Montgomery County Employees' Retirement System

Actuarial Valuation as of July 1, 2018

GRS

Table of Contents

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October 5, 2018

Ms. Linda Herman
Executive Director
Montgomery County Employees' Retirement System
101 Monroe Street, 15th Floor
Rockville, Maryland 20850

Dear Linda:

We are pleased to provide our formal annual Actuarial Valuation Report as of July 1, 2018, for the Montgomery County Employees' Retirement System ("System"). The actuarial valuation was performed at the request of Montgomery County ("County") and is intended for use by the County and the System and those designated by the County and the System. This report may be provided to parties other than the County and System only in its entirety and only with the permission of the County and System. GRS is not responsible for unauthorized use of this report.

The purposes of the actuarial valuation are to measure the funding progress of the System and to determine the recommended annual contribution to the System for the Plan Year commencing July 1, 2019, and ending on June 30, 2020. Information required by GASB Statement Nos. 67 and 68 is provided in a separate report. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

The recommended annual contribution in this report is determined using the actuarial assumptions and methods disclosed in Section C of this report. This report includes risk metrics on page A-6 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This actuarial valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The actuarial valuation was based upon information furnished by the County Staff, concerning benefits provided by the Montgomery County Employees' Retirement System, financial transactions, plan provisions and census data for active members, terminated members, retirees and beneficiaries as of July 1, 2018. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the County Staff.

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This report was prepared using actuarial assumptions adopted by the Board as authorized under Montgomery County Code. All actuarial assumptions used in this report are reasonable for the purposes of this actuarial valuation and meet the parameters set forth in the Actuarial Standards of Practice issued by the Actuarial Standards Board. Additional information about the actuarial assumptions is included in the Section C of this report. The actuarial assumptions and the actuarial cost method are unchanged from the last actuarial valuation as of July 1, 2017.

The plan provisions have remained unchanged since the last actuarial valuation, performed as of July 1, 2017.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Montgomery County Employees' Retirement System as of the actuarial valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Lance J. Weiss and Amy Williams are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein.

The signing actuaries are independent of the plan sponsor.

We will be pleased to review this report with you at your convenience.

Respectfully submitted,

Gabriel, Roeder, Smith & Company

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SECTION A

ACTUARIAL VALUATION RESULTS

Comments on the Actuarial Valuation

At your request, we have performed an actuarial valuation of the Montgomery County Employees' Retirement System as of July 1, 2018.

The purposes of this actuarial valuation are as follows:

- To determine the funding status of the System as of the actuarial valuation date;
- To determine the recommended contribution for the fiscal year beginning July 1, 2019; and
- To provide other data required by the System.

Accounting information required under Governmental Accounting Standards Board ("GASB") Statement Nos. 67 and 68 is presented in a separate report.

We received the data from the Montgomery County Employees' Retirement System Staff. We performed certain checks for reasonableness and found the data to be complete and reliable for actuarial valuation purposes. However, we did not audit the data.

A total of 6,004 active members (excluding DRSP and DROP) were included in the actuarial valuation as of July 1, 2018. Between the 2017 and 2018 actuarial valuations, the number of active employees increased by 266 members, or 4.6 percent. The average annual actuarial valuation pay (excluding DRSP and DROP) increased by 0.7 percent, from $77,427 to $77,944 between the 2017 and 2018 actuarial valuation. The number of benefit recipients (including DRSP and DROP) increased from 6,516 to 6,615, or 1.5 percent, since the last actuarial valuation. The average monthly benefit increased by 2.7 percent, from $3,135 to $3,219. Section B summarizes the membership data.

There is a group of retirees who have benefits that are insured by Aetna. The total benefit amount reported for each of these members in the actuarial valuation report includes the insured benefit amount. However, the actuarial liabilities exclude the value of the insured benefits. The actuarial liabilities for these members who are included in the actuarial valuation are for the cost of living adjustments provided and are paid by the Montgomery County Employees' Retirement System.

Section C outlines the actuarial assumptions and methods used in the actuarial valuation. The actuarial assumptions used in this actuarial valuation are the same as those used in the actuarial valuation at July 1, 2017, and were based on an experience review covering the period July 1, 2009 to July 1, 2014. We recommend that GRS perform an updated experience review no later than after the actuarial valuation as of July 1, 2019. The assumption for administrative expenses is equal to 105 percent of the average of the prior three years' administrative expenses. This amount has increased from $3,109,500 to $3,174,700.

Section D outlines the principal benefit provisions of the System. The plan provisions used in this actuarial valuation are the same as those used in the actuarial valuation at July 1, 2017.

During the plan year ending June 30, 2018, the unfunded actuarial accrued liability ("UAAL") decreased from $234,135,450 as of July 1, 2017, to $184,942,468 as of July 1, 2018, which is a decrease of $49,192,982. The key factors contributing to the decrease in the UAAL were (1) contributions under the funding policy that are expected to decrease the UAAL, (2) asset gains on the actuarial value of assets, (3) higher dollar contributions than expected and (4) lower than expected cost of living (COLA) increases for retired members. (The COLA increase was 2.453 percent compared to an assumed COLA increase of 2.75 percent from last year's actuarial valuation for benefits attributable to service prior to July 1, 2011, and an assumed COLA increase of 2.30 percent for benefits attributable to service on or after July 1, 2011. For members who receive an increase based on 60 percent of CPI, the actual increase was 1.472 percent compared to an assumption of 1.65 percent from last year's valuation.)

On a market value basis, the Plan assets had an investment return of approximately 8.57[1] percent (net of investment expenses). Recognition of investment gains during fiscal years ending 2014, 2017 and 2018 were partially offset by recognition of the fiscal year end 2015 and 2016 investment losses. The net investment gains resulted in an estimated net asset rate of return of 7.81 percent on an actuarial value of assets basis, which compares to the assumed rate of return of 7.50 percent.

The funded ratio (ratio of assets to liabilities) increased from 94.4 percent to 95.7 percent on an actuarial value of assets basis, and increased from 93.6 percent to 95.7 percent on a market value of assets basis between the 2017 and 2018 actuarial valuations.

The funded ratio and unfunded actuarial accrued liability are useful for assessing the need for and the amount of future unfunded liability contributions (excludes normal cost contributions). They are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the System's benefit obligations.

Recommended County Contributions

The total contribution rate is equal to the normal cost rate plus amortization of the unfunded liability as a level percentage of payroll. The amortization policy was updated beginning with the actuarial valuation as of July 1, 2015. The unfunded liability as of July 1, 2015 (and in each future year) for the Non-Public Safety groups (Groups A and H) is amortized over a single closed period of 9 years (6.0 years remaining at the actuarial valuation as of July 1, 2018 to amortize the total unfunded liability). The unfunded liability as of July 1, 2015, for the Public Safety groups (Groups E, F and G) and GRIP was amortized over a closed period of 20 years (17.0 years remaining at the actuarial valuation as of July 1, 2018) and the unfunded liability bases established in each subsequent year are amortized over separate 20-year closed periods.

The single equivalent amortization period for the System in total as of July 1, 2018, is 7.0 years. The single equivalent amortization period is 6.0 years for the Non-Public Safety groups, 14.1 years for the Public Safety groups and 16.4 years for GRIP as of July 1, 2018. The current unfunded liability as of July 1, 2018, is expected to be fully paid off after six years (at the end of fiscal year 2025) for the non-public safety groups and after twenty years (at the end of fiscal year 2039) for the public safety groups and GRIP. (Because the unfunded liability bases established as of July 1, 2016, July 1, 2017, and July 1, 2018 were negative, which results in amortization credits, the unfunded liability is expected to be fully paid off after 17.0 years for the Public Safety group.)

The unfunded liability is amortized as a level percentage of payroll and assumes that total payroll will increase by 3.25 percent each year. Groups A and H are closed plans (no new members are entering), and payroll is expected to decrease as members retire or otherwise exit the active population. Based on the level percentage of payroll amortization method, the portion of the County contribution rate attributable to the unfunded liability is expected to increase significantly as a percentage of payroll, as payroll declines.

[1] *As provided by Montgomery County ERS.*

However, if all assumptions are realized, the unfunded liability contribution will increase as a dollar amount by 3.25 percent each year. The payroll basis used in calculating the percentage of pay contribution for amortizing the unfunded liability for fiscal year 2020 reflects the assumption that fiscal year 2020 payroll will decrease from the payroll as of July 1, 2018, for the closed groups.

The total contribution rate minus the average employee contribution rate equals the County contribution rate. The actuarial valuation as of July 1, 2017, established the County contribution rate for fiscal year beginning July 1, 2018 and ending June 30, 2019. The actuarial valuation as of July 1, 2018, establishes the County contribution rate for fiscal year beginning July 1, 2019, and ending June 30, 2020.

Non-GRIP

The unfunded liability by group as of July 1, 2018, was calculated as the difference between the actuarial accrued liability and the actuarial value of assets as of July 1, 2018. The unfunded liability as of July 1, 2018, is amortized over a single closed 6 year period for non-Public Safety (Groups A and H). The unfunded liability for Public Safety (Groups E, F and G) as of July 1, 2015, was amortized over an initial closed period of 20 years (17 years remaining at the actuarial valuation as of July 1, 2018) as a level percentage of payroll. The additional unfunded liability from the subsequent actuarial valuations as of July 1, 2016, July 1, 2017, and July 1, 2018 is amortized over a 20-year closed period as a level percentage of payroll. Additional details on the unfunded liability and amortization payments by group can be found in Section C.

The amortization base for GRIP is separately tracked. Outside agencies are separately amortizing their portion of the non-GRIP unfunded liability as a level dollar amount over a 20-year closed period as of July 1, 2015 (10-year closed period for Strathmore Hall and Washington Suburban Transit Commission). In determining the unfunded actuarial accrued liability base and amortization of unfunded liability contribution rate for Group A, the non-GRIP outside agencies' unfunded liability was deducted along with excluding the non-GRIP outside agencies' contribution basis payroll for amortization of the unfunded actuarial accrued liability.

The County contribution rates for fiscal year 2020 decreased for Public Safety and increased for non-Public Safety from the fiscal year 2019 County contribution rate. Both Public Safety and non-Public Safety groups experienced favorable experience during fiscal year 2018, including lower retiree COLA increases than expected under the actuarial assumptions and higher contributions than expected. This favorable experience was partially offset by recognition of deferred asset losses from fiscal years 2015 and 2016.

The actuarial value of assets is currently approximately 100 percent of the market value of assets. There is $594,704 in net asset losses currently being deferred ($46,889 deferred asset losses in total for GRIP and non-GRIP) that will be phased into the actuarial value of assets over the next four years. Assuming all future assumptions are realized, there is projected to be an increase in the recommended County contribution as the remaining deferred asset losses are recognized.

Comments on the Actuarial Valuation (Concluded)

GRIP

Beginning with the July 1, 2015, actuarial valuation, amortization bases established prior to July 1, 2015, were recombined into a single amortization base equal to the unfunded liability as of July 1, 2015. The unfunded liability for GRIP as of July 1, 2015, was amortized over an initial closed period of 20 years (17.0 years remaining at the actuarial valuation as of July 1, 2018) as a level percentage of payroll. The additional unfunded liability from each subsequent actuarial valuation is amortized over a separate 20-year closed period as a level percentage of payroll.

The County contribution rate for fiscal year 2020 increased for GRIP members from the fiscal year 2019 rate. The increase in the County contribution rate is mainly attributable to amortizing the negative unfunded liability contribution over a larger payroll base, which results in a lower unfunded liability amortization rate. The County contribution rate is approximately 0.7 percent lower than the County normal cost rate.

The actuarial value of GRIP assets is approximately 100 percent of the market value of assets. There is $547,815 in net asset gains currently being deferred that will be phased into the actuarial value of assets over the next four years. Assuming all future assumptions are realized, there is projected to be a decrease in the recommended County contribution as the remaining deferred asset gains are recognized.

RISKS ASSOCIATED WITH THE MEASURING THE ACCRUED LIABILITY AND ACTUARIALLY DETERMINED CONTRIBUTION

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The County contribution rates shown on page A-7 may be considered as a minimum contribution rate that complies with the County's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	2017	2018
Ratio of the market value of assets to total payroll	8.85	8.87
Ratio of actuarial accrued liability to payroll	9.46	9.26
Ratio of actives to retirees and beneficiaries [1]	0.88	0.91
Ratio of net cash flow to market value of assets	-0.02	-0.03

[1] *DRSP/DROP participants included in the count of retirees and beneficiaries*

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time. The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

ADDITIONAL RISK ASSESSMENT

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Summary of Actuarial Valuation Results

		July 1, 2017 Results	July 1, 2018 Results
Membership Data	Active Members	5,738	6,004
	DRSP/DROP	123	147
	Deferred Vested	480	489
	Retirees and Beneficiaries	6,393	6,468
	TOTAL	12,734	13,108
Plan Liabilities	Actuarial Accrued Liability:		
	Active Members	$ 1,413,465,543	$ 1,433,472,176
	DRSP/DROP	129,653,482	153,884,982
	Deferred Vested	33,332,394	35,543,402
	Retirees and Beneficiaries	2,626,181,723	2,711,396,238
	TOTAL	$ 4,202,633,142	$ 4,334,296,798
	Actuarial Value of Assets at Valuation Date	$ 3,968,497,692	$ 4,149,354,330
	Unfunded (Overfunded) Actuarial Accrued Liability	$ 234,135,450	$ 184,942,468
	Funded Position of Plan's Actuarial Accrued Liability [1]	94.4 %	95.7 %

		Fiscal Year 2019	Fiscal Year 2020
Recommended Annual Contribution Requirements [2]			
	Annual Normal Cost as of Valuation Date	$ 74,269,457	$ 77,383,488
	Normal Cost Expense Load	3,109,500	3,174,700
	Amortization Payment	30,669,473	27,714,338
	Total Annual Required Contribution	108,048,430	108,272,526
	Expected Employee Contributions	25,437,890	26,349,166
	County Contribution Requirement	$ 82,610,540	$ 81,923,360
	Contribution Basis Payroll:		
	For Normal Cost	$ 422,892,361	$ 444,232,854
	For Amortization of Unfunded Liability	$ 424,546,915	$ 448,889,802
	County Contribution % of Payroll		
	Public Safety	20.42%	19.88%
	Non-Public Safety	42.08%	43.38%
	GRIP	5.74%	5.93%

[1] *Equals the ratio of the actuarial value of assets to the total actuarial accrued liability.*

[2] *Includes the Retirement Incentive cost. Excludes the non-GRIP outside agency unfunded liability contribution of $1,261,270. Includes the GRIP outside agency estimated normal cost and unfunded liability contribution and the non-GRIP estimated normal cost contribution of $598,114. County estimated contribution is $81,325,246.*

Contribution Rate Summary
All Plans

	Valuation as of July 1, 2018											July 1, 2017
	Non-Public Safety			Public Safety								
	Group A	Group H	Total Non PS	Group E	Group J	Group F	Group G	Total PS	GRIP	Total	Total Agency	Total
County Contribution Requirement ($)												
Non-GRIP	$ 14,468,108	$ 14,522,804	$ 28,990,912	$ 3,952,781	$ 1,412,694	$ 15,876,340	$ 24,745,023	$ 45,986,838	$ -	$ 74,977,750	$ 1,391,762	$ 77,205,528
GRIP	-	-	-	-	-	-	-	-	8,206,880	8,206,880	467,623	6,650,009
Total All Plans	$ 14,468,108	$ 14,522,804	$ 28,990,912	$ 3,952,781	$ 1,412,694	$ 15,876,340	$ 24,745,023	$ 45,986,838	$ 8,206,880	$ 83,184,630	$ 1,859,384	$ 83,855,537
County Normal Cost Contribution Requirement (% of Payroll)												
Non-GRIP	5.63%	5.56%	5.59%	13.88%	14.20%	18.15%	19.01%	17.72%		14.75%	5.63%	14.44%
GRIP									6.63%	6.63%	6.63%	6.63%
Total All Plans	5.63%	5.56%	5.59%	13.88%	14.20%	18.15%	19.01%	17.72%	6.63%	12.20%		12.28%
County UAL Contribution Requirement (% of Payroll)												
Non-GRIP	35.80%	39.75%	37.79%	-1.39%	-0.41%	-1.97%	8.34%	2.16%		9.49%	NA	10.50%
GRIP									-0.70%	-0.70%	-0.70%	-0.89%
Total All Plans	35.80%	39.75%	37.79%	-1.39%	-0.41%	-1.97%	8.34%	2.16%	-0.70%	6.17%	NA	7.22%
Total County Contribution Requirement (% of Payroll)												
Non-GRIP	41.43%	45.31%	43.38%	12.49%	13.79%	16.18%	27.35%	19.88%		24.24%	NA	24.94%
GRIP									5.93%	5.93%	5.93%	5.74%
Total All Plans	41.43%	45.31%	43.38%	12.49%	13.79%	16.18%	27.35%	19.88%	5.93%	18.37%	NA	19.50%

	Valuation as of July 1, 2017											July 1, 2016
	Non-Public Safety			Public Safety								
	Group A	Group H	Total Non PS	Group E	Group J	Group F	Group G	Total PS	GRIP	Total	Total Agency	Total
County Contribution Requirement ($)												
Non-GRIP	$ 15,139,161	$ 16,203,123	$ 31,342,284	$ 4,233,596	$ 1,531,864	$ 16,374,247	$ 23,723,537	$ 45,863,244	$ -	$ 77,205,528	$ 1,414,517	$ 83,621,952
GRIP	-	-	-	-	-	-	-	-	6,650,009	6,650,009	380,618	5,484,576
Total All Plans	$ 15,139,161	$ 16,203,123	$ 31,342,284	$ 4,233,596	$ 1,531,864	$ 16,374,247	$ 23,723,537	$ 45,863,244	$ 6,650,009	$ 83,855,537	$ 1,795,135	$ 89,106,528
County Normal Cost Contribution Requirement (% of Payroll)												
Non-GRIP	5.74%	5.55%	5.65%	13.88%	14.25%	18.07%	19.08%	17.69%		14.44%	5.74%	14.10%
GRIP									6.63%	6.63%	6.63%	6.62%
Total All Plans	5.74%	5.55%	5.65%	13.88%	14.25%	18.07%	19.08%	17.69%	6.63%	12.28%		12.24%
County UAL Contribution Requirement (% of Payroll)												
Non-GRIP	33.57%	39.18%	36.43%	-0.22%	-0.13%	-0.99%	8.39%	2.73%		10.50%	NA	13.38%
GRIP									-0.89%	-0.89%	-0.89%	-1.16%
Total All Plans	33.57%	39.18%	36.43%	-0.22%	-0.13%	-0.99%	8.39%	2.73%	-0.89%	7.22%	NA	9.60%
Total County Contribution Requirement (% of Payroll)												
Non-GRIP	39.31%	44.73%	42.08%	13.66%	14.12%	17.08%	27.47%	20.42%		24.94%	NA	27.48%
GRIP									5.74%	5.74%	5.74%	5.46%
Total All Plans	39.31%	44.73%	42.08%	13.66%	14.12%	17.08%	27.47%	20.42%	5.74%	19.50%	NA	21.84%

Beginning in fiscal year 2017 for non-GRIP members, outside agencies will make normal cost contributions for their active employees (based on payroll) plus a level dollar amortization payment of $1,261,270. The level dollar amortization payment will be made for 20 years (10 years for Strathmore Hall and Washington Suburban Transit Commission) and is not based on payroll. There are 17 years remaining in the 20-year closed amortization period, and 7 years remaining in the 10-year closed amortization period, as of July 1, 2018.
The unfunded liability for the non-Public Safety groups was amortized over a single nine-year closed period and the unfunded liability for the Public Safety groups and GRIP was amortized over separate 20-year closed periods beginning July 1, 2015.

Actuarial Valuation Results
All Plans

	Valuation as of July 1, 2018									July 1, 2017	
	Non-Public Safety		Public Safety								
	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total	% of Payroll	Total	% of Payroll
Total All Plans											
Active Members											
Number	381	516	461	128	1,237	1,155	2,126	6,004		5,738	
Average Age	58.8	59.0	41.8	47.0	39.3	38.7	47.3	45.3		45.6	
Average Service	28.8	27.2	11.2	14.3	13.5	12.2	7.2	13.0		13.6	
Total Base Payroll	$ 41,794,810	$ 39,614,015	$ 33,491,197	$ 11,008,571	$ 103,172,843	$ 92,854,752	$ 146,038,261	$ 467,974,450		$ 444,274,516	
Contribution Basis Payroll:											
For Normal Cost	$ 38,282,457	$ 36,383,955	$ 31,836,827	$ 10,264,686	$ 98,717,858	$ 89,452,250	$ 139,294,821	$ 444,232,854		$ 422,892,361	
For Amortization of Unfunded Liability*	30,872,512	31,451,664	33,491,197	11,008,571	103,172,843	92,854,752	146,038,261	448,889,802		424,546,915	
DRSP/DROP Members											
Number			39		47	61		147		123	
Total Base Payroll			$ 4,004,273		$ 5,189,627	$ 6,790,733		$ 15,984,633		$ 12,874,926	
Total Benefits			2,273,057		3,581,771	4,229,341		10,084,168		8,447,482	
Terminated Vested Members											
Number	49	56	34		36	18	296	489		480	
Total Benefits (non-GRIP)	$ 489,648	$ 428,839	$ 520,053		$ 361,740	$ 163,178		$ 1,963,458		$ 2,172,593	
Retired Members and Beneficiaries											
Number							3	6,468		6,393	
Total Benefits							$ 22,477	$ 245,455,253		$ 236,691,546	
Total Membership								13,108		12,734	
Actuarial Accrued Liability											
Active Members	$ 209,756,089	$ 172,057,270	$ 112,501,916	$ 41,801,306	$ 420,958,059	$ 346,786,057	$ 129,611,479	$ 1,433,472,176		$ 1,413,465,543	
DRSP/DROP Members			34,062,061		53,711,897	66,111,024		153,884,982		129,653,482	
Terminated Vested Members	4,362,176	3,788,500	4,692,591		3,179,666	925,139	18,595,330	35,543,402		33,332,394	
Retired Members and Beneficiaries	745,442,031	551,463,788	249,586,548	5,812,408	628,865,237	530,032,621	193,605	2,711,396,238		2,626,181,723	
Total	959,560,296	727,309,558	400,843,116	47,613,714	1,106,714,859	943,854,841	148,400,414	4,334,296,798		4,202,633,142	
Actuarial Value of Assets	$ 887,073,773	$ 659,335,115	$ 408,328,251	$ 48,229,035	$ 1,136,505,952	$ 848,902,515	$ 160,979,689	$ 4,149,354,330		$ 3,968,497,692	
Unfunded Actuarial Accrued Liability	$ 72,486,523	$ 67,974,443	$ (7,485,135)	$ (615,321)	$ (29,791,093)	$ 94,952,326	$ (12,579,275)	$ 184,942,468		$ 234,135,450	
Outside Agency Non-GRIP Unfunded Liability	12,392,507	-	-	-	-	-	-	12,392,507		12,990,249	
Net Unfunded Actuarial Accrued Liability	60,094,016	67,974,443	(7,485,135)	(615,321)	(29,791,093)	94,952,326	(12,579,275)	172,549,961		221,145,201	
Funded Ratio (Actuarial Value of Assets)	92.4%	90.7%	101.9%	101.3%	102.7%	89.9%	108.5%	95.7%		94.4%	
Annual Gross Normal Cost											
Benefits	$ 4,034,530	$ 3,827,591	$ 6,319,074	$ 2,060,296	$ 23,665,062	$ 22,863,316	$ 14,613,619	$ 77,383,488	(17.42%)	$ 74,269,457	(17.56%)
Expenses of Administration	464,545	381,054	249,157	92,577	932,293	768,024	287,050	3,174,700	(0.71%)	3,109,500	(0.74%)
Total	4,499,075	4,208,645	6,568,231	2,152,873	24,597,355	23,631,340	14,900,669	80,558,188	(18.13%)	77,378,957	(18.30%)
Amortization of Unfunded Liability [1]	$ 11,052,131	$ 12,501,449	$ (465,113)	$ (44,449)	$ (2,045,348)	$ 7,742,864	$ (1,027,196)	$ 27,714,338	(6.17%)	$ 30,669,473	(7.22%)
Annual Contribution Requirement:											
County Portion	$ 13,206,838	$ 14,522,804	$ 3,952,781	$ 1,412,694	$ 15,876,340	$ 24,745,023	$ 8,206,880	$ 81,923,360	(18.37%)	$ 82,610,540	(19.50%)
Employee Portion	2,344,368	2,187,290	2,150,337	695,730	6,675,667	6,629,181	5,666,593	26,349,166	(5.93%)	25,437,890	(6.02%)
Total	15,551,206	16,710,094	6,103,118	2,108,424	22,552,007	31,374,204	13,873,473	108,272,526	(24.30%)	108,048,430	(25.52%)
Non-Public Safety/Public Safety/GRIP County Portion		$ 27,729,642				$ 45,986,838	$ 8,206,880				
*Excludes Non-GRIP Payroll from Outside Agencies											
Outside Agency UAL Payroll	$ 1,930,247										

[1] *Amortization bases established prior to the July 1, 2015, actuarial valuation were recombined into a single amortization base equal to the total unfunded liability as of July 1, 2015. Beginning July 1, 2015, amortization of the current and future unfunded liability will occur over a single closed period of nine years for the non-Public Safety groups and separate closed 20-year amortization periods for the Public Safety groups and GRIP.*

Actuarial Valuation Results
Outside Agencies

Valuation as of July 1, 2018

Non-GRIP	Assessment and Taxation	Circuit Court	CRU 92 Credit Union	District Court	Housing Opportunities Commission	Revenue Authority	Strathmore Hall	Town of Chevy Chase	Washington Suburban Transit Commission	Total Agency (Excluding GRIP)	Total Non-Agency (Excluding GRIP)	Total ERS (Excluding GRIP)
Actuarial Accrued Liability												
Active Members (Non-GRIP)	$ -	$ 606,635	$ 644,039	$ -	$ 8,392,980	$ 493,210	$ 2,626,414	$ -	$ -	$ 12,763,278	$ 1,291,097,419	$ 1,303,860,697
DRSP/DROP Members	-	-	-	-	-	-	-	-	-	-	153,884,982	153,884,982
Terminated Vested Members	-	-	-	-	1,320,290	-	-	29,238	-	1,349,528	15,598,544	16,948,072
Retired Members and Beneficiaries	12,578,747	1,031,628	2,566,026	1,419,446	41,174,331	4,224,356	609,296	1,066,971	249,898	64,920,700	2,646,281,933	2,711,202,633
Total	$ 12,746,604	$ 1,652,374	$ 3,203,681	$ 1,443,596	$ 49,208,023	$ 4,425,101	$ 3,429,478	$ 1,097,369	$ 252,316	$ 79,033,506	$ 4,106,862,878	$ 4,185,896,384
Actuarial Accrued Liability by Group												
Group A	$ 12,746,604	$ 1,652,374	$ 3,203,681	$ 1,443,596	$ 49,208,023	$ 4,425,101	$ 3,429,478	$ 1,097,369	$ 252,316	$ 79,033,506		
Remaining Unfunded Actuarial Accrued Liability												
Non-GRIP	$2,138,712	$ 78,242	$ 708,607	$ 375,398	$ 7,649,160	$ 932,015	$422,113	$ -	$88,260	$ 12,392,507	$ 185,129,236	$ 197,521,743
Closed Level Dollar Amortization of Unfunded Actuarial Accrued Liability[1]												
Non-GRIP	$ 210,887	$ 7,715	$ 69,872	$ 37,016	$ 754,243	$ 91,901	$ 74,135	$ -	$ 15,501	$ 1,261,270		
Contribution Basis Payroll:												
For Normal Cost (Non-GRIP)	$ -	$ 65,973	$ 118,299	$ -	$ 1,638,931	$ 87,436	$ 407,154	$ -	$ -	$ 2,317,793	$ 302,620,240	304,938,033
Normal Cost Contribution Requirement (% of Payroll)	5.63%	5.63%	5.63%	5.63%	5.63%	5.63%	5.63%	5.63%	5.63%	5.63%		
Estimated Normal Cost $ Contribution Requirement	$ -	$ 3,714	$ 6,660	$ -	$ 92,272	$ 4,923	$ 22,923	$ -	$ -	$ 130,492	$ 44,844,454	$ 44,974,946
Actual $ UAL Contribution Requirement	210,887	7,715	69,872	37,016	754,243	91,901	74,135	-	15,501	1,261,270	28,741,534	30,002,804
Estimated Total $ Contribution Requirement	$ 210,887	$ 11,429	$ 76,532	$ 37,016	$ 846,515	$ 96,824	$ 97,058	$ -	$ 15,501	$ 1,391,762	$ 73,585,988	$ 74,977,750

[1]*For Strathmore Hall and Washington Suburban Transit Commission, the remaining amortization period is 7.0 years as of July 1, 2018. Chevy Chase paid off its remaining unfunded liability and therefore has no remaining balance as of July 1, 2018. For all other agencies, the remaining amortization period is 17.0 years as of July 1, 2018.*

Beginning in fiscal year 2017 for non-GRIP members, outside agencies will make normal cost contributions for their active employees (based on payroll) plus the level dollar amortization payment shown above. The level dollar amortization payment will be made for 20 years (10 years for Strathmore Hall and Washington Suburban Transit Commission) and is not based on payroll. Contributions for GRIP members will continue to be made based on the contribution rates determined in the actuarial valuations and actual payroll. Contribution basis payroll for normal cost that is shown is the fiscal year 2019 amount. Actual projected payroll for non-GRIP for fiscal year 2020 may be lower than the amount shown (or $0 if there are no remaining active members).

Actuarial Valuation Results
Outside Agencies

Valuation as of July 1, 2018

GRIP	Assessment and Taxation	Circuit Court	CRU 92 Credit Union	District Court	Housing Opportunities Commission	Revenue Authority	Strathmore Hall	Town of Chevy Chase	Washington Suburban Transit Commission	Total Agency (GRIP)	Total Non-Agency (GRIP)	Total ERS (GRIP)
Actuarial Accrued Liability												
Active Members (GRIP)	$ -	$ 76,237	$ -	$ -	$ 5,641,124	$ 151,513	$ 182,625	$ 193,963	$ -	$ 6,245,462	$ 123,366,017	$ 129,611,479
Terminated Vested Members	-	-	-	-	274,642	-	2,749	-	-	277,391	18,317,939	18,595,330
Retired Members and Beneficiaries	-	-	-	-	-	-	-	-	-	-	193,605	193,605
Total	$ -	$ 76,237	$ -	$ -	$ 5,915,766	$ 151,513	$ 185,374	$ 193,963	$ -	$ 6,522,853	$ 141,877,561	$ 148,400,414
Unfunded Actuarial Accrued Liability (GRIP)	$ -	$ (6,462)	$ -	$ -	$ (501,454)	$ (12,843)	$ (15,713)	$ (16,441)	$ -	$ (552,913)	$ (12,026,362)	$ (12,579,275)
Contribution Basis Payroll:												
For Normal Cost (GRIP)	$ -	$ 45,783	$ -	$ -	$ 7,095,735	$ 211,419	$ 540,344	$ 35,942	$ -	$ 7,929,223	$ 131,365,598	$ 139,294,821
For Amortization of Unfunded Liability (GRIP)	$ -	$ 51,064	$ -	$ -	$ 7,429,687	$ 221,876	$ 558,546	$ 36,674	$ -	$ 8,297,848	$ 137,740,414	$ 146,038,261
Normal Cost Contribution Requirement (% of Payroll)	6.63%	6.63%	6.63%	6.63%	6.63%	6.63%	6.63%	6.63%	6.63%			
UAL Contribution Requirement (% of Payroll)	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%			
Estimated Normal Cost $ Contribution Requirement	$ -	$ 3,035	$ -	$ -	$ 470,447	$ 14,017	$ 35,825	$ 2,383	$ -	$ 525,707	$ 8,708,369	$ 9,234,076
Estimated $ UAL Contribution Requirement	-	(357)	-	-	(52,008)	(1,553)	(3,910)	(257)	-	(58,085)	(969,111)	(1,027,196)
Estimated Total $ Contribution Requirement	$ -	$ 2,678	$ -	$ -	$ 418,439	$ 12,464	$ 31,915	$ 2,126	$ -	$ 467,623	$ 7,739,257	$ 8,206,880
Total Non-GRIP and GRIP										Total Agency	Total Non-Agency	Total ERS
Fixed Closed Level Dollar Amortization Payment	$ 210,887	$ 7,715	$ 69,872	$ 37,016	$ 754,243	$ 91,901	$ 74,135	$ -	$ 15,501	$ 1,261,270		
Estimated $ Contribution for Payroll Based Contribution	-	6,392	6,660	-	510,711	17,387	54,838	2,126	-	598,114		
Total Estimated Contribution	$ 210,887	$ 14,107	$ 76,532	$ 37,016	$ 1,264,954	$ 109,288	$ 128,973	$ 2,126	$ 15,501	$ 1,859,384	$ 81,325,246	$ 83,184,630
Unfunded Actuarial Accrued Liability (Based on Actuarial Value of Assets)												
Non-GRIP	$ 2,138,712	$ 78,242	$ 708,607	$ 375,398	$ 7,649,160	$ 932,015	$ 422,113	$ -	$ 88,260	$ 12,392,507	$ 185,129,236	$ 197,521,743
GRIP	-	(6,462)	-	-	(501,454)	(12,843)	(15,713)	(16,441)	-	(552,913)	(12,026,362)	(12,579,275)
Total	$ 2,138,712	$ 71,780	$ 708,607	$ 375,398	$ 7,147,706	$ 919,172	$ 406,400	$ (16,441)	$ 88,260	$ 11,839,594	$ 173,102,874	$ 184,942,468

Beginning in fiscal year 2017 for non-GRIP members, outside agencies will make normal cost contributions for their active employees (based on payroll) plus the level dollar amortization payment shown above. The level dollar amortization payment will be made for 20 years (10 years for Strathmore Hall and Washington Suburban Transit Commission) and is not based on payroll. Contributions for GRIP members will continue to be made based on the contribution rates determined in the actuarial valuations and actual payroll. Contribution basis payroll for normal cost that is shown is the fiscal year 2019 amount. Actual projected payroll for non-GRIP for fiscal year 2020 may be lower than the amount shown (or $0 if there are no remaining active members).

Actuarial Valuation Results
Guaranteed Retirement Income Plan (GRIP)

	Valuation as of July 1, 2018							July 1, 2017	
	Agency								
	CC	CM	CN	CP	CZ	Total GRIP		Total	
<u>Total All Plans</u>									
Active Members									
Number	2	1,513	599	4	8	2,126		1,772	
Average Age	57.5	46.2	49.9	59.8	59.6	47.3		47.9	
Average Service	1.6	6.6	8.4	15.1	9.8	7.2		7.6	
Total Base Payroll	$ 107,132	$ 88,228,650	$ 55,990,061	$ 622,354	$ 1,090,064	$ 146,038,261		$ 122,345,446	
Contribution Basis Payroll:									
For Normal Cost	$ 104,826	$ 84,291,286	$ 53,307,354	$ 576,070	$ 1,015,285	$ 139,294,821		$ 116,749,876	
For Amortization of Unfunded Liability	107,132	88,228,651	55,990,061	622,354	1,090,064	146,038,262		122,345,447	
Terminated Members									
Number	1	176	118	1		296		266	
Retired Members and Beneficiaries									
Number		2	1			3		3	
Total Benefits		8,811	13,666			22,477		22,477	
Total Membership	3	1,691	718	5	8	2,425		2,041	
Actuarial Accrued Liability									
Active Members	$ 7,292	$ 67,619,058	$ 59,278,276	$ 1,461,542	$ 1,245,311	$ 129,611,479		$ 111,490,454	
Terminated Vested Members	101,277	8,635,204	9,707,939	150,910	-	18,595,330		15,434,406	
Retired Members and Beneficiaries	-	86,199	107,406	-	-	193,605		198,213	
Total	108,569	76,340,461	69,093,621	1,612,452	1,245,311	148,400,414		127,123,073	
Actuarial Value of Assets	$ 117,772	$ 82,811,517	$ 74,950,395	$ 1,749,133	$ 1,350,871	$ 160,979,689		$ 141,240,462	
Unfunded Actuarial Accrued Liability	$ (9,203)	$ (6,471,056)	$ (5,856,774)	$ (136,681)	$ (105,560)	$ (12,579,275)		$ (14,117,389)	
Funded Ratio (Actuarial Value of Assets)	108.5%	108.5%	108.5%	108.5%	108.5%	108.5%		111.1%	
Annual Gross Normal Cost									
Benefits	$ 11,271	$ 8,825,098	$ 5,603,787	$ 68,122	$ 105,341	$ 14,613,619	(10.49%)	$ 12,251,806	(10.49%)
Expenses of Administration	210	147,665	133,647	3,119	2,409	287,050	(0.21%)	245,269	(0.21%)
Total	11,481	8,972,763	5,737,434	71,241	107,750	14,900,669	(10.70%)	12,497,075	(10.70%)
Amortization of Unfunded Liability	$ (751)	$ (528,412)	$ (478,252)	$ (11,161)	$ (8,620)	$ (1,027,196)	-(0.70%)	$ (1,093,183)	-(0.89%)
Annual Contribution Requirement:									
County Portion	$ 6,537	$ 5,072,700	$ 3,033,244	$ 38,044	$ 56,355	$ 8,206,880	(5.93%)	$ 6,650,009	(5.74%)
Employee Portion	4,193	3,371,651	2,225,938	22,036	42,775	5,666,593	(4.07%)	4,753,883	(4.07%)
Total	10,730	8,444,351	5,259,182	60,080	99,130	13,873,473	(10.00%)	11,403,892	(9.81%)
Non-Public Safety County Portion						$ 8,168,836	(5.92%)	$ 6,612,396	(5.74%)
Public Safety County Portion (Agency CP)						$ 38,044	(6.75%)	$ 37,613	(6.44%)

Actuarial Valuation Results
Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments
By Group

Non-Public Safety

Base Year	Description	Unfunded Liability Base [1] Group A	Unfunded Liability Base [1] Group H	Unfunded Liability Base [1] Total	Remaining Financing Period	Amortization Factor	Amortization Payment Group A	Amortization Payment Group H	Amortization Payment Total
2015	Pre FY 2015 Retirement Incentive	$ 7,563,145	$ 10,368,178	$ 17,931,323	6 yrs.	5.437325	$ 1,390,968	$ 1,906,853	$ 3,297,821
2015	Pre FY 2015 Plan Experience	61,338,794	67,187,023	128,525,817	6	5.437325	11,281,062	12,356,633	23,637,695
2015	Pre FY 2015 Plan Changes	23,845,869	32,736,317	56,582,186	6	5.437325	4,385,589	6,020,666	10,406,255
2015	Pre FY 2015 Cost Method Changes	5,718,556	4,440,493	10,159,049	6	5.437325	1,051,722	816,669	1,868,391
2015	FY 2015 Plan Experience	(41,743,147)	(24,483,564)	(66,226,711)	6	5.437325	(7,677,148)	(4,502,870)	(12,180,018)
2015	FY 2015 Assumption and Method Changes	22,313,952	14,324,736	36,638,688	6	5.437325	4,103,848	2,634,519	6,738,367
2015	FY 2015 Plan Changes	-	-	-	6	5.437325	-	-	-
2016	FY 2016 Plan Experience	(619,395)	(6,498,273)	(7,117,668)	6	5.437325	(113,915)	(1,195,124)	(1,309,039)
2017	FY 2017 Plan Experience	(14,037,143)	(19,704,778)	(33,741,921)	6	5.437325	(2,581,627)	(3,623,984)	(6,205,611)
2018	FY 2018 Plan Experience	(4,286,615)	(10,395,689)	(14,682,304)	6	5.437325	(788,368)	(1,911,913)	(2,700,281)
Unfunded Liability		$ 60,094,016	$ 67,974,443	$ 128,068,459	6.0 yrs.	5.437325	$ 11,052,131	$ 12,501,449	$ 23,553,580

[1] *Unfunded liability for Non-Public Safety group excludes Outside Agency Non-GRIP unfunded liability of $12,392,507.*

Public Safety

Base Year	Description	Unfunded Liability Base Group E	Unfunded Liability Base Group J	Unfunded Liability Base Group F	Unfunded Liability Base Group G	Unfunded Liability Base Total	Remaining Financing Period	Amortization Factor	Amortization Payment Group E	Amortization Payment Group J	Amortization Payment Group F	Amortization Payment Group G	Amortization Payment Total
2015	Pre FY 2015 Retirement Incentive	$ 1,042,016	$ -	$ -	$ -	$ 1,042,016	17 yrs.	12.553025	$ 83,009	$ -	$ -	$ -	$ 83,009
2015	Pre FY 2015 Plan Experience	37,918,302	-	111,400,708	112,980,684	262,299,694	17	12.553025	3,020,651	-	8,874,411	9,000,275	20,895,337
2015	Pre FY 2015 Plan Changes	3,387,229	-	(1,636,073)	70,119,427	71,870,583	17	12.553025	269,834	-	(130,333)	5,585,859	5,725,360
2015	Pre FY 2015 Cost Method Changes	208,169	-	351,410	1,328,817	1,888,396	17	12.553025	16,583	-	27,994	105,857	150,434
2015	FY 2015 Plan Experience	(22,789,198)	-	(59,394,125)	(40,305,182)	(122,488,505)	17	12.553025	(1,815,435)	-	(4,731,459)	(3,210,794)	(9,757,688)
2015	FY 2015 Assumption and Method Changes	(8,017,217)	-	(18,330,948)	(8,125,490)	(34,473,655)	17	12.553025	(638,668)	-	(1,460,282)	(647,293)	(2,746,243)
2015	FY 2015 Plan Changes	4,531,881	-	-	-	4,531,881	17	12.553025	361,019	-	-	-	361,019
2016	FY 2016 Plan Experience	(7,430,864)	-	(24,913,512)	(20,807,053)	(53,151,429)	18	13.056743	(569,121)	-	(1,908,095)	(1,593,587)	(4,070,803)
2017	FY 2017 Plan Experience	(10,856,597)	(209,633)	(23,073,237)	(21,367,851)	(55,507,318)	19	13.540546	(801,784)	(15,482)	(1,704,011)	(1,578,064)	(4,099,341)
2018	FY 2018 Plan Experience	(5,478,856)	(405,688)	(14,195,316)	1,128,974	(18,950,886)	20	14.005222	(391,201)	(28,967)	(1,013,573)	80,611	(1,353,130)
Unfunded Liability		$ (7,485,135)	$ (615,321)	$ (29,791,093)	$ 94,952,326	$ 57,060,777	14.1 yrs.	10.998705	$ (465,113)	$ (44,449)	$ (2,045,348)	$ 7,742,864	$ 5,187,954

Actuarial Valuation Results
Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments
By Group

GRIP

Base Year	Description	Unfunded Liability Base GRIP	Remaining Financing Period		Amortization Factor	GRIP	Amortization Payment
2015	Pre FY 2015 Retirement Incentive	$ -	17	yrs.	12.553025	$ -	$ -
2015	Pre FY 2015 Plan Experience	(7,216,481)	17		12.553025	(574,880)	(574,880)
2015	Pre FY 2015 Plan Changes	(2,125,679)	17		12.553025	(169,336)	(169,336)
2015	Pre FY 2015 Cost Method Changes	2,242,734	17		12.553025	178,661	178,661
2015	FY 2015 Plan Experience	(3,424,367)	17		12.553025	(272,792)	(272,792)
2015	FY 2015 Assumption and Method Changes	(5,668,083)	17		12.553025	(451,531)	(451,531)
2015	FY 2015 Plan Changes	-	17		12.553025	-	-
2016	FY 2016 Plan Experience	(231,152)	18		13.056743	(17,704)	(17,704)
2017	FY 2017 Plan Experience	2,422,007	19		13.540546	178,871	178,871
2018	FY 2018 Plan Experience	1,421,746	20		14.005222	101,515	101,515
Unfunded Liability		$ (12,579,275)	16.4	yrs.	12.246226	$ (1,027,196)	$ (1,027,196)

Actuarial Valuation Results
Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments
By Group

Total

		Unfunded Liability Base[1]							
		Non-Public Safety		Public Safety					
Base Year	Description	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total
2015	Pre FY 2015 Retirement Incentive	$ 7,563,145	$ 10,368,178	$ 1,042,016	$ -	$ -	$ -	$ -	$ 18,973,339
2015	Pre FY 2015 Plan Experience	61,338,794	67,187,023	37,918,302	-	111,400,708	112,980,684	(7,216,481)	383,609,030
2015	Pre FY 2015 Plan Changes	23,845,869	32,736,317	3,387,229	-	(1,636,073)	70,119,427	(2,125,679)	126,327,090
2015	Pre FY 2015 Cost Method Changes	5,718,556	4,440,493	208,169	-	351,410	1,328,817	2,242,734	14,290,179
2015	FY 2015 Plan Experience	(41,743,147)	(24,483,564)	(22,789,198)	-	(59,394,125)	(40,305,182)	(3,424,367)	(192,139,583)
2015	FY 2015 Assumption and Method Changes	22,313,952	14,324,736	(8,017,217)	-	(18,330,948)	(8,125,490)	(5,668,083)	(3,503,050)
2015	FY 2015 Plan Changes	-	-	4,531,881	-	-	-	-	4,531,881
2016	FY 2016 Plan Experience	(619,395)	(6,498,273)	(7,430,864)	-	(24,913,512)	(20,807,053)	(231,152)	(60,500,249)
2017	FY 2017 Plan Experience	(14,037,143)	(19,704,778)	(10,856,597)	(209,633)	(23,073,237)	(21,367,851)	2,422,007	(86,827,232)
2018	FY 2018 Plan Experience	(4,286,615)	(10,395,689)	(5,478,856)	(405,688)	(14,195,316)	1,128,974	1,421,746	(32,211,444)
Unfunded Liability		$ 60,094,016	$ 67,974,443	$ (7,485,135)	$ (615,321)	$ (29,791,093)	$ 94,952,326	$ (12,579,275)	$ 172,549,961

				Amortization of Unfunded Liability Base							
		Remaining Financing	Amortization	Non-Public Safety		Public Safety					
Base Year	Description	Period	Factor	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total
2015	Pre FY 2015 Retirement Incentive	6.2 yrs.	5.612036	$ 1,390,968	$ 1,906,853	$ 83,009	$ -	$ -	$ -	$ -	$ 3,380,830
2015	Pre FY 2015 Plan Experience	10.5	8.726687	11,281,062	12,356,633	3,020,651	-	8,874,411	9,000,275	(574,880)	43,958,152
2015	Pre FY 2015 Plan Changes	9.3	7.914101	4,385,589	6,020,666	269,834	-	(130,333)	5,585,859	(169,336)	15,962,279
2015	Pre FY 2015 Cost Method Changes	7.4	6.502967	1,051,722	816,669	16,583	-	27,994	105,857	178,661	2,197,486
2015	FY 2015 Plan Experience	10.4	8.650845	(7,677,148)	(4,502,870)	(1,815,435)	-	(4,731,459)	(3,210,794)	(272,792)	(22,210,498)
2015	FY 2015 Assumption/Method Changes	(1.0)	(0.989396)	4,103,848	2,634,519	(638,668)	-	(1,460,282)	(647,293)	(451,531)	3,540,593
2015	FY 2015 Plan Changes	17.0	12.553026	-	-	361,019	-	-	-	-	361,019
2016	FY 2016 Plan Experience	14.5	11.208844	(113,915)	(1,195,124)	(569,121)	-	(1,908,095)	(1,593,587)	(17,704)	(5,397,546)
2017	FY 2017 Plan Experience	10.3	8.574614	(2,581,627)	(3,623,984)	(801,784)	(15,482)	(1,704,011)	(1,578,064)	178,871	(10,126,081)
2018	FY 2018 Plan Experience	9.6	8.150884	(788,368)	(1,911,913)	(391,201)	(28,967)	(1,013,573)	80,611	101,515	(3,951,896)
Amortization Payments		7.0 yrs.	6.226018	$ 11,052,131	$ 12,501,449	$ (465,113)	$ (44,449)	$ (2,045,348)	$ 7,742,864	$ (1,027,196)	$ 27,714,338

[1] *Unfunded liability for Non-Public Safety group excludes Outside Agency Non-GRIP unfunded liability of $12,392,507.*

Actuarial Valuation Results
Gain/Loss Analysis

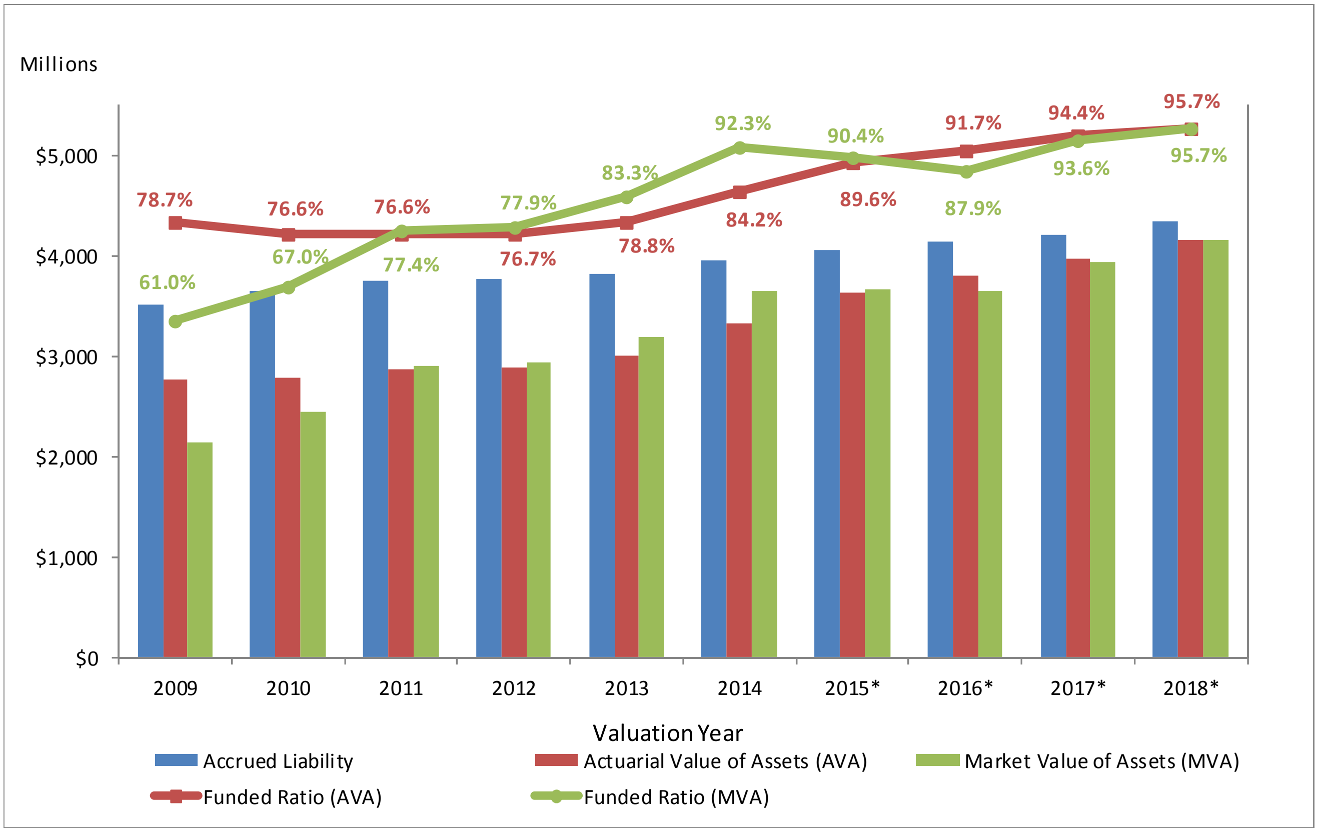
	Non-Public Safety	Public Safety	GRIP	Total
Unfunded liability at previous valuation	$ 171,209,127	$ 77,043,712	$ (14,117,389)	$ 234,135,450
Expected unfunded liability at current valuation				
Normal cost for plan year	9,686,352	55,195,530	12,497,075	77,378,957
Interest on unfunded liability and normal cost	13,197,356	7,810,692	(598,636)	20,409,412
Contributions with interest to current valuation date	37,377,552	64,038,271	11,782,071	113,197,894
Total expected change in unfunded liability at current valuation	(14,493,844)	(1,032,049)	116,368	(15,409,525)
Total expected unfunded liability at current valuation	156,715,283	76,011,663	(14,001,021)	218,725,925
Change due to:				
Recognition of asset (gains)/losses	(4,585,004)	(7,129,891)	(396,611)	(12,111,506)
Salary increases	(1,171,922)	9,039,970	-	7,868,048
COLA increases	(2,967,505)	(3,225,162)	-	(6,192,667)
Amount and timing of contributions	(5,416,558)	(5,012,100)	(1,642,659)	(12,071,317)
Demographic experience and other	(2,113,328)	(12,623,703)	3,461,016	(11,276,015)
Change in actuarial assumptions	-	-	-	-
Plan improvements	-	-	-	-
Measurement improvements	-	-	-	-
Total change	(16,254,317)	(18,950,886)	1,421,746	(33,783,457)
Unfunded liability at current valuation	$ 140,460,966	$ 57,060,777	$ (12,579,275)	$ 184,942,468

	County Contribution			Funded Status
	Non-Public Safety	Public Safety	GRIP	Total
FY 2019 County Contribution/July 1, 2017 Funded Ratio	42.08%	20.42%	5.74%	94.4%
FY 2020 County Contribution/Expected July 1, 2018 Funded Ratio	47.60%	20.44%	5.85%	95.0%
Change due to:				
Recognition of asset (gains)/losses	-1.35%	-0.21%	-0.02%	0.3%
Salary increases	-0.17%	0.24%	0.01%	-0.2%
COLA increases	-0.88%	-0.10%	0.00%	0.1%
Amount and timing of contributions	-1.60%	-0.15%	-0.08%	0.3%
Demographic experience and other	-0.22%	-0.34%	0.17%	0.2%
Measurement improvements	0.00%	0.00%	0.00%	0.0%
Plan improvements	0.00%	0.00%	0.00%	0.0%
Change in assumptions and amortization period	0.00%	0.00%	0.00%	0.0%
Total change	-4.22%	-0.56%	0.08%	0.7%
FY 2020 County Contribution/July 1, 2018 Funded Ratio	43.38%	19.88%	5.93%	95.7%

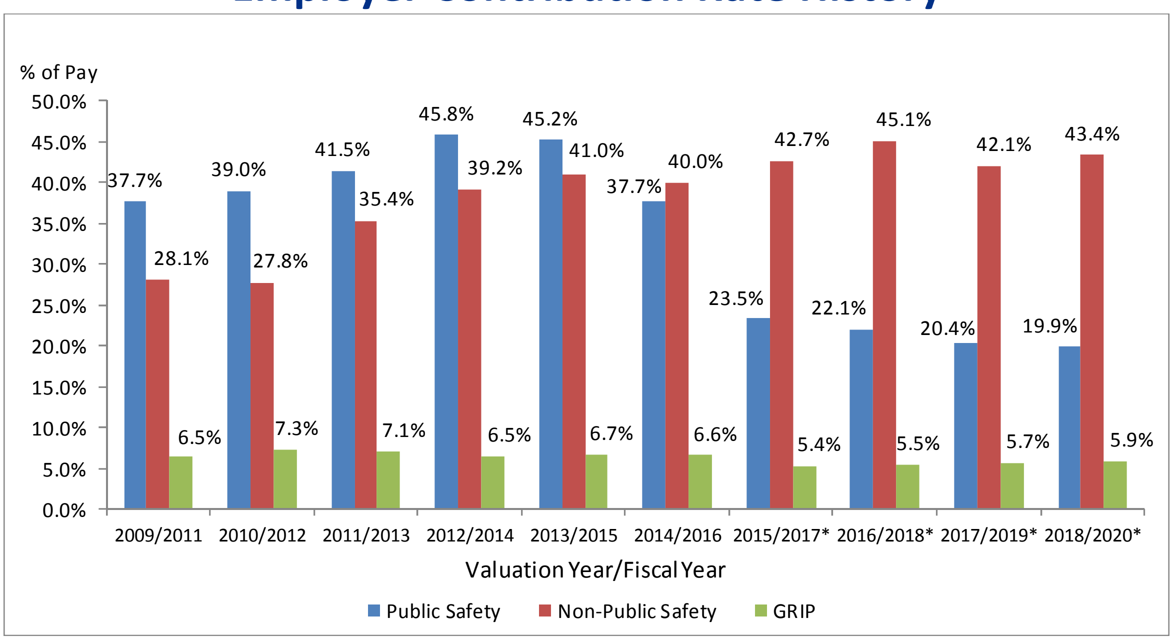
Demographic Experience and Other includes changes due to retirement, mortality, disability and termination experience that varied from the actuarial assumptions, and data changes.

Historical Trends of Funded Ratio and Employer Contributions

Funded Ratio History



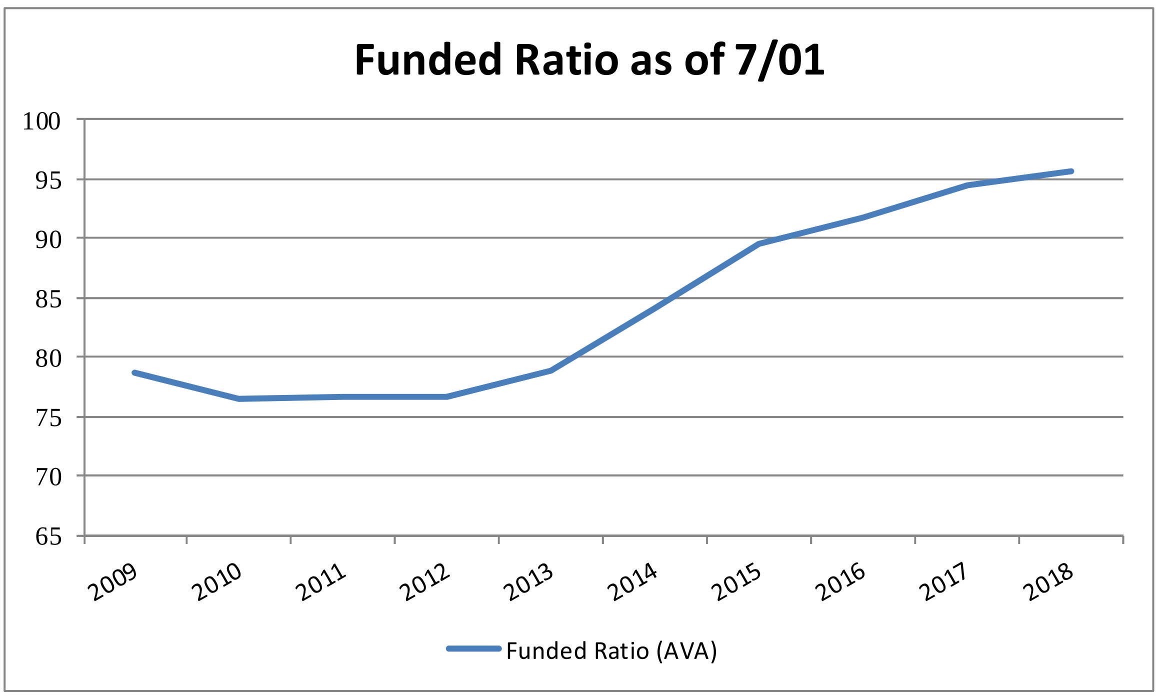
Employer Contribution Rate History



* *Results beginning with the 2015 valuation (FY 2017) include changes to amortization periods used to finance the unfunded liability and changes to the actuarial assumptions used in the valuation, based on the key findings from an experience review of the System for the period from July 1, 2009 to July 1, 2014.*

Funded Ratio History

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (AVA) (a / b)
7/1/2009	$2,766,230,073	$3,516,824,342	$750,594,269	78.7 %
7/1/2010	2,791,144,974	3,645,576,341	854,431,367	76.6
7/1/2011	2,869,422,276	3,744,713,474	875,291,198	76.6
7/1/2012	2,891,435,563	3,768,745,962	877,310,399	76.7
7/1/2013	3,012,547,244	3,821,380,732	808,833,488	78.8
7/1/2014	3,333,484,724	3,958,929,718	625,444,994	84.2
7/1/2015	3,630,075,610	4,050,736,852	420,661,242	89.6
7/1/2016	3,798,555,275	4,141,060,968	342,505,693	91.7
7/1/2017	3,968,497,692	4,202,633,142	234,135,450	94.4
7/1/2018	4,149,354,330	4,334,296,798	184,942,468	95.7



Actuarial Valuation Results
Solvency Test

Valuation Date 6/30	Total Actuarial Accrued Liability	(1) Active Member Contributions	(2) Retirees, Term Vested and Beneficiaries	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets (1)	(2)	(3)
2009	$3,516,824,342	$210,385,653	$ 1,892,331,796	$ 1,414,106,893	$2,766,230,073	100%	100%	47%
2010	3,645,576,341	213,191,851	2,054,949,883	1,377,434,607	2,791,144,974	100%	100%	38%
2011	3,744,713,474	237,074,023	2,181,816,842	1,325,822,609	2,869,422,276	100%	100%	34%
2012	3,768,745,962	210,537,737	2,465,714,392	1,092,493,833	2,891,435,563	100%	100%	20%
2013	3,821,380,732	248,331,006	2,526,844,154	1,046,205,572	3,012,547,244	100%	100%	23%
2014	3,958,929,718	265,055,643	2,585,446,584	1,108,427,491	3,333,484,724	100%	100%	44%
2015	4,050,736,852	280,135,577	2,698,040,722	1,072,560,553	3,630,075,610	100%	100%	61%
2016	4,141,060,968	297,715,372	2,747,575,831	1,095,769,765	3,798,555,275	100%	100%	69%
2017	4,202,633,142	314,707,102	2,789,167,599	1,098,758,441	3,968,497,692	100%	100%	79%
2018	4,334,296,798	327,611,097	2,900,824,622	1,105,861,079	4,149,354,330	100%	100%	83%

DRSP and DROP member liability included in item (2) with retirees beginning in 2012.

Results in 2009 and 2011 are measured as of July 1, and differ from the Comprehensive Annual Financial Report (CAFR). Results in the CAFR are as of June 30, and do not reflect the transfer of members effective July 1 of those years.

Statement of Fiduciary Net Position

	Fiscal Year Ending	
Assets	**June 30, 2017**	**June 30, 2018**
Equity in County's pooled cash and investments	$ 86,255	$ 2,014,964
Investments:		
Government and agency obligations	494,936,771	535,053,176
Municipal/Provincial obligations	8,802,535	8,431,521
Asset-backed securities	575,265	700,355
Corporate bonds	652,601,536	657,342,966
Collateralized mortgage obligations	938,220	379,768
Commercial mortgage-backed securities	1,636,717	2,283,013
Common and preferred stock	1,683,366,447	1,718,906,869
Mutual and commingled funds	444,710,885	488,075,930
Short-term investments	101,410,350	106,196,816
Cash collateral received under securities lending agreements	205,422,910	152,967,307
Private real assets	191,725,989	198,112,470
Private equity/debt	337,417,190	412,741,287
Total Investments	4,123,544,815	4,281,191,478
Dividend, interest, and other receivables	14,113,462	16,824,845
Contributions receivable	7,025,652	7,425,120
Net capital assets	-	-
Total assets	4,144,770,184	4,307,456,405
Liabilities		
Payable for collateral received under securities lending agreements	205,422,910	152,967,307
Benefit payable and other liabilities	5,841,863	5,181,657
Total liabilities	211,264,773	158,148,964
Net position restricted for pensions	$ 3,933,505,411	$ 4,149,307,441

Statement of Changes in Fiduciary Net Position
Total Employees' Retirement System (ERS)

	Fiscal Year Ending	
	June 30, 2017	**June 30, 2018**
Additions:		
Contributions:		
Employer	$ 95,398,957	$ 93,163,298
Members	27,940,416	28,964,769
Total contributions	123,339,373	122,128,067
Total income from investment activities	430,251,652	359,155,481
Less investment expenses	18,438,444	20,576,087
Net income from investment activities	411,813,208	338,579,394
Income from securities lending	2,895,806	3,867,343
Less securities lending expenses	1,362,310	2,362,243
Net income from securities lending	1,533,496	1,505,100
Total additions	536,686,077	462,212,561
Deductions:		
Retiree benefits	175,048,760	178,267,822
Disability benefits	50,741,385	50,864,259
Survivor benefits	9,334,089	9,783,701
Refunds and distributions	6,473,277	4,624,066
Administrative expenses	3,185,769	2,870,683
Total deductions	244,783,280	246,410,531
Net increase in net position	291,902,797	215,802,030
Net position restricted for pensions		
Beginning of year	3,641,602,614	3,933,505,411
End of year	$ 3,933,505,411	$ 4,149,307,441

Statement of Changes in Fiduciary Net Position
Allocation between GRIP and Non-GRIP Assets

	Fiscal Year Ending June 30, 2017	Fiscal Year Ending June 30, 2018		
	Total	**Non-GRIP**	**GRIP**	**Total**
Additions:				
Contributions:				
Employer	$ 95,398,957	$ 85,740,663	$ 7,422,635	$ 93,163,298
Members	27,940,416	23,439,445	5,525,324	28,964,769
Total contributions	123,339,373	109,180,108	12,947,959	122,128,067
Net investment income	413,346,704	327,382,793	12,701,701	340,084,494
Total additions	536,686,077	436,562,901	25,649,660	462,212,561
Deductions:				
Benefit Payments and distributions	241,597,511	239,276,003	4,263,845	243,539,848
Administrative expenses	3,185,769	2,657,622	213,061	2,870,683
Total deductions	244,783,280	241,933,625	4,476,906	246,410,531
Net increase in net position	291,902,797	194,629,276	21,172,754	215,802,030
Net position restricted for pensions				
Beginning of year	3,641,602,614	3,793,150,661	140,354,750	3,933,505,411
End of year	$ 3,933,505,411	$ 3,987,779,937	$ 161,527,504	$ 4,149,307,441

Net investment income is allocated using the estimated market value rate of return on total plan assets during the fiscal year (11.54% and 8.78% for fiscal years ending June 30, 2017, and June 30, 2018, respectively) and net non-investment cash flow and the market value of assets from the prior fiscal year end for the respective GRIP and Non-GRIP groups.

Development of Actuarial Value of Assets (Total ERS)

Fiscal Year Ending	2017	2018	2019	2020	2021	2022
Beginning of Year:						
(1) Market Value of Assets	$ 3,641,602,614	$ 3,933,505,411				
(2) Actuarial Value of Assets	3,798,555,275	3,968,497,692				
End of Year:						
(3) Market Value of Assets	3,933,505,411	4,149,307,441				
(4a) Contributions	123,339,373	122,128,067				
(4b) Net Disbursements	244,783,280	246,410,531				
(5) Total Investment Income						
=(3)-(1)-(4a)+(4b)	413,346,704	340,084,494				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
=(1)x(6)+([1+(6)]^.5-1)x(4a-4b)	268,648,380	290,436,569				
(8) Asset Adjustment	-	-				
(9) Investment Income in						
Excess of Projected Income	144,698,324	49,647,925				
(10) Excess Investment Income Recognized						
This Year (5 year recognition)						
(10a) From This Year	$ 28,939,665	$ 9,929,585				
(10b) From One Year Ago	(42,817,237)	28,939,665	$ 9,929,585			
(10c) From Two Years Ago	(40,949,749)	(42,817,237)	28,939,665	$ 9,929,585		
(10d) From Three Years Ago	59,600,269	(40,949,749)	(42,817,237)	28,939,665	$ 9,929,585	
(10e) From Four Years Ago	17,964,996	59,600,269	(40,949,750)	(42,817,236)	28,939,664	$ 9,929,585
(10f) Total Recognized Investment Gain/(Loss)	22,737,944	14,702,533	(44,897,737)	(3,947,986)	38,869,249	9,929,585
(11) Change in Actuarial Value of Assets						
=(4a)-(4b)+(7)+(8)+(10f)	169,942,417	180,856,638				
End of Year:						
(3) Market Value of Assets	**$ 3,933,505,411**	**$ 4,149,307,441**				
(12) Final Actuarial Value of Assets as of 6/30 = (2)+(11)	**$ 3,968,497,692**	**$ 4,149,354,330**				
(13) Difference Between Market & Actuarial Values	(34,992,281)	(46,889)				
(14) Estimated Market Value Rate of Return on Total Plan Assets	11.54%	8.78%				
(15) Estimated Market Value Return on Invested Plan Assets [1]	11.65%	8.57%				
(16) Actuarial Value Rate of Return	7.80%	7.81%				
(17) Ratio of Actuarial Value to Market Value	101%	100%				

[1] *Rate calculated and provided by the County.*

Development of Actuarial Value of Assets
(Assets Allocated to GRIP)

Fiscal Year Ending	2017	2018	2019	2020	2021	2022
Beginning of Year:						
(1) Market Value of Assets	$ 120,131,182	$ 140,354,750				
(2) Actuarial Value of Assets	125,495,390	141,240,462				
End of Year:						
(3) Market Value of Assets	140,354,750	161,527,504				
(4a) Contributions	10,914,263	12,947,959				
(4b) Net Disbursements	4,904,486	4,476,906				
(5) Total Investment Income						
=(3)-(1)-(4a)+(4b)	14,213,791	12,701,701				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
=(1)x(6)+([1+(6)]^.5-1)x(4a-4b)	9,231,131	10,838,528				
(8) Asset Adjustment	-	-				
(9) Investment Income in						
Excess of Projected Income	4,982,660	1,863,173				
(10) Excess Investment Income Recognized						
This Year (5-year recognition)						
(10a) From This Year	$ 996,532	$ 372,635				
(10b) From One Year Ago	(1,361,821)	996,532	$ 372,635			
(10c) From Two Years Ago	(1,208,679)	(1,361,821)	996,532	$ 372,635		
(10d) From Three Years Ago	1,630,977	(1,208,679)	(1,361,821)	996,532	$ 372,635	
(10e) From Four Years Ago	447,155	1,630,979	(1,208,677)	(1,361,821)	996,532	$ 372,633
(10f) Total Recognized Investment Gain/(Loss)	504,164	429,646	(1,201,331)	7,346	1,369,167	372,633
(11) Change in Actuarial Value of Assets						
=(4a)-(4b)+(7)+(8)+(10f)	15,745,072	19,739,227				
End of Year:						
(3) Market Value of Assets	**$ 140,354,750**	**$ 161,527,504**				
(12) Final Actuarial Value of Assets as of 6/30 = (2)+(11)	**$ 141,240,462**	**$ 160,979,689**				
(13) Difference Between Market & Actuarial Values	(885,712)	547,815				
(14) Estimated Market Value Rate of Return on Total Plan Assets	11.54%	8.78%				
(15) Estimated Market Value Return on Invested Plan Assets [1]	11.65%	8.57%				
(16) Actuarial Value Rate of Return	7.58%	7.75%				
(17) Ratio of Actuarial Value to Market Value	101%	100%				

[1] *Rate calculated and provided by the County.*

Historical Comparison of Actuarial Value of Assets to Market Value of Assets (Total ERS)

	Valuation as of July 1, 2018								July 1, 2017
	Non-Public Safety		Public Safety						
	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total	Total
Beginning of Year:									
(1) Actuarial Value of Assets [1, 4]	$ 870,593,405	$ 640,862,674	$ 394,559,893	$ 42,757,130	$ 1,080,781,335	$ 797,702,793	$ 141,240,462	$ 3,968,497,692	$ 3,798,555,275
End of Year:									
(2a) County Contributions	$ 18,141,379	$ 18,748,595	$ 4,784,997	$ 1,675,044	$ 17,769,773	$ 24,620,875	$ 7,422,635	$ 93,163,298	$ 95,398,957
(2b) Employee Contributions	2,937,368	2,754,675	2,373,576	830,898	7,368,595	7,174,333	5,525,324	28,964,769	27,940,416
(2c) Total Contributions [2]	$ 21,078,747	$ 21,503,270	$ 7,158,573	$ 2,505,942	$ 25,138,368	$ 31,795,208	$ 12,947,959	$ 122,128,067	$ 123,339,373
(3a) Benefit Payments and Refunds	$ 70,253,406	$ 51,554,279	$ 23,344,331	$ 369,725	$ 51,948,460	$ 41,805,802	$ 4,263,845	$ 243,539,848	$ 241,597,511
(3b) Administrative Expenses	447,941	370,406	236,772	82,885	829,109	690,509	213,061	2,870,683	3,185,769
(3c) Total Deductions [3]	$ 70,701,347	$ 51,924,685	$ 23,581,103	$ 452,610	$ 52,777,569	$ 42,496,311	$ 4,476,906	$ 246,410,531	$ 244,783,280
(4) Investment Return (AVA Basis)	$ 66,102,968	$ 48,893,856	$ 30,190,888	$ 3,418,573	$ 83,363,818	$ 61,900,825	$ 11,268,174	$ 305,139,102	$ 291,386,324
(5) Actuarial Value of Assets	$ 887,073,773	$ 659,335,115	$ 408,328,251	$ 48,229,035	$ 1,136,505,952	$ 848,902,515	$ 160,979,689	$ 4,149,354,330	$ 3,968,497,692
(6) AVA Rate of Return	7.81%	7.81%	7.81%	7.81%	7.81%	7.81%	7.75%	7.81%	7.80%
(7) Final Actuarial Value of Assets	$ 887,073,773	$ 659,335,115	$ 408,328,251	$ 48,229,035	$ 1,136,505,952	$ 848,902,515	$ 160,979,689	$ 4,149,354,330	$ 3,968,497,692

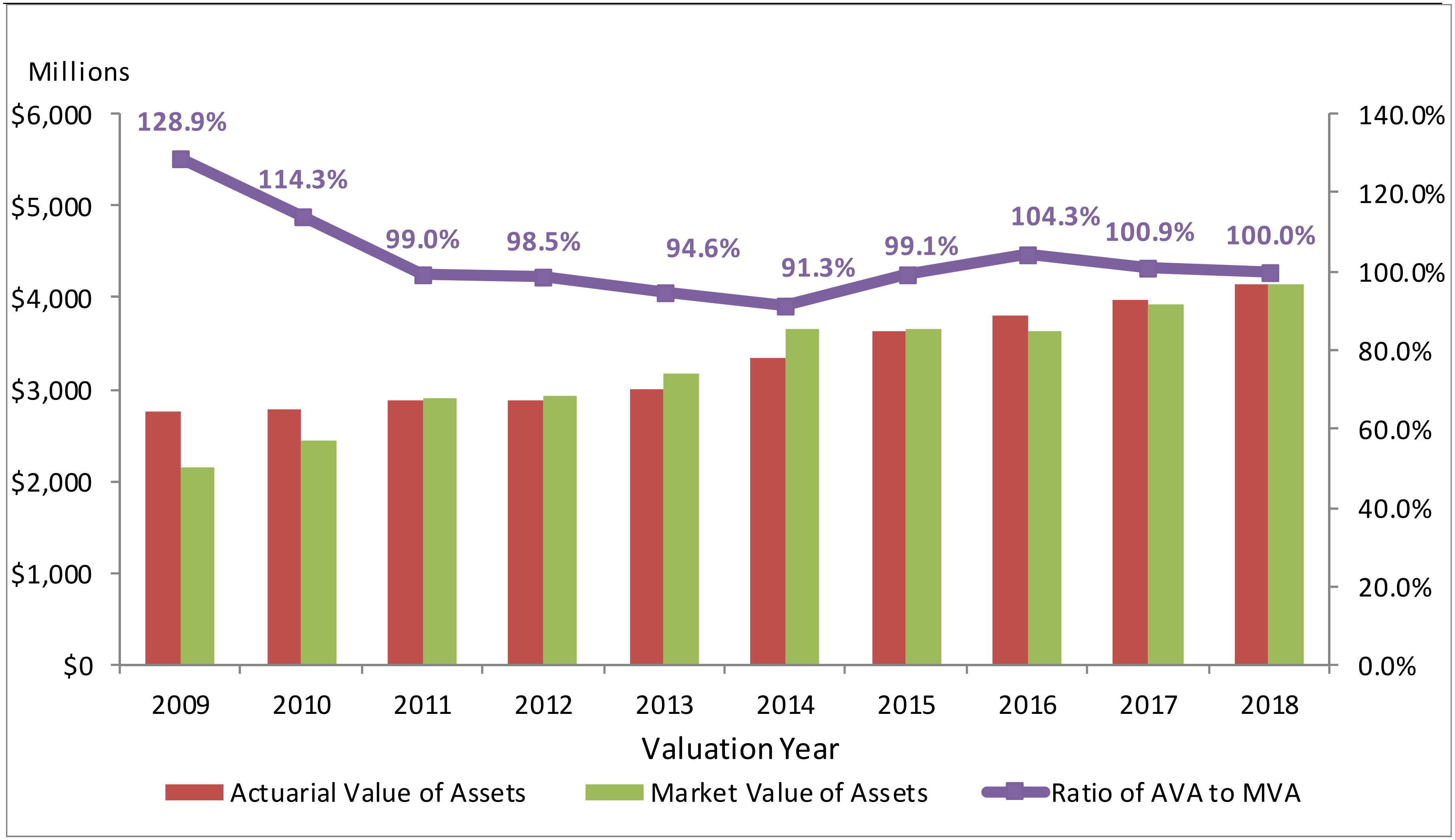
[1] *Actuarial value of assets by group is from the actuarial valuation as of July 1, 2017.*

[2] *Contributions by group allocated based on fiscal year 2018 contribution rates and expected fiscal year 2018 payroll from the prior actuarial valuation as of July 1, 2017.*

[3] *Deductions by group allocated based on amounts projected by group from the prior actuarial valuation as of July 1, 2017.*

[4] *The actuarial value of assets was allocated between Group E and Group J as of July 1, 2017, such that the funded ratio was equal for the two groups.*

Historical Comparison of Actuarial Value of Assets to Market Value of Assets (Total ERS)



SECTION B

ACTUARIAL VALUATION DATA

Summary of Participant Data
(July 1, 2018 and July 1, 2017)

	Valuation as of July 1, 2018							
	Non-Public Safety		Public Safety					
	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total
Total All Plans								
Active Members								
Number	381	516	461	128	1,237	1,155	2,126	6,004
Average Age	58.8	59.0	41.8	47.0	39.3	38.7	47.3	45.3
Average Service	28.8	27.2	11.2	14.3	13.5	12.2	7.2	13.0
Total Base Payroll	$ 41,794,810	$ 39,614,015	$ 33,491,197	$ 11,008,571	$ 103,172,843	$ 92,854,752	$ 146,038,261	$ 467,974,450
Contribution Basis Payroll:								
For Normal Cost	$ 38,282,457	$ 36,383,955	$ 31,836,827	$ 10,264,686	$ 98,717,858	$ 89,452,250	$ 139,294,821	$ 444,232,854
For Amortization of Unfunded Liability*	30,872,512	31,451,664	33,491,197	11,008,571	103,172,843	92,854,752	146,038,261	448,889,800
DRSP/DROP Members								
Number			39		47	61		147
Total Base Payroll			$ 4,004,273		$ 5,189,627	$ 6,790,733		$ 15,984,632
Total Benefits			2,273,057		3,581,771	4,229,341		10,084,169
Terminated Vested Members								
Number	49	56	34		36	18	296	489
Total Benefits	$ 489,648	$ 428,839	$ 520,053		$ 361,740	$ 163,178		$ 1,963,456
Retired Members and Beneficiaries								
Number							3	6,468
Total Benefits							$ 22,477	$ 245,455,253
Total Membership							2,425	13,108

	Valuation as of July 1, 2017							
	Non-Public Safety		Public Safety					
	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total
Total All Plans								
Active Members								
Number	429	580	461	142	1,222	1,132	1,772	5,738
Average Age	58.3	58.3	42.2	46.3	39.2	38.7	47.9	45.6
Average Service	27.9	26.2	11.5	13.5	13.4	12.3	7.6	13.6
Total Base Payroll	$ 45,885,715	$ 43,632,124	$ 32,512,716	$ 11,667,832	$ 99,735,151	$ 88,495,531	$ 122,345,446	$ 444,274,516
Contribution Basis Payroll:								
For Normal Cost	$ 42,296,741	$ 40,412,532	$ 31,015,093	$ 10,857,193	$ 96,137,066	$ 85,423,860	$ 116,749,876	$ 422,892,361
For Amortization of Unfunded Liability*	34,160,769	35,629,470	32,512,716	11,667,832	99,735,151	88,495,531	122,345,446	424,546,915
DRSP/DROP Members								
Number			30		40	53		123
Total Base Payroll			$ 3,016,165		$ 4,333,333	$ 5,525,429		$ 12,874,926
Total Benefits			1,841,607		2,975,376	3,630,499		8,447,482
Terminated Vested Members								
Number	54	64	35		35	26	266	480
Total Benefits	$ 553,775	$ 495,664	$ 534,908		$ 350,660	$ 237,588		$ 2,172,593
Retired Members and Beneficiaries								
Number							3	6,393
Total Benefits							$ 22,477	$ 236,691,546
Total Membership							2,041	12,734

**Excludes Non-GRIP UAL Payroll from Outside Agencies. As of July 1, 2018, this amount is $1,930,247, and as of July 1, 2017, this amount is $2,565,981.*

Summary of Active Participant Data by Plan

Valuation as of July 1, 2018 Including DROP/DRSP Actives

	Non-Public Safety		Public Safety					
	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total
Optional Non-Integrated								
Number	3	3	-	-	-	1		7
Total Base Payroll	$ 417,257	$ 283,657	$ -	$ -	$ -	$ 108,849		$ 809,763
Optional Integrated								
Number	9	5	-	-	-	1		15
Total Base Payroll	$ 896,699	$ 336,035	$ -	$ -	$ -	$ 143,747		$ 1,376,481
Mandatory Integrated								
Number	369	508	500	128	1,284	1,214		4,003
Total Base Payroll	$ 40,480,854	$ 38,994,323	$ 37,495,470	$ 11,008,571	$ 108,362,471	$ 99,392,890		$ 324,726,008
GRIP								
Number							2,126	2,126
Total Base Payroll							$ 146,038,261	$ 146,038,261
Total All Plans								
Number	381	516	500	128	1,284	1,216	2,126	6,151
Total Base Payroll	$ 41,794,810	$ 39,614,015	$ 37,495,470	$ 11,008,571	$ 108,362,471	$ 99,645,486	$ 146,038,261	$ 472,950,513

Valuation as of July 1, 2018 Excluding DROP/DRSP Actives

	Non-Public Safety		Public Safety					
	Group A	Group H	Group E	Group J	Group F	Group G	GRIP	Total
Optional Non-Integrated								
Number	3	3	-	-	-	1		7
Total Base Payroll	$ 417,257	$ 283,657	$ -	$ -	$ -	$ 108,849		$ 809,763
Optional Integrated								
Number	9	5	-	-	-	1		15
Total Base Payroll	$ 896,699	$ 336,035	$ -	$ -	$ -	$ 143,747		$ 1,376,481
Mandatory Integrated								
Number	369	508	461	128	1,237	1,153		3,856
Total Base Payroll	$ 40,480,854	$ 38,994,323	$ 33,491,197	$ 11,008,571	$ 103,172,843	$ 92,602,156		$ 319,749,944
GRIP								
Number							2,126	2,126
Total Base Payroll							$ 146,038,261	$ 146,038,261
Total All Plans								
Number	381	516	461	128	1,237	1,155	2,126	6,004
Total Base Payroll	$ 41,794,810	$ 39,614,015	$ 33,491,197	$ 11,008,571	$ 103,172,843	$ 92,854,752	$ 146,038,261	$ 467,974,449

Summary of Active Participant Data by Outside Agencies

Valuation as of July 1, 2018

	Assessment and Taxation	Circuit Court	CRU 92 Credit Union	District Court	Housing Opportunities Commission	Revenue Authority	Strathmore Hall	Town of Chevy Chase	Washington Suburban Transit Commission	Total Agency	Total Non-Agency	Total ERS
<u>Non-GRIP Membership</u>												
Active Members												
Number	-	1	1	-	23	2	3	-	-	30	3,848	3,878
Average Age	-	67.6	57.8	-	60.9	49.5	58.7	-	-	60.0	44.1	44.2
Average Service	-	47.0	27.8	-	28.6	28.2	31.3	-	-	29.4	16.1	16.2
Total Base Payroll	$ -	$ 75,562	$ 123,500	$ -	$ 1,862,615	$ 91,975	$ 439,694	$ -	$ -	$ 2,593,346	$ 319,342,843	$ 321,936,189
DRSP/DROP Members												
Number											147	147
Total Base Payroll											$ 15,984,633	$ 15,984,633
Total Benefits											$ 10,084,168	$ 10,084,168
Terminated Vested Members												
Number	-	-	-	-	17	-	-	1	-	18	175	193
Total Benefits	$ -	$ -	$ -	$ -	$ 109,135	$ -	$ -	$ 4,366	$ -	$ 113,501	$ 1,849,957	$ 1,963,458
Retired Members and Beneficiaries												
Number	20	4	7	8	148	20	4	4	1	216	6,249	6,465
Total Benefits	$ 1,171,163	$ 92,414	$ 336,787	$ 195,900	$ 3,805,541	$ 419,328	$ 63,902	$ 95,961	$ 20,863	$ 6,201,858	$ 239,230,918	$ 245,432,776
Total Non-GRIP Membership	20	5	8	8	188	22	7	5	1	264	10,419	10,683
<u>GRIP Membership</u>												
Active Members												
Number	-	1	-	-	113	4	10	1	-	129	1,997	2,126
Average Age	-	67.8	-	-	47.6	46.0	42.3	40.1	-	47.3	47.3	47.3
Average Service	-	12.0	-	-	6.2	6.2	3.0	7.5	-	6.0	7.3	7.2
Total Base Payroll	$ -	$ 51,064	$ -	$ -	$ 7,429,687	$ 221,876	$ 558,546	$ 36,674	$ -	$ 8,297,848	$ 137,740,414	$ 146,038,261
Terminated GRIP Members	-	-	-	-	8	-	1	-	-	9	287	296
Retired GRIP Members											3	3
Total GRIP Membership	-	1	-	-	121	4	11	1	-	138	2,287	2,425
Total GRIP and Non-GRIP Membership	20	6	8	8	309	26	18	6	1	402	12,706	13,108

Age/Service by Group as of July 1, 2018

Group A

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	-	-	-	-	-	-	-	-	-	**0**	**$ -**
25-29	-	-	-	-	-	-	-	-	-	**0**	**-**
30-34	-	-	-	-	-	-	-	-	-	**0**	**-**
35-39	-	-	2	-	-	-	-	-	-	**2**	**148,892**
40-44	-	-	3	1	2	-	-	-	-	**6**	**519,041**
45-49	-	-	1	-	9	16	3	-	-	**29**	**2,546,267**
50-54	-	-	-	4	15	47	11	-	-	**77**	**7,761,351**
55-59	-	-	-	-	14	51	35	3	1	**104**	**11,855,091**
60-64	-	2	2	1	12	28	33	11	3	**92**	**10,823,750**
65-69	-	-	-	1	8	14	19	6	5	**53**	**6,024,189**
70-74	-	-	-	-	1	3	5	4	1	**14**	**1,680,401**
75 and Over	-	-	-	-	-	2	1	1	-	**4**	**435,828**
Total	**-**	**2**	**8**	**7**	**61**	**161**	**107**	**25**	**10**	**381**	**$ 41,794,810**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	58.8	Average Age:	58.3
Average Service:	28.8	Average Service:	27.9
Average Annual Pay:	$ 109,698	Average Annual Pay:	$ 106,960
Vested Participants	381	Vested Participants	427
Nonvested Participants	-	Nonvested Participants	2
Total Participants	381	Total Participants	429

Group H

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	-	-	-	-	-	-	-	-	-	**0**	**$ -**
25-29	-	-	-	-	-	-	-	-	-	**0**	**-**
30-34	-	-	2	-	-	-	-	-	-	**2**	**135,368**
35-39	1	-	3	1	-	-	-	-	-	**5**	**339,798**
40-44	1	-	2	4	-	-	-	-	-	**7**	**543,605**
45-49	-	1	4	3	16	15	2	-	-	**41**	**3,214,867**
50-54	-	1	6	12	27	39	12	-	-	**97**	**7,217,400**
55-59	-	1	1	9	17	70	25	8	1	**132**	**10,290,013**
60-64	-	-	-	6	24	42	36	14	4	**126**	**9,779,141**
65-69	-	1	1	3	12	29	15	15	2	**78**	**6,198,681**
70-74	-	-	-	1	4	4	5	2	-	**16**	**1,004,193**
75 and Over	-	1	-	-	1	5	2	1	2	**12**	**890,949**
Total	**2**	**5**	**19**	**39**	**101**	**204**	**97**	**40**	**9**	**516**	**$ 39,614,015**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	59.0	Average Age:	58.3
Average Service:	27.2	Average Service:	26.2
Average Annual Pay:	$ 76,771	Average Annual Pay:	$ 75,228
Vested Participants	514	Vested Participants	577
Nonvested Participants	2	Nonvested Participants	3
Total Participants	516	Total Participants	580

Age/Service by Group as of July 1, 2018

Group E

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	16	-	-	-	-	-	-	-	-	**16**	**$ 787,885**
25-29	54	8	-	-	-	-	-	-	-	**62**	**3,300,048**
30-34	35	16	4	-	-	-	-	-	-	**55**	**3,052,170**
35-39	16	9	30	5	-	-	-	-	-	**60**	**4,056,881**
40-44	8	5	25	28	5	-	-	-	-	**71**	**5,636,912**
45-49	13	3	21	24	20	2	-	-	-	**83**	**6,680,929**
50-54	6	1	13	19	24	7	1	-	-	**71**	**6,268,273**
55-59	1	1	9	16	4	2	1	-	-	**34**	**2,850,998**
60-64	-	1	1	2	4	1	-	-	-	**9**	**857,101**
65-69	-	-	-	-	-	-	-	-	-	**0**	**-**
70-74	-	-	-	-	-	-	-	-	-	**0**	**-**
75 and Over	-	-	-	-	-	-	-	-	-	**0**	**-**
Total	**149**	**44**	**103**	**94**	**57**	**12**	**2**	**-**	**-**	**461**	**$ 33,491,197**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	41.8	Average Age:	42.2
Average Service:	11.2	Average Service:	11.5
Average Annual Pay:	$ 72,649	Average Annual Pay:	$ 70,526
Vested Participants	312	Vested Participants	319
Nonvested Participants	149	Nonvested Participants	142
Total Participants	461	Total Participants	461

Group J

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	-	-	-	-	-	-	-	-	-	**0**	**$ -**
25-29	5	-	-	-	-	-	-	-	-	**5**	**296,474**
30-34	3	3	2	-	-	-	-	-	-	**8**	**534,419**
35-39	4	7	6	2	-	-	-	-	-	**19**	**1,384,575**
40-44	5	2	1	12	3	-	-	-	-	**23**	**1,944,943**
45-49	2	3	3	4	8	1	-	-	-	**21**	**1,990,141**
50-54	-	2	5	9	2	4	1	-	-	**23**	**2,179,413**
55-59	2	1	4	6	-	4	-	1	-	**18**	**1,709,008**
60-64	-	1	2	-	1	2	-	1	-	**7**	**598,497**
65-69	-	1	1	1	-	1	-	-	-	**4**	**371,101**
70-74	-	-	-	-	-	-	-	-	-	**0**	**-**
75 and Over	-	-	-	-	-	-	-	-	-	**0**	**-**
Total	**21**	**20**	**24**	**34**	**14**	**12**	**1**	**2**	**-**	**128**	**$ 11,008,571**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	47.0	Average Age:	46.3
Average Service:	14.3	Average Service:	13.5
Average Annual Pay:	$ 86,004	Average Annual Pay:	$ 82,168
Vested Participants	107	Vested Participants	110
Nonvested Participants	21	Nonvested Participants	32
Total Participants	128	Total Participants	142

Age/Service by Group as of July 1, 2018

Group F

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	46	-	-	-	-	-	-	-	-	**46**	**$ 2,419,699**
25-29	146	40	-	-	-	-	-	-	-	**186**	**11,421,849**
30-34	61	97	61	-	-	-	-	-	-	**219**	**15,320,969**
35-39	14	21	127	55	-	-	-	-	-	**217**	**18,108,069**
40-44	8	5	42	97	33	-	-	-	-	**185**	**17,280,622**
45-49	2	5	22	48	133	19	1	-	-	**230**	**22,968,657**
50-54	-	-	10	14	45	36	8	-	-	**113**	**11,635,416**
55-59	-	-	1	2	7	6	14	1	-	**31**	**3,118,065**
60-64	-	3	-	1	1	-	1	2	-	**8**	**704,576**
65-69	-	-	-	-	1	-	-	-	-	**1**	**99,836**
70-74	-	-	-	-	-	-	1	-	-	**1**	**95,084**
75 and Over	-	-	-	-	-	-	-	-	-	**0**	**-**
Total	**277**	**171**	**263**	**217**	**220**	**61**	**25**	**3**	**-**	**1,237**	**$ 103,172,843**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	39.3	Average Age:	39.2
Average Service:	13.5	Average Service:	13.4
Average Annual Pay:	$ 83,406	Average Annual Pay:	$ 81,616
Vested Participants	960	Vested Participants	955
Nonvested Participants	277	Nonvested Participants	267
Total Participants	1,237	Total Participants	1,222

Group G

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	37	4	-	-	-	-	-	-	-	**41**	**$ 2,137,104**
25-29	95	72	5	-	-	-	-	-	-	**172**	**9,935,465**
30-34	77	88	80	1	-	-	-	-	-	**246**	**16,283,710**
35-39	26	31	113	40	2	-	-	-	-	**212**	**16,965,361**
40-44	7	17	57	65	25	-	-	-	-	**171**	**15,497,939**
45-49	2	5	30	64	46	28	2	-	-	**177**	**18,011,986**
50-54	1	3	8	15	29	26	14	-	-	**96**	**10,112,010**
55-59	-	1	5	1	3	9	10	1	-	**30**	**3,009,073**
60-64	1	-	3	1	1	-	1	-	1	**8**	**687,580**
65-69	-	-	1	-	-	-	-	-	1	**2**	**214,525**
70-74	-	-	-	-	-	-	-	-	-	**0**	**-**
75 and Over	-	-	-	-	-	-	-	-	-	**0**	**-**
Total	**246**	**221**	**302**	**187**	**106**	**63**	**27**	**1**	**2**	**1,155**	**$ 92,854,752**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	38.7	Average Age:	38.7
Average Service:	12.2	Average Service:	12.3
Average Annual Pay:	$ 80,394	Average Annual Pay:	$ 78,176
Vested Participants	909	Vested Participants	847
Nonvested Participants	246	Nonvested Participants	285
Total Participants	1,155	Total Participants	1,132

Age/Service by Group as of July 1, 2018

GRIP

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	21	2	-	-	-	-	-	-	-	**23**	**$ 998,055**
25-29	153	11	5	-	-	-	-	-	-	**169**	**8,661,596**
30-34	182	48	3	-	-	-	-	-	-	**233**	**13,314,746**
35-39	166	50	19	2	-	-	-	-	-	**237**	**14,279,571**
40-44	160	49	32	21	2	-	-	-	-	**264**	**18,300,171**
45-49	127	37	40	34	11	-	-	-	-	**249**	**17,865,813**
50-54	110	56	56	41	15	-	-	-	-	**278**	**20,065,872**
55-59	108	54	72	64	15	1	-	-	-	**314**	**23,636,525**
60-64	60	44	54	51	25	-	-	-	-	**234**	**18,410,215**
65-69	13	20	29	22	8	1	1	-	-	**94**	**7,833,816**
70-74	4	1	8	6	5	-	-	-	-	**24**	**2,096,198**
75 and Over	-	2	2	2	1	-	-	-	-	**7**	**575,683**
Total	**1,104**	**374**	**320**	**243**	**82**	**2**	**1**	**-**	**-**	**2,126**	**$ 146,038,261**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	47.3	Average Age:	47.9
Average Service:	7.2	Average Service:	7.6
Average Annual Pay:	$ 68,692	Average Annual Pay:	$ 69,044
Vested Participants	1,332	Vested Participants	1,165
Nonvested Participants	794	Nonvested Participants	607
Total Participants	2,126	Total Participants	1,772

Total All Groups

Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	Totals	Valuation Payroll
Under 25	120	6	-	-	-	-	-	-	-	**126**	**$ 6,342,743**
25-29	453	131	10	-	-	-	-	-	-	**594**	**33,615,432**
30-34	358	252	152	1	-	-	-	-	-	**763**	**48,641,382**
35-39	227	118	300	105	2	-	-	-	-	**752**	**55,283,147**
40-44	189	78	162	228	70	-	-	-	-	**727**	**59,723,233**
45-49	146	54	121	177	243	81	8	-	-	**830**	**73,278,661**
50-54	117	63	98	114	157	159	47	-	-	**755**	**65,239,735**
55-59	111	58	92	98	60	143	85	14	2	**663**	**56,468,773**
60-64	61	51	62	62	68	73	71	28	8	**484**	**41,860,861**
65-69	13	22	32	27	29	45	35	21	8	**232**	**20,742,147**
70-74	4	1	8	7	10	7	11	6	1	**55**	**4,875,876**
75 and Over	-	3	2	2	2	7	3	2	2	**23**	**1,902,460**
Total	**1,799**	**837**	**1,039**	**821**	**641**	**515**	**260**	**71**	**21**	**6,004**	**$ 467,974,450**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Current Valuation		Previous Valuation	
Average Age:	45.3	Average Age:	45.6
Average Service:	13.0	Average Service:	13.6
Average Annual Pay:	$ 77,944	Average Annual Pay:	$ 77,427
Vested Participants	4,515	Vested Participants	4,400
Nonvested Participants	1,489	Nonvested Participants	1,338
Total Participants	6,004	Total Participants	5,738

Schedule of Active Member Data as of July 1, 2018

Valuation Date 7/1	Number	Annual Payroll	Average Annual Pay	% Increase in Avg Pay
2009	5,012	$376,014,994	$75,023	0.96%
2010	5,786	431,226,155	74,529	-0.66%
2011	5,515	405,336,529	73,497	-1.38%
2012	5,554	398,460,248	71,743	-2.39%
2013	5,606	395,988,026	70,636	-1.54%
2014	5,535	402,899,096	72,791	3.05%
2015	5,541	418,728,584	75,569	3.82%
2016	5,513	427,622,475	77,566	2.64%
2017	5,738	444,274,516	77,427	-0.18%
2018	6,004	467,974,450	77,944	0.67%

Prior to the July 1, 2014, valuation, counts and payroll include DRSP and DROP members.

Schedule of Members in Pay Status as of July 1, 2018

Valuation Date 7/1	Annuitants	Survivors	Disableds	Total Number	Total Annual Benefits	Total Average Annual Benefit
2009	3,957	386	1,036	5,379		31,698
2010	4,132	380	1,079	5,591		32,606
2011	4,245	393	1,074	5,712		34,348
2012	4,309	438	1,077	5,824	$203,710,715	34,978
2013	4,412	448	1,101	5,961	210,686,878	35,344
2014	4,669	452	1,121	6,242	229,568,856	36,778
2015	4,807	448	1,125	6,380	235,612,875	36,930
2016	4,882	445	1,126	6,453	240,863,796	37,326
2017	4,947	453	1,116	6,516	245,139,028	37,621
2018	5,031	465	1,119	6,615	255,539,421	38,630

Total Annual Benefits first shown in actuarial valuation report in 2012. Amounts in prior years are not readily available. Beginning with the July 1, 2014, valuation, counts for annuitants and annual benefit amounts include DRSP and DROP members.

Reconciliation of Participant Data as of July 1, 2018

Non-Public Safety

	Actives	Deferred Vested	Retirees and Beneficiaries [1]	Total
Participants at 07/01/2017	1,009	118	-	1,127
New Entrants and Rehires	-	-	-	-
Transfers To DROP/DRSP	-	-	-	-
Non-Vested Terminations/ Refund of Contributions	(2)	(1)	-	(3)
Vested Terminations	(1)	1	-	-
Transfers from GRIP	-	-	-	-
Transfer to E, F, G	-	-	-	-
Transfer from E, F, G	-	-	-	-
Service Retirements	(106)	(13)	-	(119)
Disability	-	-	-	-
New Beneficiaries	-	-	-	-
Deaths	(3)	(1)	-	(4)
Benefit Terminations	-	-	-	-
Status Adjustments	-	1	-	1
Participants at 07/01/2018	897	105	-	1,002

[1] *Reconciliation of non-GRIP retirees and beneficiaries shown in total only.*

Reconciliation of Participant Data as of July 1, 2018

Public Safety

	Actives	Deferred Vested	Retirees and Beneficiaries [1]	DRSP/DROP Members	Total
Participants at 07/01/2017	2,957	96	-	123	3,176
New Entrants and Rehires	174	(3)	-	-	171
Transfers To DROP/DRSP	(70)	-	-	70	-
Non-Vested Terminations/ Refund of Contributions	(37)	(11)	-	-	(48)
Vested Terminations	(8)	8	-	-	-
Transfers from GRIP	-	-	-	-	-
Transfer to A, H	-	-	-	-	-
Transfer from A, H	-	-	-	-	-
Service Retirements	(22)	(2)	-	(39)	(63)
Disability	(11)	-	-	-	(11)
New Beneficiaries	-	-	-	-	-
Deaths	(2)	-	-	-	(2)
Benefit Terminations	-	-	-	(7)	(7)
Status Adjustments	-	-	-	-	-
Participants at 07/01/2018	2,981	88	-	147	3,216

[1] *Reconciliation of non-GRIP retirees and beneficiaries shown in total only.*

Reconciliation of Participant Data as of July 1, 2018

GRIP

	Actives	Deferred Vested	Retirees and Beneficiaries	Total
Participants at 07/01/2017	1,772	266	3	2,041
New Entrants and Rehires	463	(24)	-	439
Transfers To DROP/DRSP	-	-	-	-
Non-Vested Terminations/ Refund of Contributions	(42)	(29)	-	(71)
Vested Terminations	(67)	67	-	-
Transfers	-	-	-	-
Transfers from GRIP	-	-	-	-
Service Retirements	-	-	-	-
Disability	-	-	-	-
Lump Sum Retirement	-	-	-	-
Deaths	-	-	-	-
Benefit Terminations	-	-	-	-
Status Adjustments	-	16	-	16
Participants at 07/01/2018	2,126	296	3	2,425

Reconciliation of Participant Data as of July 1, 2018

Total

	Actives	Deferred Vested	Retirees and Beneficiaries	DRSP/DROP Members	Total
Participants at 07/01/2017	5,738	480	6,393	123	12,734
New Entrants and Rehires	637	(27)	-	-	610
Transfers To DROP/DRSP	(70)	-	-	70	-
Non-Vested Terminations/ Refund of Contributions	(81)	(41)	-	-	(122)
Vested Terminations	(76)	76	-	-	-
Transfers	-	-	-	-	-
Service Retirements	(128)	(15)	182	(39)	-
Disability	(11)	-	11	-	-
New Beneficiaries	-	-	73	-	73
Deaths	(5)	(1)	(172)	-	(178)
Benefit Terminations	-	-	-	(7)	(7)
Adjustments	-	17	(19)	-	(2)
Participants at 07/01/2018	6,004	489	6,468	147	13,108

SECTION C

ACTUARIAL VALUATION METHODS AND ASSUMPTIONS

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using the ***Individual Entry-Age Normal*** *actuarial cost method* having the following characteristics:

- The normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Financing of Unfunded Actuarial Accrued Liabilities. The unfunded actuarial accrued liability is amortized using a level-percentage of pay amortization of a closed period amortization base. The amortization method was changed from an 18-year closed period amortization of the base established on July 1, 2010, and 20-year closed period amortization of the bases established thereafter, to recombining all amortization bases established prior to July 1, 2015, into a single amortization base equal to the unfunded actuarial liability as of July 1, 2015. The single amortization base as of July 1, 2015, and subsequent unfunded liability arising in future valuations are amortized over a single nine-year closed period for non-public safety groups and separate 20-year closed periods for public safety groups and GRIP beginning July 1, 2015.

Allocation of Unfunded Liability and Amortization Payments by Group. The amortization payments for non-GRIP members are allocated between Groups A, E, F, G, H and J. The amortization payment schedule by group for the bases established prior to the 2012 valuation is based on the allocation established by the prior actuary. The amortization payment schedule by group for the bases established beginning in the 2012 valuation is based on allocations calculated by GRS using a consistent method with the prior actuary.

The unfunded liability as of July 1, 2014, was calculated for each group based on the amortization payment amounts in that valuation and the remaining amortization period for each payment. Beginning with the July 1, 2015, actuarial valuation, changes in the unfunded liability are separately calculated and reported for each group.

The actuarial value of assets by group as of July 1, 2014, was calculated as the difference between the actuarial accrued liability and the unfunded liability as of July 1, 2014. Beginning with the actuarial valuation as of July 1, 2015, the non-GRIP actuarial value of assets by group is calculated using the following methodology:

1) Beginning of year actuarial value of assets for each benefit group (calculated in the prior year's valuation); plus
2) Non-investment cash flows (allocated based on each group's projected non-investment cash flows from the prior valuation); plus
3) Assumed investment return on the actuarial value of assets (rate of return equal to the rate of return on an actuarial value of assets basis for non-GRIP assets).

Actuarial Value of Pension Plan Assets. The calculated value is determined by adjusting the market value of assets to reflect the investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last five years at the rate of 20 percent per year.

Actuarial Cost Method (Continued)

Contribution Basis Payroll. The payroll for each member who is active at the actuarial valuation date is called the Base Payroll. For purposes of calculating the contribution rates based on the dollar contributions determined, different payroll amounts are used.

Contribution Basis Payroll for Normal Cost is the expected payroll for current active members payable in the upcoming year and reflects that a percentage of members will exit the active population due to retirement, termination, death or disability. This payroll is on a consistent basis with the normal cost dollars shown in the report.

Contribution Basis Payroll for Amortization of Unfunded Liability is equal to the total base payroll for the open groups (groups who are enrolling new members) and projected payroll for the period July 1, 2019, through June 30, 2020 for the closed groups (groups that are closed to new members). The projected payroll for the closed groups reflects that a percentage of members will exit the active population due to retirement, termination, death or disability and no additional employees will be hired into those groups. The objective of using this payroll basis is to have the actual County contribution made in fiscal year 2020 for the amortization of the unfunded liability (which is based on a contribution rate and actual payroll during the year) be as close as possible to the dollar amount calculated in the 2018 actuarial valuation report.

Groups A and H are closed and the remaining groups are open.

Actuarial Assumptions in the Valuation Process

The contribution and benefit values of the System are calculated by applying actuarial assumptions to the benefit provisions and census information furnished, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experiences are:

- Long-term rates of investment return to be generated by the assets of the Plan;
- Patterns of pay increases to members;
- Rates of mortality among members, retirees and beneficiaries;
- Rates of withdrawal of active members;
- Rates of disability among members; and
- The age patterns of actual retirement.

In an actuarial valuation, the monetary effect of each actuarial assumption is calculated for as long as a present covered person survives; a period of time which can be as long as a century.

Actual experience of the Plan will not coincide exactly with assumed experience. Each actuarial valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). Thus, an experience review of the Montgomery County Employees' Retirement System for the period July 1, 2009 to July 1, 2014, was performed to compare the demographic and economic experience against the actuarial assumptions used in the actuarial valuations. The actuarial assumptions described in this section were adopted by the Directors for use beginning with the July 1, 2015, actuarial valuation. Additional information regarding the rationale for the actuarial assumptions may be found in the 2015 experience review report. All actuarial assumptions are expectations of future experience, not current market measures.

Actuarial Valuation Assumptions

The assumed rate of price inflation is 2.75 percent.

The assumed COLA is as follows:

	Assumed COLA
100% of CPI, benefit attributable to pre 7/1/2011 service	2.75%
60% of CPI, benefit attributable to pre 7/1/2011 service	1.65%
100% of CPI*, benefit attributable to service on or after 7/1/2011	2.30%

**Capped at 2.5 percent.*

The following groups have a COLA equal to 60 percent of the increase in CPI:

- Unrepresented Non-Public Safety Enrolled 7/1/78 & after-retired before 11/1/01
- Certain Sheriffs and Inspectors Enrolled 7/1/78 & after-retired prior to 11/1/01
- Represented Non-Public Safety Enrolled 7/1/78 & after-retired prior to 11/1/01
- Sheriffs/Corrections Enrolled 7/1/78 & after-retired prior to 11/1/01
- Fire Enrolled 7/1/78 & after-retired prior to 3/1/00
- Police Enrolled 7/1/78 & after-retired prior to 3/1/00

The assumed rate of investment return used was 7.50%, net of expenses, annually.

Actuarial Valuation Assumptions (Continued)

The rates of annual salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

Service At Assumed Pay Increase	Group A, H and GRIP	Group E and J	Group F	Group G
1	6.00%	9.50%	8.00%	9.50%
2	5.50%	9.00%	8.00%	9.00%
3	5.00%	7.00%	8.00%	7.00%
4	4.50%	6.50%	6.50%	6.50%
5	4.00%	6.00%	6.00%	6.00%
6	4.00%	5.50%	5.50%	6.00%
7	4.00%	5.00%	5.00%	6.00%
8	4.00%	4.50%	4.50%	6.00%
9	4.00%	4.00%	4.00%	6.00%
10	4.00%	4.00%	4.00%	6.00%
11	3.25%	4.00%	4.00%	4.50%
12	3.25%	4.00%	4.00%	4.50%
13	3.25%	4.00%	4.00%	4.50%
14	3.25%	4.00%	4.00%	4.50%
15	3.25%	4.00%	4.00%	4.50%
16	3.25%	4.00%	4.00%	4.00%
17	3.25%	4.00%	4.00%	4.00%
18	3.25%	4.00%	4.00%	4.00%
19	3.25%	4.00%	4.00%	4.00%
20	3.25%	4.00%	4.00%	4.00%
21+	3.25%	3.25%	3.25%	3.25%

The assumed rate of total payroll growth used in amortizing the unfunded liability as a level percentage of pay is 3.25 percent.

The assumed increase in the Social Security Taxable Wage Base is 3.25 percent.

Actuarial Valuation Assumptions (Continued)

The mortality assumptions are as follows:

	Male Set Forward	Female Set Forward
RP-2014 Employee, sex distinct (pre-retirement, non-service connected)*	None	None
RP-2014 Healthy Annuitant, sex distinct (non-disabled post-retirement)	None	None
RP-2014 Healthy Annuitant, sex distinct (disabled post retirement)	6 years	8 years

**Rates multiplied by 15 percent were used for pre-retirement service connected mortality for Groups F and G.*

To provide a margin for future mortality improvements, generational mortality improvements from 2014 using projection scale MP-2014 was used.

	Healthy Mortality				Disabled Mortality	
	Pre-Retirement Future Life Expectancy (years) in 2018		Post-Retirement Future Life Expectancy (years) in 2018		Future Life Expectancy (years) in 2018	
Age	Male	Female	Male	Female	Male	Female
20	69.39	73.64	67.08	70.02	60.91	61.82
25	64.07	68.31	61.67	64.58	55.52	56.42
30	58.74	62.99	56.31	59.20	50.19	51.11
35	53.40	57.67	51.01	53.90	44.96	45.91
40	48.07	52.37	45.80	48.68	39.87	40.80
45	42.76	47.10	40.69	43.56	34.93	35.77
50	37.53	41.88	35.74	38.52	30.15	30.82
55	32.42	36.74	30.96	33.56	25.54	26.02
60	27.47	31.69	26.38	28.73	21.15	21.49
65	22.77	26.73	21.98	24.08	17.03	17.27
70	18.38	21.92	17.81	19.70	13.26	13.44
75	14.33	17.31	13.93	15.61	9.89	10.02
80	10.65	12.94	10.45	11.90	7.06	7.15
85	7.49	9.01	7.49	8.67	4.88	4.97
90	5.16	6.11	5.18	6.06	3.43	3.47
95	3.59	4.18	3.59	4.18	2.47	2.49
100	2.56	2.92	2.56	2.92	1.88	1.89
105	1.92	2.13	1.92	2.13	1.61	1.60

Life expectancy based on non-service connected mortality rates only.

Rates of separation from active membership are represented by the following table (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members terminating employment.

Service Beginning of Year	Group A, H and GRIP		Group E and J		Group F and G	
	Male	Female	Male	Female	Male	Female
0	11.50%	12.50%	12.00%	15.00%	6.00%	9.00%
1	9.50%	10.50%	10.00%	12.00%	5.00%	7.00%
2	8.00%	9.50%	6.00%	7.00%	4.00%	5.00%
3	6.00%	6.50%	5.00%	6.50%	3.00%	4.50%
4	4.50%	4.50%	4.00%	4.00%	2.50%	3.50%
5	4.00%	4.25%	3.90%	3.90%	2.25%	3.00%
6	4.00%	4.25%	3.80%	3.80%	2.00%	2.75%
7	4.00%	4.25%	3.70%	3.70%	1.75%	2.50%
8	4.00%	4.25%	3.60%	3.60%	1.50%	2.00%
9	4.00%	4.25%	3.50%	3.50%	1.25%	1.75%
10	3.25%	2.75%	2.00%	2.00%	1.00%	1.50%
11	3.25%	2.75%	1.50%	1.50%	0.75%	1.25%
12	3.25%	2.75%	1.00%	1.00%	0.50%	1.00%
13	3.25%	2.75%	1.00%	1.00%	0.50%	0.75%
14	3.25%	2.75%	1.00%	1.00%	0.50%	0.50%
15	2.00%	2.50%	1.00%	1.00%	0.50%	0.50%
16	2.00%	2.50%	1.00%	1.00%	0.50%	0.50%
17	2.00%	2.50%	1.00%	1.00%	0.50%	0.50%
18	2.00%	2.50%	1.00%	1.00%	0.50%	0.50%
19	2.00%	2.50%	1.00%	1.00%	0.50%	0.50%
20+	2.00%	2.50%	1.00%	1.00%	0.50%	0.50%

Vested participants that terminate are assumed to elect the option with the greater present value:

1) *A refund of their accumulated contributions with interest or*
2) *A deferred benefit.*

Actuarial Valuation Assumptions (Continued)

Rates of disability were as follows:

	Non-Public Safety		Public Safety					
	Groups A and H		Groups E and J		Group F		Group G	
Age	Male	Female	Male	Female	Male	Female	Male	Female
20	0.0257%	0.0068%	0.0515%	0.0315%	0.1029%	0.1125%	0.1029%	0.1125%
25	0.0527%	0.0180%	0.1054%	0.0840%	0.2107%	0.3000%	0.2107%	0.3000%
30	0.1078%	0.0480%	0.2156%	0.2240%	0.4312%	0.8000%	0.4312%	0.8000%
35	0.1323%	0.0705%	0.2646%	0.3290%	0.5292%	1.1750%	0.5292%	1.1750%
40	0.1752%	0.0983%	0.3504%	0.4585%	0.7007%	1.6375%	0.9109%	1.6375%
45	0.3332%	0.2631%	0.6664%	1.2278%	1.3328%	4.3850%	1.5994%	4.3850%
50	0.5537%	0.3537%	1.1074%	1.6506%	2.2148%	5.8950%	2.5692%	5.8950%
55	0.6762%	0.3717%	1.3524%	1.7346%	2.7048%	6.1950%	3.5162%	6.1950%
60	0.7987%	0.3789%	1.3524%	1.7346%	2.7048%	6.1950%	3.5162%	6.1950%

The assumed split of service-connected and non-service connected disabilities is as follows:

			Service Connected Disability	
Group	Total Non-Service Connected	Total Service Connected	Total Incapacity 70% Benefit	Partial Incapacity 52.5% Benefit
A and H	65%	35%	17.5%	17.5%
E and J	40%	60%	20.0%	40.0%
F	5%	95%	30.0%	65.0%
G	5%	95%	30.0%	65.0%

Actuarial Valuation Assumptions (Continued)

Rates of retirement for members eligible to retire during the next year were as follows:

	Groups A and H (Non Public Safety)		Groups E and J			Group F			Group G			GRIP	
Age	Under 30 Years of Service	30 Years of Service and Over	Under 25 Years of Service	25 Years of Service	26 Years of Service and Over	Under 25 Years of Service	25 Years of Service	26 Years of Service and Over	Under 20 or 21 - 24 Years of Service	20 Years of Service	25 Years of Service and Over	Under 15 Years of Service	15 Years of Service and Over
Under 42			3.50%	3.50%	3.50%	2.50%	20.00%	2.50%	2.50%	10.00%	5.00%		
42			3.50%	3.50%	3.50%	2.50%	20.00%	2.50%	5.00%	10.00%	5.00%		
43			3.50%	3.50%	3.50%	2.50%	20.00%	2.50%	5.00%	10.00%	5.00%		
44			3.50%	3.50%	3.50%	2.50%	20.00%	2.50%	5.00%	10.00%	5.00%		
45	2.00%	2.00%	3.50%	8.00%	8.00%	2.50%	20.00%	2.50%	7.50%	10.00%	10.00%		
46	2.00%	2.00%	3.50%	8.00%	8.00%	3.50%	20.00%	3.50%	7.50%	10.00%	10.00%		
47	2.00%	2.00%	3.50%	8.00%	8.00%	4.50%	20.00%	4.50%	7.50%	10.00%	10.00%		
48	2.00%	2.00%	3.50%	8.00%	8.00%	5.50%	20.00%	5.50%	7.50%	10.00%	10.00%		
49	2.00%	2.00%	3.50%	8.00%	8.00%	6.50%	20.00%	6.50%	7.50%	10.00%	10.00%		
50	3.00%	15.00%	10.00%	10.00%	10.00%	10.00%	20.00%	20.00%	10.00%	15.00%	17.50%		
51	3.00%	15.00%	10.00%	10.00%	10.00%	10.00%	20.00%	20.00%	10.00%	15.00%	17.50%		
52	3.00%	15.00%	10.00%	12.00%	12.00%	10.00%	20.00%	20.00%	12.50%	20.00%	25.00%		
53	3.00%	15.00%	10.00%	12.00%	12.00%	15.00%	25.00%	25.00%	12.50%	20.00%	25.00%		
54	3.00%	15.00%	10.00%	12.00%	12.00%	15.00%	25.00%	25.00%	12.50%	20.00%	25.00%		
55	6.00%	15.00%	15.00%	30.00%	30.00%	15.00%	40.00%	40.00%	20.00%	40.00%	35.00%	3.00%	3.00%
56	6.00%	15.00%	15.00%	30.00%	30.00%	15.00%	40.00%	40.00%	20.00%	40.00%	35.00%	3.00%	3.00%
57	6.00%	15.00%	15.00%	30.00%	30.00%	15.00%	40.00%	40.00%	20.00%	40.00%	35.00%	6.00%	6.00%
58	8.00%	15.00%	15.00%	30.00%	30.00%	15.00%	40.00%	40.00%	20.00%	40.00%	35.00%	6.00%	6.00%
59	8.00%	15.00%	15.00%	30.00%	30.00%	15.00%	40.00%	40.00%	20.00%	40.00%	35.00%	6.00%	6.00%
60	13.00%	18.00%	25.00%	50.00%	50.00%	25.00%	70.00%	70.00%	40.00%	40.00%	40.00%	6.00%	10.00%
61	13.00%	18.00%	25.00%	50.00%	50.00%	25.00%	70.00%	70.00%	40.00%	40.00%	40.00%	6.00%	10.00%
62	13.00%	18.00%	25.00%	50.00%	50.00%	25.00%	70.00%	70.00%	40.00%	40.00%	40.00%	8.00%	25.00%
63	13.00%	18.00%	25.00%	50.00%	50.00%	25.00%	70.00%	70.00%	40.00%	40.00%	40.00%	8.00%	25.00%
64	13.00%	18.00%	25.00%	50.00%	50.00%	25.00%	70.00%	70.00%	40.00%	40.00%	40.00%	8.00%	25.00%
65	20.00%	25.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	20.00%	30.00%
66	20.00%	25.00%										20.00%	30.00%
67	20.00%	25.00%										20.00%	30.00%
68	20.00%	25.00%										20.00%	30.00%
69	20.00%	25.00%										20.00%	30.00%
70	40.00%	40.00%										50.00%	50.00%
71	40.00%	40.00%										50.00%	50.00%
72	40.00%	40.00%										50.00%	50.00%
73	40.00%	40.00%										50.00%	50.00%
74	40.00%	40.00%										50.00%	50.00%
75	100.00%	100.00%										100.00%	100.00%

Assumption for DRSP and DROP eligible members are as follows:

	Group E (DROP)	Group F (DRSP)	Group G (DROP)
Percent Assumed to Participate	75%	75%	75%
Average Years of Participation	3 years	3 years	3 years

Actuarial Valuation Assumptions (Continued)

Assumed Additional Sick Leave Credit: Members are assumed to accumulate additional service credit at termination or retirement for unused sick leave credit up to a maximum of 2 years.

Group	Years of Sick Leave Per Year of Credited Service
A	0.022
E, J	0.025
F	0.040
G	0.031
H	0.016

Marital Status: It is assumed that 80 percent of active participants have an eligible spouse. The male spouse is assumed to be three years older than the female spouse.

Form of Payment:

Plan	Normal Form	Assumed in Valuation
Mandatory Integrated	Life Annuity, guaranteed returned employee contributions with interest	3 Year Certain and Continuous Annuity
Optional Integrated	Life Annuity with 120 monthly payments guaranteed	10 Year Certain and Continuous Annuity
Optional Non-Integrated	Life Annuity with 120 monthly payments guaranteed	10 Year Certain and Continuous Annuity
GRIP	Lump Sum	Lump Sum at Termination or Retirement

Benefit Service: Exact fractional years of service are used to determine the amount of benefit payable.

Decrement Timing: All decrements are assumed to occur at the middle of the year.

Decrement Operation: Turnover decrements do not operate after the member reaches retirement eligibility.

Eligibility Testing: Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.

Pay Increase Timing: End of (fiscal) year.

Actuarial Valuation Assumptions (Continued)

Expenses: Assumed administrative expenses were added to the Normal Cost and are based on 105 percent of the average of the administrative expenses over the past 3 years. The assumed amount added to the Normal Cost is:

Valuation	Actual Administrative Expenses				Assumed Expenses
Year	3 Years Prior	2 Years Prior	1 Year Prior	3 Year Average	Added to Normal Cost
2016	$ 2,953,807	$ 2,684,560	$ 3,014,055	$ 2,884,141	$ 3,028,300
2017	2,684,560	3,014,055	3,185,769	2,961,461	3,109,500
2018	3,014,055	3,185,769	2,870,683	3,023,502	3,174,700

Assumptions for Missing or Incomplete Data:

Active members:
If payroll was not provided, the current year payroll was set equal to the prior year payroll. For new hires, the current year payroll was set equal to the average payroll for new hires in the same group (A, E, J, F, G, H and GRIP).

Vesting service and credited service were calculated for GRIP members based on date of hire and the valuation date.

Retired members:
If a beneficiary date of birth was not provided for members with a joint and survivor option, it was assumed that there was a beneficiary and males are three years older than their female spouses.

SECTION D

BENEFIT PROVISIONS

Brief Summary of Plan Provisions as of July 1, 2018

Following is a summary of the major plan provisions used in the valuation summarized in this report. Montgomery County is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report. Moreover, these plan provisions may be susceptible to different interpretations, each of which could be reasonable, and the different interpretations could lead to different valuation results.

1. Effective Date of the Plan

   August 15, 1965. Latest changes to the plan were made for group A, group E, group F, group G, group H, group J and GRIP members in FY11 and were reflected in the 2011 actuarial valuation. Some of the changes were effective July 1, 2011, while others were effective July 1, 2012.

2. Employee Eligibility Requirements

   A. Optional non-integrated retirement plan: Employees enrolled prior to July 1, 1978, who do not elect to join the integrated retirement plan.

   B. Optional integrated plan: Employees enrolled prior to July 1, 1978, who elect to join the integrated retirement plan.

   C. Mandatory integrated retirement plan: Employees enrolled on or after July 1, 1978. The Plan is closed to Non-Public Safety employees hired or rehired after September 30, 1994.

3. Membership Groups and Eligibility

   - Group A: Any employee who is not eligible for coverage under another membership group.

   - Group B: Any correctional officer, fire prevention officer, or deputy sheriff appointed or promoted to the position on or before June 30, 1978 who has not elected to transfer to another membership group.

   - Group D: Any full-time police officer appointed on or before August 15, 1965, who has been continuously employed as a police officer and has not elected to transfer to any other membership group.

   - Group E: The chief administrative officer, the director of the council staff, the hearing examiners, the county attorney and each head of a principal department, office or agency of the county government, if appointed before July 30, 1978, or a member having held such position on or before October 1, 1972. Any sworn deputy sheriff and such correctional staff as designated by the chief administrative officer. Non-correctional officers were moved to Group J.

   - Group F: Any sworn police officer who is not eligible for coverage under another membership group.

- Group G: Any paid firefighter, paid fire officer or paid rescue service personnel not eligible for coverage under another membership group.
- Group H: Any member, including any probationary employee, who holds a bargaining unit position, unless the member is eligible for membership in Groups B, D, E, F or G.
- Group J: Group J was established as of December 21, 2016. Non-correctional officer employees hired prior to December 21, 2016, who participated in Group E were transferred to Group J on May 28, 2017. Group J members are not eligible for Deferred Retirement Option Plan (DROP) coverage.

4. Member Contributions as a Percent of Regular Base Earnings

Effective July 1, 1989, member contributions are pre-tax and interest shall be credited annually on each member's accumulated contributions at a 4.0 percent annual rate.

A. Optional non-integrated plan:

	Prior to 7/1/2001	Effective 7/1/2001	Effective 7/1/2011	Effective 7/1/2012 and After
Group A	6%	6%	7%	8%
Group B [1]	7%	n/a	n/a	n/a
Group D [2]	n/a	n/a	n/a	n/a
Group E, J	7½%	8½%	9½%	10½%
Group F	7½%	8½%	9½%	10½%
Group G	7½%	8½%	9½%	10½%
Group H	6%	6%	7%	8%

[1] *The last Group B member retired August 1, 1998*
[2] *The last Group D member retired November 1, 1992*

B. Optional integrated plan:

	Prior to 7/1/2001 [1]		Effective 7/1/2001 [1]		Effective 7/1/2011		Effective 7/1/2012 and After	
	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB
Group A	3%	6%	4%	6%	5%	7%	6%	8%
Group B [2]	3½%	7%	4½%	7%	n/a	n/a	n/a	n/a
Group D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Group E, J	3¾%	7½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group F	4%	8%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group G with less than 25 years of service								
	4¾%	8½%	5½%	9¼%	6½%	10¼%	7½%	11¼%
Group G with at least 25 years of service								
	4¾%	8½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group H	3%	6%	4%	6%	5%	7%	6%	8%

[1] *7/1/2007 for Group G*
[2] *The last Group B member retired February 1, 2008*

SSTWB means Social Security Taxable Wage Base.

C. Mandatory integrated plan:

	Prior to 7/1/2001 [1]		Effective 7/1/2001 [1]		Effective 7/1/2011		Effective 7/1/2012 and After	
	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB	Up to SSTWB	In excess of SSTWB
Group A	3%	6%	4%	6%	5%	7%	6%	8%
Group B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Group D	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Group E, J	3¾%	7½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group F	4%	8%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group G with less than 25 years of service								
	4¾%	8½%	5½%	9¼%	6½%	10¼%	7½%	11¼%
Group G with at least 25 years of service								
	4¾%	8½%	4¾%	8½%	5¾%	9½%	6¾%	10½%
Group H	3%	6%	4%	6%	5%	7%	6%	8%

[1] *7/1/2007 for Group G*

5. Credited Service

A member's credited service is the total service rendered under the Employees' Retirement System of Montgomery County, plus credited service earned under State of Maryland and/or Montgomery County Police Relief and Retirement Fund Law or any other Maryland Public Plan, plus any purchased prior service or granted.

A. Full-time: Full-time members receive one year of credited service for rendering the full normal working time in a 12-month period.

B. Part-time: Part-time members working less than the normal scheduled workweek for full-time employees on a continuing basis shall receive one year of credited service for each 12-month period.

C. Combined part-time and full-time: Combined part-time and full-time employees will receive one month of credited service for 176 hours worked each fiscal year. Accumulated hours of 88 to 176 or 15 days or more in any calendar month will equal one month of credited service.

D. Sick Leave: Any employee whose retirement is effective on or after May 1, 1970, will have 176 hours of accumulated sick leave equivalent to one month of credited service up to a maximum of 4,224 hours. Accumulated sick leave of less than 11 days shall not be credited; 11 to 22 days shall be credited as one month for retirement purposes. Any member who vests on or after October 1, 1971, may have sick leave credited for vesting purposes on the same basis.

6. Average Final Earnings

For members enrolled on or before June 30, 1978, average final earnings are equal to the regular earnings for the 12-month period immediately preceding retirement, or any consecutive 12-month period, if greater.

For members enrolled on or after July 1, 1978, average final earnings are equal to the average of regular annual earnings for the 36-month period immediately preceding retirement, or any consecutive 36-month period, if greater.

7. Social Security Wage Base

For any particular year, the maximum amount of earnings creditable for benefit computation purposes under the Old Age, Survivors and Disabilities Insurance Program established by the Federal Social Security Act.

Year	Social Security Taxable Wage Base
2011	$106,800
2012	$110,100
2013	$113,700
2014	$117,000
2015	$118,500
2016	$118,500
2017	$127,200
2018	$128,400

8. Social Security Maximum Compensation Level

The maximum dollar amount of earnings upon which Social Security benefits are based, assuming: (1) an employee's annual compensation is at least as great as the taxable wage base each year, for a 35-year period through the year in which the employee attains Social Security Retirement Age, (2) the employee remained in covered employment during each calendar year, (3) the taxable wage base stays level from date of retirement to Social Security Retirement Age.

9. Social Security Retirement Age

- Age 65 for employees born prior to January 1, 1938.
- Age 66 for employees born on or after January 1, 1938, and prior to January 1, 1955.
- Age 67 for employees born on or after January 1, 1955.

10. Regular Earnings

Gross pay for actual hours worked, excluding overtime.

Imputed Compensation for FY2010 only (effective July 1, 2009):

- Regular earnings for a Group A, E, J or H member who is employed on July 1, 2009, includes amounts as if the member had received an increase of 4.5% in the member's gross pay as of July 1, 2009, except for the purpose of calculating a member's contribution.

- Regular earnings for a Group F member who is employed on July 1, 2009, includes amounts as if the member had received an increase of 4.25 percent in the member's gross pay as of July 1, 2009, except for the purpose of calculating a member's contribution.
- Regular earnings for a Group G member who is employed on July 1, 2009, includes amounts as if the member had received an increase of 4.00 percent in the member's gross pay as of July 1, 2009, except for the purpose of calculating a member's contribution.

11. Benefits

A. Normal Retirement Date:

Age and Service Requirement:

- Group A: Age 60 and five years of credited service, or age 55 and 30 years of credited service *(after June 30, 2002, age 60 and five years of credited service, or age 50 and 30 years of credited service for members who are Police Telecommunicators)*.

- Group B: Age 55 and 15 years of credited service, or age 51 and 30 years of credited service.

- Group D: The requirements contained in the police relief and retirement fund law of the county.

- Group E, J: Age 55 and 15 years of credited service, or age 46 and 25 years of credited service.

- Group F: Age 55 and 15 years of credited service, or 25 years of credited service (effective July 1, 2008; previously, age 55 and 15 years of credited service, or age 46 and 25 years of credited service).

- Group G: Age 55 and 15 years of credited service, or any age with 20 years of credited service (effective July 1, 2007; previously age 55 and 15 years of credited service, or any age with 25 years of credited service).

- Group H: Age 60 and five years of credited service, or age 55 and 30 years of credited service (after June 30, 2002, age 60 and five years of credited service, or age 50 and 30 years of credited service for members who are Police Telecommunicators or members of the Service, Labor and Trades (SLT) bargaining unit).

B. Benefit Amount:

1. Optional non-integrated plan: All groups other than Group E, J, F or G – 2 percent of average final earnings multiplied by years of credited service, up to a maximum of 36 years, plus sick leave credits.

   - Group E, J: 2.4 percent of average final earnings for each of the first 25 years of credited service, plus 2 percent of average final earnings for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits. Sick leave credit in excess of 25 years is credited at 2 percent of average final earnings.

   - Group F: 2.4 percent of average final earnings for each year of credited service, up to a maximum of 36 years, plus sick leave credits.

   - Group G: 2.5 percent of average final earnings for each of the first 20 years of credited service, plus 2 percent of average final earnings for each year of credited service after 20 years up to a maximum of 31 years, plus sick leave credits (effective July 1, 2007; previously 2 percent of average final earnings for each of the first 20 years of credited service, plus 3 percent of average final earnings for each year of credited service from 21st year through 24th year, plus 8 percent of average final earnings for the 25th year of credited service, plus 2 percent of average final earnings for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits).

2. Integrated plans:

   a. From date of retirement to Social Security Retirement Age:

      - For groups other than Groups E, J, F or G: 2 percent of average final earnings multiplied by years of credited service, up to a maximum of 36 years, plus sick leave credits.

      - Group E, J: 2.4 percent of average final earnings for each of the first 25 years of credited service, plus 2 percent of average final earnings for each year of credited service more than 25 years up to a maximum of 31 years, plus sick leave credits.

      - Group F: 2.4 percent of average final earnings multiplied by years of credited service, up to a maximum of 36 years of service including sick leave credits. (Effective 7/1/2008; previously 2.4 percent of average final earnings for each year of credited service, up to a maximum of 30 years, plus sick leave credits. Sick leave credit in excess of 30 years is credited at 2 percent of average final earnings).

      - Group G: 2.5 percent of average final earnings for each of the first 20 years of credited service, plus 2 percent of average final earnings for each year of credited service after 20 years up to a maximum of 31 years, plus sick leave credits (effective 7/1/2007; previously 2 percent of average final earnings for each of the first 20 years of credited service, plus 3 percent of average final earnings for each year of credited service from 21st year through 24th year, plus 8 percent of average final earnings for the 25th year of credited service, plus 2 percent of average final earnings for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits).

b. From attainment of Social Security Retirement Age:

- For Groups A, B or H: 1.25 percent of average final earnings up to Social Security maximum covered compensation plus 2 percent of average final earnings above Social Security maximum covered compensation, multiplied by years of credited service up to 36 years, plus sick leave credits.

- Group D: 1 percent of average final earnings up to Social Security maximum covered compensation plus 2 percent of average final earnings above Social Security maximum covered compensation, multiplied by years of credited service up to 36 years, plus sick leave credits.

- Group E, J: 1.25 percent (effective 7/1/2009: 1.65 percent) of average final earnings up to Social Security maximum covered compensation for each year of credited service up to a maximum of 31 years plus sick leave credits, plus 2.4 percent of average final earnings above Social Security maximum covered compensation for each of the first 25 years, and 2 percent of average final earnings above Social Security maximum covered compensation for each year of credited service after 25 years up to a maximum of 31 years, plus sick leave credits. Sick leave credits used for years in excess of 25 years is credited at 2 percent of average final earnings above Social Security maximum covered compensation.

- Group F: 1.65 percent of average final earnings up to Social Security maximum covered compensation for each year of credited service up to a maximum of 36 years including sick leave credits and 2.4 percent of average final earnings above Social Security maximum covered compensation for each year of credited service up to a maximum of 36 years including sick leave credits. (Effective 7/1/2008; previously 1.65 percent of average final earnings up to Social Security maximum covered compensation for each year of credited service up to a maximum of 30 years, plus 1.25 percent of average final earnings up to Social Security maximum covered compensation for each year of credited service in excess of 30 years, plus sick leave credits, and 2.4 percent of average final earnings above Social Security maximum covered compensation for each year of credited service up to a maximum of 30 years, plus sick leave credits. Sick leave credits used for years in excess of 30 years is credited at 2 percent of average final earnings above Social Security maximum covered compensation).

- Group G: 1.71875 percent of average final earnings for each of the first 20 years of credited service, plus 1.375 percent of average final earnings for each year of credited service after 20 years up to a maximum of 31 years, plus sick leave credits.

12. Early Pension

A. Age and service requirements:

- Group A: Age 50 and 15 years of credited service, or age 45 and 20 years of credited service.
- Group B: Age 45 and 15 years of credited service.
- Group D: Not applicable.
- Group E, J: Age 45 and 15 years of credited service, or age 41 and 20 years of credited service.
- Group F: Age 45 and 15 years of credited service, or age 41 and 20 years of credited service.
- Group G: Only normal retirement is allowed (effective 7/1/2007, previously age 45 and 15 years of credited service, or age 41 and 20 years of credited service).
- Group H: Age 50 with 15 years of credited service, or age 45 and 20 years of credited service.

B. Benefit amount: Regular pension accrued, reduced by the following schedule:

MONTHS EARLY	YEARS EARLY										
	0	1	2	3	4	5	6	7	8	9	10
0	100.00%	98.00%	95.00%	91.00%	86.00%	80.00%	72.00%	64.00%	56.00%	48.00%	40.00%
1	99.83%	97.75%	94.67%	90.58%	85.50%	79.33%	71.33%	63.33%	55.33%	47.33%	
2	99.67%	97.50%	94.33%	90.17%	85.00%	78.67%	70.67%	62.67%	54.67%	46.67%	
3	99.50%	97.25%	94.00%	89.75%	84.50%	78.00%	70.00%	62.00%	54.00%	46.00%	
4	99.33%	97.00%	93.67%	89.33%	84.00%	77.33%	69.33%	61.33%	53.33%	45.33%	
5	99.17%	96.75%	93.33%	88.92%	83.50%	76.67%	68.67%	60.67%	52.67%	44.67%	
6	99.00%	96.50%	93.00%	88.50%	83.00%	76.00%	68.00%	60.00%	52.00%	44.00%	
7	98.83%	96.25%	92.67%	88.08%	82.50%	75.33%	67.33%	59.33%	51.33%	43.33%	
8	98.67%	96.00%	92.33%	87.67%	82.00%	74.67%	66.67%	58.67%	50.67%	42.67%	
9	98.50%	95.75%	92.00%	87.25%	81.50%	74.00%	66.00%	58.00%	50.00%	42.00%	
10	98.33%	95.50%	91.67%	86.83%	81.00%	73.33%	65.33%	57.33%	49.33%	41.33%	
11	98.17%	95.25%	91.33%	86.42%	80.50%	72.67%	64.67%	56.67%	48.67%	40.67%	

Unreduced early retirement benefits are available if the member's age and service equals 85 with at least 35 years of credited service.

13. Disability Pension

A. Non-service-connected disability retirement:

Age and service requirement: Five years of credited service.

Amount: The greater of the accrued benefit under 11(B) or 33⅓ percent of final earnings.

B. Service-connected disability retirement:

Age and service requirement: None

Benefit amount:

1. For total incapacity: The greater of the accrued benefit under 11(B) or 66⅔ percent of final earnings.

2. For Group G members: Benefits described in (1.) above are modified as follows:
    - The minimum benefit is 70 percent of final earnings if the member meets the definition of Social Security disability.

    - The minimum benefit is 52½ percent of final earnings if the member is disabled but does not qualify for the 70 percent minimum benefit above. The Chief Administrative Officer of the County may offer a disabled member an alternative position with the County with a 5 percent pay increase in lieu of this disability benefit.

    - Certain causes of disability are automatically deemed to be service-connected.

Effective July 1, 2012, the service-connected benefit amount is modified as follows:

- Total incapacity: the minimum benefit is 70 percent of final earnings if the Disability Review Panel approves. If the member has been granted Social Security disability benefits, the Disability Review Panel must recommend total incapacity status if the Social Security award is based primarily on the impairment for which plan benefits are paid.

- Partial incapacity: the minimum benefit is 52½ percent of final earnings if the member is disabled but does not qualify for the 70 percent minimum benefit above.

- Group G: The Chief Administrative Officer of the County may offer a disabled member an alternative position with the County with a 5 percent pay increase in lieu of this disability benefit. This does not apply to Group F.

14. <u>Termination of Employment</u>

A. Vesting provision:

Service requirement: Effective July 1, 1989, all employees who render five or more years of credited service become fully vested. Previously, vesting was based on a five to 10-year graded vesting schedule. Elected officials become vested after five years of service with a minimum monthly benefit of $150.

Benefit amount: The monthly vested pension payable at normal retirement date is the benefit determined according to the normal retirement pension provisions based on credited service to the date of termination.

Effective July 1, 2010, unreduced benefit commencement date provision clarification for future terminated vested members: The unreduced benefit commencement date for groups A and H is age 60. The comparable date for groups E, J, F and G members is age 70 ½ for members who are not 55 years old with 15 years of service at their termination date.

B. Return of employee contributions:

A member's contributions plus interest will be refunded if:

- A member's service with the county terminates before the member becomes eligible to vest.
- A member eligible to vest terminates service and voluntarily elects to withdraw.

15. Discontinued Service Pension

Applies if employment ends because of an administrative action and participant has 10 or more years of continuous service. Discontinued service pension begins at early retirement date but no reductions are made for early retirement. A participant may not receive a discontinued service pension if the participant was terminated for cause or resigned.

A. Groups A, E, J, F, G and H

1. Optional Non-Integrated plan members and Optional Non-Integrated plan members who elected to transfer to the Optional Integrated plan on or before September 26, 1983.

   Eligibility: 10 or more years of continuous or credited service, and not an elected or appointed member.

   Benefit amount: The amount of pension that the participant would receive for a regular retirement modified as follows:

   - Substitute final earnings for average final earnings
   - Add 5 percent of final earnings
   - No reduction at Social Security Normal Retirement Age

2. Optional Non-Integrated plan members who transferred to the Optional Integrated plan after September 26, 1983.

   Eligibility: 10 or more years of credited or continuous service, and not an elected or appointed member.

Benefit amount: The amount of pension that the participant would receive for a regular retirement modified as follows:

- Substitute final earnings for average final earnings
- Add 5 percent of final earnings

3. Mandatory Integrated plan:

   Eligibility: 10 or more years of continuous service and not an elected or appointed member.

   Benefit amount: The amount of pension that the participant would receive for a regular retirement without any reduction for early retirement.

B. Elected and appointed members:

On or before September 26, 1983

Eligibility: 10 or more years of credited service and enrolled or re-enrolled *on or before* September 26, 1983, or submits an application to transfer from the optional plan to the integrated plan *before* September 26, 1983.

Benefit amount: Regular pension accrued under 11(B) except that “final earnings” replaces “average final earnings” in the calculation, minimum $300.00 monthly.

After September 26, 1983

Eligibility: 10 or more years of credited service and enrolled or re-enrolled after September 26, 1983, or submits an application to transfer from the optional plan to the integrated plan after September 26, 1983.

Benefit amount: Regular pension accrued under 11(B) except that “final earnings” replaces “average final earnings” in the calculation, minimum $300.00 monthly.

C. Notwithstanding the above provisions, any member covered by this plan on April 1, 1970, who has reached early retirement date with 20 years of continuous or credited service, is eligible to receive a pension commencing immediately in an amount not less than 50 percent of final earnings.

16. <u>Death Benefits</u>

A. Non service-connected:

Eligibility: None.

Benefit amount:

1. Return of member contributions with interest;

plus

2. 50 percent of average final earnings if the member was a member of the Employees' Retirement System on or before December 31, 1966, and was a Maryland State plan member on August 15, 1965.

or

3. Alternate death benefits listed under (C.) below.

B. Service-connected:

Eligibility requirement: None

Benefit amount:

1. The spouse* will receive a benefit equal to 25 percent of the member's final earnings, with a minimum of $250.00 per month. The child will receive a benefit equal to 5 percent of the member's final earnings with a minimum of $50.00 per month to age 21 or life if disabled;

plus

2. 50 percent of average final earnings if the member was a member of the Employees' Retirement System on or before December 31, 1966, and was a Maryland State plan member on August 15, 1965;

or

3. Alternate death benefits listed under (C.) below.

4. For Group F and Group G members: if the member dies while performing duties for the County, the plan will pay death benefits to the spouse or domestic partner and child as if they were receiving a service-connected disability at the 70 percent minimum benefit level at the time of death and had elected the 100 percent joint and survivor option.

C. Alternative death benefits:

Eligibility: Member was eligible for vesting or retirement.

Benefit amount:

1. Spouse* or child may elect to receive the amount that would have been paid had the member elected to receive a 100 percent joint and survivor pension; plus

2. 50 percent of average final earnings if the member was a member of the Employees' Retirement System on or before December 31, 1966, and was a Maryland State plan member at August 15, 1965.

** Domestic partners who meet the requirements for domestic partnership are also eligible.*

17. Forms of Payment

A. Normal form:

1. Optional non-integrated plan: Lifetime benefit, with first 120 monthly payments guaranteed.

2. Optional integrated plan: Lifetime benefit, with first 120 monthly payments guaranteed.

3. Mandatory integrated plan: Lifetime benefit with refund of remaining contributions and interest.

B. Optional forms: A member may elect an optional form of pension actuarially equivalent to the normal form of retirement, otherwise payable, excluding members who qualified for a non-service-connected disability retirement before reaching early retirement date. Available forms of payment are:

Modified Cash Refund Annuity	Lifetime benefit with return of employee contributions with interest guaranteed
10-Year Certain and Continuous Annuity	Lifetime benefit with 120 monthly payments guaranteed
Social Security Adjustment Option Combined with either Modified Cash Refund Annuity or a 10-Year Certain and Continuous Annuity	Provides a nearly level total income, from the Plan and Social Security, from date of retirement to date of death. At death, payment will continue to the beneficiary if the guarantee provided under the normal form of payment has not been exhausted.
Joint and Survivor Annuity	Provides a lifetime benefit and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent. A guaranteed payment of employee contributions with interest is provided for the mandatory plan and 120 monthly payments from date of retirement for the optional plans.
Joint and Survivor Annuity with Pop-Up	Provides a lifetime benefit and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent. If the beneficiary predeceases or divorces from the retiree, the monthly benefit pops up to the amount it would have been under the Modified Cash Refund option. A guaranteed payment of employee contributions with interest is provided.
Social Security Adjustment Option Combined with Joint and Survivor Annuity Option	Provides a nearly level total income, from the Plan and Social Security, from date of retirement to date of death and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent.
Social Security Adjustment Option Combined with Joint and Survivor Annuity Pop-Up Option	Provides a nearly level total income, from the Plan and Social Security, from date of retirement to date of death and a continuation of a percentage of the retiree benefit upon death to the beneficiary. The minimum percentage is 10 percent. If the beneficiary predeceases or divorces from the retiree, the monthly benefit pops up to the amount it would have been under the Modified Cash Refund option. A guaranteed payment of employee contributions with interest is provided.

18. Post-Retirement Increases

Optional non-integrated plan: Annual adjustment to the benefit equal to 100 percent of the change in Consumer Price Index for the Washington Metro Area for years and months of credited service before July 1, 2011. For years and months of credited service after June 30, 2011, any adjustment will not exceed 2.5 percent.

Optional integrated plan: Annual adjustment to the benefit equal to 100 percent of the change in Consumer Price Index for the Washington Metro Area for years and months of credited service before July 1, 2011. For years and months of credited service after June 30, 2011, any adjustment will not exceed 2.5 percent.

Mandatory integrated plan:

- Participants who enrolled on or after July 1, 1978, and retired before November 1, 2001 – Annual adjustment to the benefit equal to 60 percent of CPI increase, limited to 5 percent. However, if over age 65 or disabled, then the maximum limit of 5 percent does not apply.

- Participants who enrolled on or after July 1, 1978, and retired on or after November 1, 2001 – Annual adjustment to the benefit equal to 100 percent of the change in Consumer Price Index for the Washington Metro Area up to 3 percent, plus 60 percent of any change in Consumer Price Index greater than 3 percent, not to exceed a total of 7.5 percent for years and months of credited service before July 1, 2011. The maximum 7.5 percent does not apply to disability retirees or retirees over age 65 for years of service before July 1, 2011. For years and months of credited service after June 30, 2011, any adjustment will not exceed 2.5 percent.

Disability Benefits:

For a disability occurring after June 30, 2011, as determined by the Disability Review Panel, any postretirement adjustment of the disability retirement benefit will not exceed 2.5 percent.

Sick Leave:

For purposes of applying any post-retirement adjustment, any sick leave will be credited as years and months of service as of the date of retirement. For participants who retire after July 1, 2011, any post-retirement adjustment will not exceed 2.5 percent on any sick leave credited as years and months of service.

DRSP Participants:

Effective July 1, 2011, any additional sick leave credited as years and months of service at DRSP exit is subject to the 2.5 percent post-retirement adjustment limit.

DROP Participants:

Effective July 1, 2011, any additional sick leave credited as years and months of service at DROP exit is subject to the 2.5 percent post-retirement adjustment limit.

Transferred Service:

For purposes of applying any post-retirement adjustment, any transferred service will be credited as years and months of service as of the date a properly completed application is filed with the Benefits Team. For applications to transfer service credit filed after June 30, 2011, any post-retirement adjustment will not exceed 2.5 percent on the transferred service.
Purchased Service:

For purposes of applying any post-retirement adjustment, any purchased service will be credited as years and months of service as of the date a properly completed application is filed with the Benefits Team. For applications to purchase service credit filed after June 30, 2011, any post-retirement adjustment will not exceed 2.5 percent on the purchased service.

19. Deferred Retirement Option Plan (DROP) for Group E *(effective 7/1/2015)*

A. Eligibility for DROP entry:

Any group E and J uniformed correctional officers or sworn deputy sheriffs who are at least 55 years old and have at least 15 years of credited service or have attained age 46 and 25 years of credited service may participate in the DROP plan.

B. Exit from DROP:

The first day of any month not to exceed 36 months.

C. The DROP account is:

- A member-directed account outside the System's usual investment.
- Credited with the investment gains and losses of the chosen investments.
- Credited with the monthly benefits that the member would have received if the member had retired at DROP entry.

Upon exit from DROP, the member can receive the DROP account as a lump sum payment or as actuarially equivalent monthly benefits.

D. Post-DROP monthly benefit:

The amount the participant would have received at DROP entry with post-retirement increases for the period in DROP.

E. Disability while in DROP:

Non-Service Connected: The member will receive a pension benefit calculated as if they retired with a non-service connected disability on the date they exited DROP and their DROP account.

Service Connected Disability: The member can elect (i) their DROP account and the post-DROP monthly benefit or (ii) a disability benefit calculated as if the member had never entered DROP.

F. Death while in DROP:

The beneficiary will receive the greater of (i) the death benefit that the beneficiary would have received if the member had died at DROP entry with post-retirement increases plus the DROP account or (ii) the death benefit calculated as if the member had never entered DROP.

G. Member Contributions:

Members do not contribute while in DROP.

20. <u>Discontinued Retirement Service Program (DRSP) for Group F</u> *(effective 7/1/2008)*

A. Eligibility for DRSP entry:

Any group F member who has attained age 46 and 25 years of credited service may participate in the DRSP plan.

B. Exit from DRSP:

The first day of any month not to exceed 36 months.

C. The DRSP account is:

- A member-directed account outside the System's usual investment.
- Credited with the investment gains and losses of the chosen investments.
- Credited with the monthly benefits that the member would have received if the member had retired at DRSP entry.

Upon exit from DRSP, the member can receive the DRSP account as a lump sum payment or as actuarially equivalent monthly benefits.

D. Post-DRSP monthly benefit:

The amount the participant would have received at DRSP entry with post-retirement increases for the period in DRSP.

E. Disability while in DRSP:

Non-Service Connected: The member will receive a pension benefit calculated as if they retired with a non-service connected disability on the date they exited DRSP and their DRSP account.

Service Connected Disability: The member can elect (i) their DRSP account and the post-DRSP monthly benefit or (ii) a disability benefit calculated as if the member had never entered DRSP.

F. Death while in DRSP:

The beneficiary will receive the greater of (i) the death benefit that the beneficiary would have received if the member had died at DRSP entry with post-retirement increases plus the DRSP account or (ii) the death benefit calculated as if the member had never entered DRSP.

G. Member Contributions:

Members do not contribute while in DRSP.

21. Deferred Retirement Option Plan (DROP) for Group G

A. Eligibility for DROP entry:

Any group G member who has met the age and service requirements for a normal retirement may participate in the DROP plan *(effective 7/1/2007; previously only Group G members with at least 25 years of credited service).*

B. Exit from DROP:

The first day of any month not to exceed 36 months.

C. The DROP account collects:

- The member's contributions while in DROP.
- The monthly benefits that the member would have received if the member had retired at DROP entry.
- 8.25 percent interest on the amount in the account.

Upon exit from DROP, the member can receive the DROP account as a lump sum payment or as actuarially equivalent monthly benefits.

D. Post-DROP monthly benefit:

The amount the participant would have received at DROP entry with post-retirement increases for the period in DROP.

E. Disability while in DROP:

Non-Service Connected: The member will receive a pension benefit calculated as if they retired with a non-service connected disability on the date they entered DROP and their DROP account. Service Connected Disability: The member can elect (i) their DROP account and the post-DROP monthly benefit or (ii) a disability benefit calculated as if the member had never entered DROP.

F. Death while in DROP:

The beneficiary will receive the greater of (i) the death benefit that the beneficiary would have received if the member had died at DROP entry with post-retirement increases plus the DROP account or (ii) the death benefit calculated as if the member had never entered DROP.

22. Guaranteed Retirement Income Plan *(effective 7/1/2009)*

A. Eligibility for GRIP entry:

- Full-time Non-Public Safety employees hired on or after July 1, 2009, who do not participate in the retirement savings plan may make a one-time irrevocable election to participate in the GRIP within the first 150 days of full time employment. Participation in the plan begins 180 days after employment.
- Part-time or temporary Non-Public Safety employees hired on or after October 1, 1994, who do not participate in the retirement savings plan may make a one-time irrevocable election to participate in the GRIP after at least 150 days of employment. Participation in the plan begins 180 days after employment.

B. The GRIP account collects:

- Member contributions (pre-tax unless noted otherwise)
  a. Non-public safety employees: 4 percent of regular base earnings up to the maximum Social Security wage base plus 8 percent of the excess.

  b. Public safety employees: 3 percent of regular base earnings up to the maximum Social Security wage base plus 6 percent of the excess.

  c. Effective July 1, 2011, members had the option to contribute an additional 2 percent of regular earnings for service between June 30, 2011 and July 1, 2012, on an after-tax basis by making an election in writing on or before September 1, 2011.

- Employer contributions

  a. Non-public safety employees: 8 percent of regular base earnings. Effective July 1, 2011, the employer contribution was 6 percent of regular base earnings for service between June 30, 2011, and July 1, 2012.

b. Public safety employees: 10 percent of regular base earnings. Effective July 1, 2011, the employer contribution was 8 percent of regular base earnings for service between June 30, 2011, and July 1, 2012.

- 7.25 percent interest credited from the date of contribution.

C. Vesting Schedule:

- Employees are 100 percent vested in employee contributions at all times.
- County contributions are 0 percent vested from 0-3 years of credited service and 100 percent vested at 3 or more years of credited service.
- Participants become 100 percent vested at death or disability.

D. Normal Form of Payment – Lump sum

E. Optional Forms of Payment:

- Direct rollover
- Life annuity purchased from MCERP

F. Eligible Agencies:

- CC – credit union employees (outside agency)
- CM – union employees (represented)
- CN – non-bargaining employees (non-represented)
- CP – public safety employees
- CZ – elected officials who transferred from the EOP

23. <u>Retirement Incentive Program</u> *(effective 6/1/2010 for one time election)*

The Retirement Incentive Program offered a one-time election in June 2010 and provided enhanced benefits to 64 group A, group H and group E participants. Each retiree received up to a $35,000 lump sum payment. The early retirement reductions that would normally apply were reduced for some participants and eliminated for others.

24. <u>Elected Officials' Plan (EOP)</u>

The Elected Officials' Plan is a defined contribution plan within the Employees' Retirement System.

A. Participant and Eligibility:

- Elected officials are eligible to participate in the EOP. An elected official is the sheriff, the state's attorney, a County Council member, the County Executive and any County official elected for a fixed term as specifically provided in the Charter.
- Unless an elected official was an active member of a County retirement plan before becoming an elected official, which includes being on leave without pay, an elected official

must participate in the EOP upon becoming an elected official. An elected official who chooses to continue to participate in another County retirement plan may become a member of the EOP at any time while an elected official after terminating participation in the other plan.

B. Transfer to the Guaranteed Retirement Income Plan (GRIP):

- An individual who is an elected official after December 6, 2010, may make a one-time irrevocable decision to terminate participation in the EOP and participate in the GRIP. An elected official must elect to participate in the GRIP during the first 150 days after becoming an elected official. Participation will begin on the first pay period after the elected official has been in office for 180 days. The elected official will have his or her EOP account transferred to the GRIP and the amount transferred into the GRIP will become the elected official's beginning GRIP account balance.
- An elected official who does not elect to participate in the GRIP must continue to participate in the EOP.

C. EOP Contributions:

- Employee contributions: 4 percent of pay (regular earnings) on a before-tax basis. Members may make an additional voluntary after tax contributions into the account of up to 7 percent of bi-weekly gross pay.
- Employer contributions: 8 percent of pay (regular earnings before taxes).

25. Changes in plan provisions

There were no changes in plan provisions since the last actuarial valuation as of July 1, 2017.

SECTION E

GLOSSARY OF TERMS

Glossary of Terms

Actuarial Accrued Liability (AAL). The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Actuarial Assumptions. Estimates of future plan experience such as investment return, expected lifetimes and the likelihood of receiving a pension from the Pension Plan. Demographic, or "people" assumptions, include rates of mortality, retirement and separation. Economic, or "money" assumptions, include expected investment return, inflation and salary increases.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Present Value of Future Plan Benefits. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Value of Assets (AVA). Smoothed value of assets that recognizes the difference between the expected investment return using the valuation assumption of 7.50 percent and the actual investment return over a five-year period. Dampens volatility of asset value over time.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Annual Required Contribution. The sum of the normal cost and amortization of the unfunded actuarial accrued liability.

Asset Return. The net investment return for the asset divided by the mean asset value. Example: if $1.00 is invested and yields $1.075 after a year, the asset return is 7.50 percent.

Funded Ratio. The actuarial value of assets divided by the actuarial accrued liability. Measures the portion of the actuarial accrued liability that is currently funded.

Market Value of Assets (MVA). The value of assets currently held in the trust available to pay for benefits of the Pension Plan. Each of the investments in the trust is valued at market price which is the price at which buyers and sellers trade similar items in the open market

Normal Cost (NC). The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Unfunded Actuarial Accrued Liability (UAAL). The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."