio Weighted Average Maturity		14.10

<u>Standard & Poor's Rating or Comparable</u>	<u>Fair Value</u>
AAA to A-	\$ 17,149,428
BBB to B	23,008,748
CCC	978,244
Not rated	107,492,363
Total	<u>\$ 148,628,783</u>

Concentration of Credit Risk

The Plan's investment policy does not establish any limitation on the percentage that the Plan may have with any one issuer, other than to state that the Plan's assets are to be diversified in accordance with Modern Portfolio Theory. At June 30, 2017, the Plan's investments did not exceed 5% with any one issuer.

Custodial Credit Risk

State Street Bank invests in Government Short-Term Investment Fund (GSTIF), which is included in money markets on the Statement of Fiduciary Net Position, on behalf of the Plans. At fiscal year-end, the amount in this fund at amortized cost which approximates fair value was \$8,016,534, which was partially used for settlement of open purchases of \$470,880. All other investments of the fund are held by State Street Bank as trustee in the Plan's name.

HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016

NOTE 3 INVESTMENTS (CONTINUED)

Risks and Uncertainties (Continued)

Credit Risk - Currency Forward Contract

One of the Plan's investment objectives is to diversify assets in accordance with the Modern Portfolio Theory (MPT) in order to reduce overall risk. Consistent with this objective, the Plan has participated in a mutual fund that holds three-month currency forward contracts. This strategy is undertaken to protect the dollar value of underlying international investments. The hedging is restricted to 100% of the underlying asset value and 50% of the total Fund value. At fiscal year-end, there were no hedges in place.

Foreign Currency Risk

The Plan's exposure to foreign currency risk derives from its investments in foreign currency or instruments denominated in foreign currency. Investments in such securities are limited to a maximum net currency exposure of 40.0% at any given time. At year-end, the Plan had no exposure to foreign currency risk.

Rate of Return

For the fiscal year ended June 30, 2017, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 12.18%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amount actually invested.

Investments Purchased and Due from Sales of Investments

Investment transactions are recorded on a trade plus three days or less timetable resulting in an amount due to and due from State Street Bank (the "Plan's Trustee") at year end.

HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016

NOTE 4 FAIR VALUE MEASUREMENT

The Plan is a participant in a combined pension investment pool. The Plan does not own an undivided interest in specific assets of the pool. The table below reflects the Plan's proportionate share of the pool's investments by type and fair value hierarchy established by generally accepted accounting principles as of June 30, 2017 and 2016:

	June 30, 2017	Fair Value Measurement Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Debt Securities:				
Collateralized Mortgage Obligations (Fannie Mae and Freddie Mac)	\$ 2,022,024	\$ -	\$ 2,022,024	\$ -
Corporate Bonds	26,806,089	-	26,806,089	-
Auto Loan Receivables	309,637	-	309,637	-
Credit Card Receivables	628,910	-	628,910	-
Commingled Funds (Fixed Income)	55,894,968	-	55,894,968	-
FHLMC and FNMA Bonds	18,085,033	-	18,085,033	-
U.S. Treasury Securities	11,520,795	11,520,795	-	-
Municipal Bonds	1,870,989	-	1,870,989	-
Preferred Stock	688,252	688,252	-	-
Treasury Inflation Protected Securities	11,756,102	-	11,756,102	-
Total Debt Securities	<u>129,582,799</u>	<u>12,209,047</u>	<u>117,373,752</u>	<u>-</u>
Equity Securities:				
Common Stocks	104,737,827	104,737,827	-	-
Small Company Portfolio	11,411,481	11,411,481	-	-
Emerging Markets Value Portfolio	33,952,489	33,952,489	-	-
Real Estate Investment Trusts (REITS)	2,896,618	2,896,618	-	-
Total Equity Securities	<u>152,998,415</u>	<u>152,998,415</u>	<u>-</u>	<u>-</u>
Total Investment by Fair Value Level	<u>282,581,214</u>	<u>165,207,462</u>	<u>117,373,752</u>	<u>-</u>
Investments Measured at the Net Asset Value (NAV):				
Private Equity Funds	76,673,267			
Equity Hedge Funds	61,293,220			
Real Assets Funds	19,100,948			
International Equity Funds	31,878,468			
Commingled Funds	34,397,255			
Total Investments Measured at the NAV	<u>223,343,158</u>			
Total investments Measured at Fair Value*	<u>\$ 505,924,372</u>			

*Does not include money market funds totaling \$8,540,880, which represents securities that have remaining maturities of less than 1 year and may be measured at amortized cost.

HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016

NOTE 4 FAIR VALUE MEASUREMENT (CONTINUED)

	June 30, 2016	Fair Value Measurement Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Debt Securities:				
Collateralized Mortgage Obligations (Fannie Mae and Freddie Mac)	\$ 2,641,017	\$ -	\$ 2,641,017	\$ -
Corporate Bonds	29,679,400	-	29,679,400	-
Credit Card Receivables	324,311	-	324,311	-
Commingled Funds (Fixed Income)	39,263,469	-	39,263,469	-
FHLMC and FNMA Bonds	17,609,948	-	17,609,948	-
U.S. Treasury Securities	6,618,311	6,618,311	-	-
Municipal Bonds	1,714,518	-	1,714,518	-
Preferred Stock	685,326	685,326	-	-
Treasury Inflation Protected Securities	11,747,232	-	11,747,232	-
Total Debt Securities	110,283,532	7,303,637	102,979,895	-
Equity Securities:				
Common Stocks	94,378,182	94,378,182	-	-
Depository Receipts	691,217	691,217	-	-
Small Company Portfolio	11,235,044	11,235,044	-	-
Emerging Markets Value Portfolio	26,406,310	26,406,310	-	-
Real Estate Investment Trusts (REITS)	2,077,555	2,077,555	-	-
Total Equity Securities	134,788,308	134,788,308	-	-
Total Investment by Fair Value Level	245,071,840	142,091,945	102,979,895	-
Investments Measured at the Net				
Asset Value (NAV):				
Private Equity Funds	67,611,300			
Equity Hedge Funds	53,871,865			
Real Assets Funds	21,724,979			
International Equity Funds	20,339,047			
Commingled Funds	32,715,996			
Total Investments Measured at the NAV	196,263,187			
Total investments Measured at Fair Value*	\$ 441,335,027			

*Does not include money market funds totaling \$7,314,477, which represents securities that have remaining maturities of less than 1 year and may be measured at amortized cost.

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Debt securities classified in Level 2 of the fair value hierarchy refers to securities not traded on an active market but for which observable market inputs are readily available. Fixed income securities are priced on a daily basis, market to market, using a variety of third party pricing sources, market data and methodologies.

HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016

NOTE 4 FAIR VALUE MEASUREMENT (CONTINUED)

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the following table:

	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Private Equity	\$ 76,673,267	\$ 31,200,273	Illiquid	N/A
Hedge Fund 1	30,193,781	-	Quarterly	65 days
Hedge Fund 2	31,099,439	-	Semi Annually	95 days
Real Assets Funds	19,100,948	11,495,483	Illiquid	N/A
International Equity Funds	31,878,468	-	Monthly	15 days
Commingled Funds	34,397,255	-	Daily	5 days
	\$ 223,343,158			

1. Private Equity Funds: This represents investments that are entirely through Fund of Fund ("FOF") vehicles and invest in both debt and equity strategies. Exposures are diversified by manager, region, strategy and vintage year. Managers retained pursue distressed debt, venture, or buyout strategies. This type also includes investment in the private equity secondary market. The FOF investments have 10 - 40 underlying managers/funds building broad exposures for diversified performance. These funds have liquidity restrictions for the life of the investment, 7 - 10 years. Options for exit are limited to sale on the secondary market. Capital commitments are made to these types of investments and funds are invested through a call down structure.
2. Equity Hedge Funds: This represents investments in two Hedge FOF managers. Each FOF manager invests in underlying hedge funds to provide a broadly diversified portfolio. One invests with 90 - 100 underlying managers/funds to execute its global market strategy. The other invests in 20 - 40 underlying managers/funds in a relative value mandate. The hedge fund strategy is designed to diversify by manager/fund to reduce single manager/fund risk while offering portfolio diversification and provide a return profile that is uncorrelated to the rest of the assets in the portfolio. The fair values of the investments are determined using the NAV per share (or its equivalent) of the investments. These funds have liquidity restrictions of 3 to 6 months.
3. Real Asset Funds: This represents funds that invest in institutional real estate (office, multi-family, industrial, and retail) and natural resources strategies. The fair values of the investments in these strategies are determined using the NAV per share (or its equivalent) of the Plan's ownership interest in partnership's capital. The real estate strategies deployed include a U.S. focused property strategy (core to core plus) and a global FOF strategy. The global FOF manager invests in 20 - 30 underlying managers/funds. The natural resources investments are through FOF strategies. The natural resource managers invest in 10 - 25 underlying relationships as they build a diversified portfolio with exposure to oil, natural gas, agriculture, timber and other natural resources. Capital commitments are made to these types of investments and funds are invested through a call down structure. These funds have liquidity restrictions for the life of the investment, 7 - 10 years. Options for exit are limited to sale on the secondary market.

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016**

NOTE 4 FAIR VALUE MEASUREMENT (CONTINUED)

4. International Equity Funds: This represents investments primarily in value oriented equity securities of international developed markets (non-U.S. issuers; e.g., MSCI EAFE) with the objective of achieving a long-term return above a passive benchmark (EAFE). This manager focuses on a dividend discount model value based philosophy for publicly traded equity. All securities are recorded at fair value. Foreign securities are valued on the basis of quotations from the primary market in which they are traded and translated at each valuation date from the local currency into U.S. dollars using current exchange rates. The Fund may enter into forward foreign currency exchange contracts primarily to hedge against foreign currency exchange rate risks on its non-U.S. dollar-denominated investment securities.

5. Commingled Funds: This represents investments primarily in growth oriented equity securities of international developed markets (non-U.S. issuers; e.g., MSCI EAFE). The objective of this fund is to achieve long-term growth of capital and a return above a passive benchmark (EAFE) by identifying publicly traded equities with strong growth prospects. NAVs are normally calculated as of 4:00pm Eastern Time for each business day the relevant exchange (usually the NYSE) is open. Securities for which market quotations are readily available and reliable are to be valued using the applicable market quotations.

NOTE 5 DEFERRED RETIREMENT OPTION PROGRAM

The Plan offers a program called Deferred Retirement Option Plan ("DROP"). This is a voluntary benefit program which offers qualified active Participants, who would be entitled to retire and receive benefits, the option to continue working. An individual DROP account is created and is credited with the monthly retirement benefits that would have been paid during the DROP period had the participant actually retired. The account is also credited with the required employee contributions and interest. The DROP account is paid to the employee, in addition to the benefit payment entitled under the defined benefit plan based on the earlier years of service, when the employee eventually retires. Participating members may elect distribution as one lump sum payment, a rollover or in monthly payments. The balance held by the Plan as of June 30, 2017 was \$15,197,265.

NOTE 6 NET PENSION LIABILITY OF THE COUNTY

The components of the net pension liability of the County at June 30, 2017 were as follows:

Total Pension Liability	\$ 637,712,072
Plan Fiduciary Net Position	(516,255,787)
County's Net Pension Liability	\$ 121,456,285

Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	80.95%
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**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2017 AND 2016**

NOTE 6 NET PENSION LIABILITY OF THE COUNTY (CONTINUED)

Actuarial Assumptions

The total pension liability in the July 1, 2016 actuarial valuation rolled forward to June 30, 2017 was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary Increases	Varies by service, 4.25% to 7.55%, including inflation
Investment Rate of Return	7.50%, net of pension plan investment expense, including inflation
Mortality	RP-2000 Combined Healthy tables with generational projection by Scale AA

The actuarial assumptions used in this valuation, for GASB 67 purposes, were generally based on the 2014 Experience Study covering the period from July 1, 2009 through June 30, 2013. Economic assumptions and the demographic assumptions were updated to reflect the 2009 - 2013 experience study.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class, included in the Plan's target allocation as of June 30, 2017 (see Note 3), are summarized in the following table:

<u>Asset Class</u>	<u>Long-Term Expected Real Rate of Return</u>
Equities	5.24%
Fixed Income	2.05%
Alternative Investments	5.37%
Real Assets	4.75%

Discount Rate

The discount rate used to measure the total pension liability was 7.50%. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the current contribution rate and that the County contributions will be made at rates equal to the difference between total actuarially determined contribution rates and the employee rate. Based on those assumptions, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
 NOTES TO FINANCIAL STATEMENTS
 JUNE 30, 2017 AND 2016**

NOTE 6 NET PENSION LIABILITY OF THE COUNTY (CONTINUED)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability of the County, calculated using the discount rate of 7.50%, as well as what the County's net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (6.50%) or 1 percentage point higher (8.50%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
County's Net Pension Liability	<u>\$ 212,181,223</u>	<u>\$ 121,456,285</u>	<u>\$ 46,938,580</u>

REQUIRED SUPPLEMENTARY INFORMATION

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CHANGES IN THE COUNTY'S NET PENSION LIABILITY AND RELATED RATIOS
(DOLLAR AMOUNTS IN THOUSANDS)
LAST 10 FISCAL YEAR**

	2017	2016	2015	2014*
Total pension liability				
Service cost	\$ 19,163	\$ 18,974	\$ 17,708	\$ 17,535
Interest	43,426	39,998	36,208	33,630
Changes of benefit terms	-	(1,705)	-	-
Differences between expected and actual experience	6,319	7,599	(1,596)	-
Changes of assumptions	-	-	16,621	14,989
Benefit payments, including refunds of member contributions	(20,422)	(17,890)	(18,941)	(15,679)
Net change in total pension liability	48,486	46,976	50,000	50,475
Total pension liability - beginning	589,226	542,250	492,250	441,775
Total pension liability - ending (a)	\$ 637,712	\$ 589,226	\$ 542,250	\$ 492,250
Plan fiduciary net position				
Contributions - employer	\$ 24,729	\$ 21,636	\$ 22,530	\$ 20,822
Contributions - member	7,387	7,041	7,006	6,526
Net investment income	55,956	6,459	11,531	54,733
Benefit payments, including refunds of member contributions	(20,421)	(17,889)	(18,941)	(15,679)
Administrative expense	(344)	(327)	(368)	(271)
Net change in plan fiduciary net position	67,307	16,920	21,758	66,131
Plan fiduciary net position - beginning	448,949	432,029	410,271	344,140
Plan fiduciary net position - ending (b)	\$ 516,256	\$ 448,949	\$ 432,029	\$ 410,271
County's net pension liability - ending (a)-(b)	\$ 121,456	\$ 140,277	\$ 110,221	\$ 81,979
Plan fiduciary net position as a percentage of the total pension liability	80.95%	76.19%	79.67%	83.35%
Total Covered payroll	\$ 80,814	\$ 72,121	\$ 70,406	\$ 67,169
County's net pension liability as a percentage of covered payroll	150.29%	194.50%	156.55%	122.05%
Expected average remaining service years of all participants	9	10	10	9

* Information for FY2013 and earlier is not available.

Notes to Schedule:

Benefit changes. None

Changes of assumptions. None

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF COUNTY CONTRIBUTIONS
(DOLLAR AMOUNTS IN THOUSANDS)
LAST 10 FISCAL YEARS**

	2017	2016	2015	2014*
Actuarially determined contribution	\$ 24,729	\$ 21,636	\$ 22,530	\$ 20,822
Contributions in relation to the actuarially determined contribution	24,729	21,636	22,530	20,822
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered payroll	\$ 80,814	\$ 72,121	\$ 70,406	\$ 67,169
Contributions as a percentage of covered payroll	30.60%	30.00%	32.00%	31.00%

* Information for FY2013 and earlier is not available.

Notes to Schedule

Valuation date:

The actuarial valuation date is the beginning of the fiscal year.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Projected Unit Credit (Entry Age used for GASB 67 purposes)
Amortization method	Level percent of pay increasing 2.75 percent per year
Remaining amortization period	Remaining Amortization periods range from 6 to 17 years.
Asset valuation method	5-year smoothed market
Inflation	2.75%
Salary increases	Varies by service. 4.25 to 7.55 percent, including inflation
Investment rate of return	7.50%, before expenses, including inflation
Retirement age	Rates vary by participant age and service and (for GASB purposes only) set at 100% at DROP entry (or expected entry). Normal Cost (for GASB purposes) ceases for Police and Fire members when they enter DROP since GASB 67 does not allow Normal Cost while in DROP.

Mortality

RP-2000 Combined Healthy tables with generational projection by Scale AA
2.0%

Cost of Living Increases

**HOWARD COUNTY POLICE AND FIRE EMPLOYEES' RETIREMENT PLAN
 REQUIRED SUPPLEMENTARY INFORMATION
 SCHEDULE OF INVESTMENT RETURNS
 (DOLLAR AMOUNTS IN THOUSANDS)
 LAST 10 FISCAL YEARS**

Fiscal Year Ending	Annual Money-Weighted Rate of Return, Net of Investment Expenses
6/30/2017	12.18%
6/30/2016	1.38%
6/30/2015	2.95%
6/30/2014	15.62%
6/30/2013	11.33%
6/30/2012	-1.21%
6/30/2011	20.56%
6/30/2010	15.42%
6/30/2009	-16.21%
6/30/2008	-14.44%