

Montgomery County Employees' Retirement System

Actuarial Valuation as of July 1, 2020



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October 8, 2020

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, 2020 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, 2021, and ending on June 30, 2022. 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, 2020. 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.

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 used in this actuarial valuation are based on an experience review covering the period July 1, 2014 to July 1, 2018 and were first adopted for use beginning with the actuarial valuation as of July 1, 2019. We recommend a review of the price inflation assumption of 2.50 percent and the investment return assumption of 7.50 percent before the next actuarial valuation, as market conditions continue to be volatile.

The plan provisions have remained unchanged since the last valuation, performed as of July 1, 2019.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report reflects the impact of COVID-19 through June 30, 2020. However, this report does not reflect the longer term and still developing future impact of COVID-19, which is likely to further influence demographic experience and economic expectations. We will continue to monitor these developments and their impact.

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.

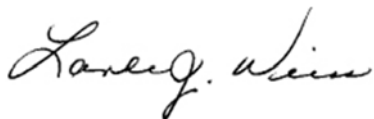
Lance J. Weiss and Amy Williams are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein.

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



Lance J. Weiss, E.A., M.A.A.A., F.C.A.
Senior Consultant and Team Leader



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Senior Consultant

LW/AW:rmn



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, 2020.

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, 2021; 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 6,204 active members (excluding DRSP and DROP) were included in the actuarial valuation as of July 1, 2020. Between the 2019 and 2020 actuarial valuations, the number of active employees increased by 201 members. The average annual actuarial valuation pay (excluding DRSP and DROP) increased by 2.2 percent, from \$79,397 to \$81,183 between the 2019 and 2020 actuarial valuation. The number of benefit recipients (including DRSP and DROP) increased from 6,731 to 6,783, or 0.8 percent, since the last actuarial valuation. The average monthly benefit increased by 0.6 percent, from \$3,295 to \$3,315. 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 last actuarial valuation as of July 1, 2019, and are based on an experience review covering the period July 1, 2014 to July 1, 2018. We recommend a review of the price inflation assumption of 2.50 percent and the investment return assumption of 7.50 percent before the next actuarial valuation, as market conditions continue to be volatile.

The assumption for administrative expenses is equal to 105 percent of the average of the prior three years' administrative expenses. This amount has decreased from \$3,192,200 to \$3,148,000.

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, 2019.

During the plan year ending June 30, 2020, the unfunded actuarial accrued liability ("UAAL") decreased from \$58,164,659 as of July 1, 2019, to \$34,993,927 as of July 1, 2020, which is a decrease of \$23,170,732. The key factors contributing to the decrease in the UAAL were (1) lower than expected cost of living (COLA) increases for retired members, (2) contributions under the funding policy that are expected to



Comments on the Actuarial Valuation (Continued)

decrease the UAAL, and (3) higher dollar contributions than expected. (The COLA increase was -0.088 percent compared to an assumed COLA increase of 2.50 percent from last year's actuarial valuation for benefits attributable to service prior to July 1, 2011, and an assumed COLA increase of 2.20 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 -0.053 percent compared to an assumption of 1.50 percent from last year's valuation.) The favorable experience was partially offset by unfavorable investment experience, higher salary increases than assumed and unfavorable demographic experience.

On a market value basis, the Plan assets had an investment return of approximately 3.41 percent¹ (net of investment expenses). Recognition of investment losses during fiscal years ending 2016 and 2020 were partially offset by recognition of the fiscal year end 2017, 2018 and 2019 investment gains. The net investment losses resulted in an estimated net asset rate of return of 6.87 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 98.7 percent to 99.2 percent on an actuarial value of assets basis, and decreased from 99.9 percent to 97.9 percent on a market value of assets basis between the 2019 and 2020 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.

¹ As provided by Montgomery County ERS.

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 Groups A and H (which are closed to new members) is amortized over a single closed period of 9 years (4 years remaining at the actuarial valuation as of July 1, 2020 to amortize the total unfunded liability). The unfunded liability as of July 1, 2015, for the Public Safety groups (Groups E, F and G), Group J and GRIP was amortized over a closed period of 20 years (15 years remaining at the actuarial valuation as of July 1, 2020) and the unfunded liability bases established in each subsequent year are amortized over separate 20-year closed periods.

We recommend a change to the amortization policy for Groups A and H (which are closed to new members). We have presented some alternatives for an update to the amortization policy in a separate letter.

The single equivalent amortization period for the System in total as of July 1, 2020, is 3.9 years. The single equivalent amortization period is 4 years for the closed Non-Public Safety groups (Groups A and H), 5.7 years for the non-GRIP open groups (Public Safety groups and Group J) and 11.9 years for GRIP as of July 1, 2020. The current unfunded liability as of July 1, 2020, is expected to be fully paid off after four years (at the end of fiscal year 2025) for Groups A and H and after 20 years (at the end of fiscal year 2041) for the open groups (Public Safety groups, Group J and GRIP). (Because most of the unfunded liability bases established after July 1, 2015 were negative, which results in amortization credits, the unfunded liability is expected to be fully paid off after 15 years for the non-GRIP open groups.)



Comments on the Actuarial Valuation (Continued)

The unfunded liability is amortized as a level percentage of payroll and assumes that total payroll will increase by 3.00 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.

However, if all assumptions are realized, the unfunded liability contribution will increase as a dollar amount by 3.00 percent each year. The payroll basis used in calculating the percentage of pay contribution for amortizing the unfunded liability for fiscal year 2022 reflects the assumption that fiscal year 2022 payroll will decrease from the payroll as of July 1, 2020 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, 2019 established the County contribution rate for fiscal year beginning July 1, 2020 and ending June 30, 2021. This actuarial valuation as of July 1, 2020, establishes the County contribution rate for fiscal year beginning July 1, 2021, and ending June 30, 2022.

Non-GRIP

The unfunded liability by group as of July 1, 2020, was calculated as the difference between the actuarial accrued liability and the actuarial value of assets as of July 1, 2020. The unfunded liability as of July 1, 2020 is amortized over a single closed four-year period for Groups A and H. The unfunded liability for Groups E, F, G and J, as of July 1, 2015, was amortized over an initial closed period of 20 years (15 years remaining at the actuarial valuation as of July 1, 2020) as a level percentage of payroll. The additional unfunded liability from each subsequent actuarial valuation, beginning with the actuarial valuation as of July 1, 2016, 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 2022 increased for Public Safety and decreased for non-Public Safety from the fiscal year 2021 County contribution rate. The increase in the County contribution rates for Public Safety was mainly attributable to unfavorable experience and slight increases in the normal cost rate. The decrease in the County contribution rates for non-Public Safety was mainly attributable to the lower retiree COLA increase than expected, which decreased the unfunded actuarial accrued liability.

The actuarial value of assets is currently approximately 101 percent of the market value of assets. There is \$56,478,422 in net asset losses currently being deferred (\$59,552,894 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 (Continued)

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 (15 years remaining at the actuarial valuation as of July 1, 2020) 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 2022 increased for GRIP members from the fiscal year 2021 rate. The increase in the County contribution rate is attributable to unfavorable plan experience and 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 0.4 percent lower than the County normal cost rate.

The actuarial value of GRIP assets is approximately 102 percent of the market value of assets. There is \$3,074,472 in net asset losses 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 an increase in the recommended County contribution as the remaining deferred asset losses are recognized.

Risk Measures

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; and
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.



Risk Measures

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:

	<u>2019</u>	<u>2020</u>
Ratio of the market value of assets to total payroll	9.06	8.60
Ratio of actuarial accrued liability to payroll	9.06	8.79
Ratio of actives to retirees and beneficiaries ¹	0.89	0.91
Ratio of net cash flow to market value of assets	-0.03	-0.04

¹ DRSP/DRDP 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, 2019 Results	July 1, 2020 Results
Membership Data			
Active Members		6,003	6,204
DRSP/DROP		171	176
Deferred Vested		543	529
Retirees and Beneficiaries		6,560	6,607
TOTAL		13,277	13,516
Plan Liabilities			
Actuarial Accrued Liability:			
Active Members	\$	1,392,815,876	\$ 1,424,564,557
DRSP/DROP		172,080,764	175,219,009
Deferred Vested		39,648,856	39,029,833
Retirees and Beneficiaries		2,715,615,576	2,789,234,942
TOTAL	\$	4,320,161,072	\$ 4,428,048,342
Actuarial Value of Assets at Valuation Date	\$	4,261,996,413	\$ 4,393,054,415
Unfunded (Overfunded) Actuarial Accrued Liability	\$	58,164,659	\$ 34,993,927
Funded Position of Plan's Actuarial Accrued Liability ¹		98.7 %	99.2 %
 Recommended Annual Contribution Requirements ²			
		Fiscal Year 2021	Fiscal Year 2022
Annual Normal Cost	\$	77,548,547	\$ 81,947,469
Normal Cost Expense Load		3,192,200	3,148,000
Amortization Payment		11,116,117	6,399,896
Total Annual Required Contribution		91,856,864	91,495,365
Expected Employee Contributions		26,754,202	27,975,345
County Contribution Requirement	\$	65,102,662	\$ 63,520,020
Contribution Basis Payroll:			
For Normal Cost	\$	455,281,503	\$ 480,772,459
For Amortization of Unfunded Liability	\$	459,728,326	\$ 487,791,824
County Contribution % of Payroll			
Public Safety		18.17%	18.34%
Non-Public Safety		21.28%	14.41%
GRIP		6.10%	6.29%

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 \$668,893 for fiscal year 2021 and \$676,486 for fiscal year 2022. County estimated contribution is \$64,433,769 for fiscal year 2021 and \$62,843,534 for fiscal year 2022.



Contribution Rate Summary

All Plans

	Valuation as of July 1, 2020										July 1, 2019	
	Non-Public Safety				Public Safety				GRIP	Total	Total Agency	Total
	Group A	Group H	Group J	Total Non PS	Group E	Group F	Group G	Total PS				
County Contribution Requirement (\$)												
Non-GRIP	\$ 5,410,634	\$ 3,860,382	\$ 1,398,084	\$ 10,669,100	\$ 3,614,673	\$ 13,837,315	\$ 25,637,264	\$ 43,089,252	\$ -	\$ 53,758,352	\$ 1,391,893	\$ 57,015,682
GRIP	-	-	-	-	-	-	-	-	11,022,938	11,022,938	545,863	9,348,250
Total All Plans	\$ 5,410,634	\$ 3,860,382	\$ 1,398,084	\$ 10,669,100	\$ 3,614,673	\$ 13,837,315	\$ 25,637,264	\$ 43,089,252	\$ 11,022,938	\$ 64,781,290	\$ 1,937,756	\$ 66,363,932
County Normal Cost Contribution Requirement (% of Payroll)												
Non-GRIP	5.84%	5.63%	12.92%	6.89%	13.35%	16.72%	19.31%	17.30%	-	14.90%	5.84%	14.51%
GRIP	-	-	-	-	-	-	-	-	6.67%	6.67%	6.67%	6.66%
Total All Plans	5.84%	5.63%	12.92%	6.89%	13.35%	16.72%	19.31%	17.30%	6.67%	11.88%	6.67%	11.86%
County UAL Contribution Requirement (% of Payroll)												
Non-GRIP	11.16%	8.11%	-0.55%	7.52%	-2.55%	-3.31%	7.04%	1.04%	-	2.33%	NA	4.01%
GRIP	-	-	-	-	-	-	-	-	-0.38%	-0.38%	-0.38%	-0.56%
Total All Plans	11.16%	8.11%	-0.55%	7.52%	-2.55%	-3.31%	7.04%	1.04%	-0.38%	1.31%	NA	2.42%
Total County Contribution Requirement (% of Payroll)												
Non-GRIP	17.00%	13.74%	12.37%	14.41%	10.80%	13.41%	26.35%	18.34%	-	17.23%	NA	18.52%
GRIP	-	-	-	-	-	-	-	-	6.29%	6.29%	6.29%	6.10%
Total All Plans	17.00%	13.74%	12.37%	14.41%	10.80%	13.41%	26.35%	18.34%	6.29%	13.19%	NA	14.27%

	Valuation as of July 1, 2019										July 1, 2018	
	Non-Public Safety				Public Safety				GRIP	Total	Total Agency	Total
	Group A	Group H	Group J	Total Non PS	Group E	Group F	Group G	Total PS				
County Contribution Requirement (\$)												
Non-GRIP	\$ 7,753,897	\$ 7,245,299	\$ 1,273,069	\$ 16,272,265	\$ 3,498,016	\$ 13,534,389	\$ 23,711,012	\$ 40,743,417	\$ -	\$ 57,015,682	\$ 1,392,568	\$ 74,977,750
GRIP	-	-	-	-	-	-	-	-	9,348,250	9,348,250	537,595	8,206,880
Total All Plans	\$ 7,753,897	\$ 7,245,299	\$ 1,273,069	\$ 16,272,265	\$ 3,498,016	\$ 13,534,389	\$ 23,711,012	\$ 40,743,417	\$ 9,348,250	\$ 66,363,932	\$ 1,930,163	\$ 83,184,630
County Normal Cost Contribution Requirement (% of Payroll)												
Non-GRIP	5.91%	5.71%	12.90%	6.79%	13.26%	16.72%	19.14%	17.19%	-	14.51%	5.91%	14.75%
GRIP	-	-	-	-	-	-	-	-	6.66%	6.66%	6.66%	6.63%
Total All Plans	5.91%	5.71%	12.90%	6.79%	13.26%	16.72%	19.14%	17.19%	6.66%	11.86%	6.66%	12.20%
County UAL Contribution Requirement (% of Payroll)												
Non-GRIP	17.67%	17.61%	-0.98%	14.49%	-2.33%	-3.35%	7.13%	0.98%	-	4.01%	NA	9.49%
GRIP	-	-	-	-	-	-	-	-	-0.56%	-0.56%	-0.56%	-0.70%
Total All Plans	17.67%	17.61%	-0.98%	14.49%	-2.33%	-3.35%	7.13%	0.98%	-0.56%	2.42%	NA	6.17%
Total County Contribution Requirement (% of Payroll)												
Non-GRIP	23.58%	23.32%	11.92%	21.28%	10.93%	13.37%	26.27%	18.17%	-	18.52%	NA	24.24%
GRIP	-	-	-	-	-	-	-	-	6.10%	6.10%	6.10%	5.93%
Total All Plans	23.58%	23.32%	11.92%	21.28%	10.93%	13.37%	26.27%	18.17%	6.10%	14.27%	NA	18.37%

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 15 years remaining in the 20-year closed amortization period, and 5 years remaining in the 10-year closed amortization period, as of July 1, 2020.

The unfunded liability for the non-Public Safety groups A and H was amortized over a single nine-year closed period and the unfunded liability for the Public Safety groups, Group J and GRIP was amortized over separate 20-year closed periods beginning July 1, 2015. Beginning in fiscal year 2019, Group J is included with the Non-Public Safety groups.



Actuarial Valuation Results

All Plans

	Valuation as of July 1, 2020								July 1, 2019			
	Non-Public Safety			Public Safety					Total	% of Payroll	Total	% of Payroll
	Group A	Group H	Group J	Group E	Group F	Group G	GRIP					
Total All Plans												
Active Members												
Number	272	406	136	472	1,221	1,176	2,521	6,204		6,003		
Average Age	59.7	59.7	47.2	41.6	39.7	38.9	47.5	45.2		45.2		
Average Service	29.7	28.2	13.1	10.8	13.9	12.3	7.4	12.3		12.7		
Total Base Payroll	\$ 31,034,982	\$ 33,509,002	\$ 12,019,670	\$ 35,359,622	\$ 108,264,848	\$ 99,771,359	\$ 183,697,027	\$ 503,656,510		\$ 476,619,112		
Contribution Basis Payroll:												
For Normal Cost	\$ 28,328,610	\$ 30,635,099	\$ 11,334,524	\$ 33,855,269	\$ 104,164,939	\$ 96,401,700	\$ 176,052,318	\$ 480,772,459		\$ 455,281,503		
For Amortization of Unfunded Liability*	22,338,336	26,340,962	12,019,670	35,359,622	108,264,848	99,771,359	183,697,027	487,791,824		459,728,326		
DRSP/DROP Members												
Number				39	73	64		176		171		
Total Base Payroll				\$ 4,106,934	\$ 7,781,153	\$ 7,443,267		\$ 19,331,354		\$ 18,554,451		
Total Benefits				2,130,864	5,044,890	4,552,955		11,728,709		11,614,546		
Terminated Vested Members												
Number	33	41	1	29	28	19	378	529		543		
Total Benefits (non-GRIP)	\$ 318,008	\$ 342,848	\$ 4,929	\$ 442,288	\$ 234,092	\$ 118,179		\$ 1,460,344		\$ 1,661,018		
Retired Members and Beneficiaries												
Number							5	6,607		6,560		
Total Benefits							\$ 70,130	\$ 258,118,052		\$ 254,564,987		
Total Membership							2,904	13,516		13,277		
Actuarial Accrued Liability												
Active Members	\$ 150,736,301	\$ 141,288,602	\$ 42,177,342	\$ 111,542,555	\$ 443,498,940	\$ 366,410,108	\$ 168,910,709	\$ 1,424,564,557		\$ 1,392,815,876		
DRSP/DROP Members				31,439,164	74,389,066	69,390,779		175,219,009		172,080,764		
Terminated Vested Members	3,042,654	3,137,637	2,767	3,721,504	1,809,637	534,909	26,780,725	39,029,833		39,648,856		
Retired Members and Beneficiaries	754,675,308	539,512,535	14,539,117	262,193,258	651,407,200	566,311,783	595,741	2,789,234,942		2,715,615,576		
Total	908,454,263	683,938,774	56,719,226	408,896,481	1,171,104,843	1,002,647,579	196,287,175	4,428,048,342		4,320,161,072		
Actuarial Value of Assets	\$ 887,571,113	\$ 675,920,278	\$ 57,554,616	\$ 421,803,185	\$ 1,218,918,349	\$ 928,276,554	\$ 203,010,320	\$ 4,393,054,415		\$ 4,261,996,413		
Unfunded Actuarial Accrued Liability	\$ 20,883,150	\$ 8,018,496	\$ (835,390)	\$ (12,906,704)	\$ (47,813,506)	\$ 74,371,025	\$ (6,723,145)	\$ 34,993,927		\$ 58,164,659		
Outside Agency Non-GRIP Unfunded Liability	11,507,671	-	-	-	-	-	-	11,507,671		11,966,080		
Net Unfunded Actuarial Accrued Liability	9,375,479	8,018,496	(835,390)	(12,906,704)	(47,813,506)	74,371,025	(6,723,145)	23,486,256		46,198,579		
Funded Ratio (Actuarial Value of Assets)	97.7%	98.8%	101.5%	103.2%	104.1%	92.6%	103.4%	99.2%		98.7%		
Annual Gross Normal Cost												
Benefits	\$ 3,046,805	\$ 3,254,011	\$ 2,139,538	\$ 6,557,396	\$ 23,490,036	\$ 24,967,037	\$ 18,492,646	\$ 81,947,469	(17.04%)	\$ 77,548,547	(17.03%)	
Expenses of Administration	333,097	312,219	93,203	246,487	980,043	809,692	373,259	3,148,000	(0.66%)	3,192,200	(0.70%)	
Total	3,379,902	3,566,230	2,232,741	6,803,883	24,470,079	25,776,729	18,865,905	85,095,469	(17.70%)	80,740,747	(17.73%)	
Amortization of Unfunded Liability ¹	\$ 2,496,285	\$ 2,134,978	\$ (66,755)	\$ (903,391)	\$ (3,580,795)	\$ 7,024,776	\$ (705,202)	\$ 6,399,896	(1.31%)	\$ 11,116,117	(2.42%)	
Annual Contribution Requirement:												
County Portion	\$ 4,149,364	\$ 3,860,382	\$ 1,398,084	\$ 3,614,673	\$ 13,837,315	\$ 25,637,264	\$ 11,022,938	\$ 63,520,020	(13.19%)	\$ 65,102,662	(14.27%)	
Employee Portion	1,726,823	1,840,826	767,902	2,285,819	7,051,969	7,164,241	7,137,765	27,975,345	(5.82%)	26,754,202	(5.88%)	
Total	5,876,187	5,701,208	2,165,986	5,900,492	20,889,284	32,801,505	18,160,703	91,495,365	(19.01%)	91,856,864	(20.15%)	
Non-Public Safety/Public Safety/GRIP County Portion			\$ 9,407,830			\$ 43,089,252	\$ 11,022,938					
*Excludes Non-GRIP Payroll from Outside Agencies												
Outside Agency UAL Payroll	\$ 1,873,108											

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 Groups A and H and separate closed 20-year amortization periods for the Public Safety groups, Group J and GRIP. Beginning in fiscal year 2019, Group J is included with the Non-Public Safety groups.



Actuarial Valuation Results Outside Agencies

Valuation as of July 1, 2020

Non-GRIP	Assessment and		CRU 92 Credit		Housing	Revenue	Strathmore	Town of	Washington	Total Agency	Total Non-Agency	Total ERS (Excluding GRIP)
	Taxation	Circuit Court	Union	District Court	Opportunities Commission	Authority	Hall	Chevy Chase	Suburban Transit Commission			
Actuarial Accrued Liability												
Active Members (Non-GRIP)	\$ -	\$ 695,738	\$ 690,853	\$ -	\$ 8,277,031	\$ 522,904	\$ 1,735,747	\$ -	\$ -	\$ 11,922,273	\$ 1,243,731,575	\$ 1,255,653,848
DRSP/DROP Members	-	-	-	-	-	-	-	-	-	-	175,219,009	175,219,009
Terminated Vested Members	-	-	-	-	813,716	-	-	33,725	-	847,440	11,401,668	12,249,108
Retired Members and Beneficiaries	11,107,377	963,989	3,632,545	1,574,571	39,452,956	3,235,545	2,286,964	983,831	226,882	63,464,660	2,725,174,541	2,788,639,201
Total	\$ 11,107,377	\$ 1,659,727	\$ 4,323,398	\$ 1,574,571	\$ 48,543,703	\$ 3,758,449	\$ 4,022,711	\$ 1,017,556	\$ 226,882	\$ 76,234,373	\$ 4,155,526,793	\$ 4,231,761,166
Actuarial Accrued Liability by Group												
Group A	\$ 11,107,377	\$ 1,659,727	\$ 4,323,398	\$ 1,574,571	\$ 48,543,703	\$ 3,758,449	\$ 4,022,711	\$ 1,017,556	\$ 226,882	\$ 76,234,373		
Remaining Unfunded Actuarial Accrued Liability												
Non-GRIP	\$ 2,001,139	\$ 73,209	\$ 663,026	\$ 351,251	\$ 7,157,128	\$ 872,063	\$ 322,436	\$ -	\$ 67,419	\$ 11,507,671	\$ 30,209,401	\$ 41,717,072
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)	\$ -	\$ 77,302	\$ 117,066	\$ -	\$ 1,618,262	\$ 92,697	\$ 331,363	\$ -	\$ -	\$ 2,236,690	\$ 302,483,451	\$ 304,720,141
Normal Cost Contribution Requirement (% of Payroll)		5.84%	5.84%	5.84%	5.84%	5.84%	5.84%	5.84%	5.84%	5.84%		
Estimated Normal Cost \$ Contribution Requirement	\$ -	\$ 4,514	\$ 6,837	\$ -	\$ 94,507	\$ 5,414	\$ 19,352	\$ -	\$ -	\$ 130,623	\$ 45,261,361	\$ 45,391,984
Actual \$ UAL Contribution Requirement	210,887	7,715	69,872	37,016	754,243	91,901	74,135	-	15,501	1,261,270	7,105,098	8,366,368
Estimated Total \$ Contribution Requirement	\$ 210,887	\$ 12,229	\$ 76,709	\$ 37,016	\$ 848,750	\$ 97,315	\$ 93,486	\$ -	\$ 15,501	\$ 1,391,893	\$ 52,366,459	\$ 53,758,352

¹ For Strathmore Hall and Washington Suburban Transit Commission, the remaining amortization period is 5 years as of July 1, 2020. 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 15 years as of July 1, 2020. Washington Suburban Transit Commission paid off its remaining unfunded liability after June 30, 2020, and therefore will have no remaining balance as of July 1, 2021.

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 2021 amount. Actual projected payroll for non-GRIP for fiscal year 2022 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, 2020

GRIP	Valuation as of July 1, 2020										Total Agency (GRIP)	Total Non-Agency (GRIP)	Total ERS (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				
Actuarial Accrued Liability													
Active Members (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,529,161	\$ 117,211	\$ 349,933	\$ 247,159	\$ -	\$ 8,243,464	\$ 160,667,245	\$ 168,910,709
Terminated Vested Members	-	-	-	-	-	2,458,175	209,971	305,511	-	1,770	2,975,427	23,805,298	26,780,725
Retired Members and Beneficiaries	-	-	-	-	-	-	-	-	-	-	-	595,741	595,741
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,987,336	\$ 327,182	\$ 655,444	\$ 247,159	\$ 1,770	\$ 11,218,891	\$ 185,068,284	\$ 196,287,175
Unfunded Actuarial Accrued Liability (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (342,082)	\$ (11,206)	\$ (22,450)	\$ (8,466)	\$ (61)	\$ (384,265)	\$ (6,338,880)	\$ (6,723,145)
Contribution Basis Payroll:													
For Normal Cost (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,662,715	\$ 403,531	\$ 598,907	\$ 35,938	\$ -	\$ 8,701,090	\$ 167,351,228	\$ 176,052,318
For Amortization of Unfunded Liability (GRIP)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,006,969	\$ 415,860	\$ 619,353	\$ 36,674	\$ -	\$ 9,078,856	\$ 174,618,171	\$ 183,697,027
Normal Cost Contribution Requirement (% of Payroll)	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%	6.67%			
UAL Contribution Requirement (% of Payroll)	-0.38%	-0.38%	-0.38%	-0.38%	-0.38%	-0.38%	-0.38%	-0.38%	-0.38%	-0.38%			
Estimated Normal Cost \$ Contribution Requirement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 511,103	\$ 26,915	\$ 39,947	\$ 2,397	\$ -	\$ 580,363	\$ 11,147,777	\$ 11,728,140
Estimated \$ UAL Contribution Requirement	-	-	-	-	-	(30,426)	(1,580)	(2,354)	(139)	-	(34,500)	(670,702)	(705,202)
Estimated Total \$ Contribution Requirement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 480,677	\$ 25,335	\$ 37,594	\$ 2,258	\$ -	\$ 545,863	\$ 10,477,075	\$ 11,022,938
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	-	4,514	6,837	-	575,183	30,749	56,945	2,258	-	-	676,486		
Total Estimated Contribution	\$ 210,887	\$ 12,229	\$ 76,709	\$ 37,016	\$ 1,329,426	\$ 122,650	\$ 131,080	\$ 2,258	\$ 15,501	\$ -	\$ 1,937,756	\$ 62,843,534	\$ 64,781,290
Unfunded Actuarial Accrued Liability (Based on Actuarial Value of Assets)													
Non-GRIP	\$ 2,001,139	\$ 73,209	\$ 663,026	\$ 351,251	\$ 7,157,128	\$ 872,063	\$ 322,436	\$ -	\$ 67,419	\$ -	\$ 11,507,671	\$ 30,209,401	\$ 41,717,072
GRIP	-	-	-	-	(342,082)	(11,206)	(22,450)	(8,466)	(61)	-	(384,265)	(6,338,880)	(6,723,145)
Total	\$ 2,001,139	\$ 73,209	\$ 663,026	\$ 351,251	\$ 6,815,046	\$ 860,857	\$ 299,986	\$ (8,466)	\$ 67,358	\$ -	\$ 11,123,406	\$ 23,870,521	\$ 34,993,927

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 2021 amount. Actual projected payroll for non-GRIP for fiscal year 2022 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, 2020						July 1, 2019		
	Agency					Total GRIP	Total		
	CC	CM	CN	CP	CZ				
Total All Plans									
Active Members									
Number	1	1,846	667	2	5	2,521		2,254	
Average Age	62.3	46.5	50.1	53.9	59.4	47.5		47.4	
Average Service	4.5	6.9	8.7	14.2	9.1	7.4		7.3	
Total Base Payroll	\$ 39,775	\$ 116,047,140	\$ 66,664,979	\$ 168,606	\$ 776,526	\$ 183,697,027		\$ 160,424,145	
Contribution Basis Payroll:									
For Normal Cost	\$ 38,328	\$ 111,234,128	\$ 63,900,944	\$ 155,477	\$ 723,441	\$ 176,052,318		\$ 153,858,772	
For Amortization of Unfunded Liability	39,775	116,047,140	66,664,979	168,606	776,526	183,697,027		160,424,145	
Terminated Members									
Number	2	223	148	3	2	378		370	
Retired Members and Beneficiaries									
Number		3	2			5		4	
Total Benefits		21,704	48,426			70,130		57,237	
Total Membership	3	2,072	817	5	7	2,904		2,628	
Actuarial Accrued Liability									
Active Members	\$ 18,454	\$ 93,489,230	\$ 74,263,080	\$ 301,255	\$ 838,690	\$ 168,910,709		\$ 145,807,074	
Terminated Vested Members ¹	119,890	9,895,504	14,667,197	1,552,210	545,923	26,780,725		25,246,175	
Retired Members and Beneficiaries	-	215,969	379,772	-	-	595,741		476,134	
Total	138,344	103,600,703	89,310,049	1,853,465	1,384,613	196,287,175		171,529,383	
Actuarial Value of Assets	\$ 143,082	\$ 107,149,190	\$ 92,369,059	\$ 1,916,949	\$ 1,432,038	\$ 203,010,320		\$ 181,485,157	
Unfunded Actuarial Accrued Liability	\$ (4,738)	\$ (3,548,487)	\$ (3,059,010)	\$ (63,484)	\$ (47,425)	\$ (6,723,145)		\$ (9,955,774)	
Funded Ratio (Actuarial Value of Assets)	103.4%	103.4%	103.4%	103.4%	103.4%	103.4%		105.8%	
Annual Gross Normal Cost									
Benefits	\$ 4,100	\$ 11,644,596	\$ 6,749,930	\$ 17,428	\$ 76,592	\$ 18,492,646	(10.50%)	\$ 16,161,090	(10.50%)
Expenses of Administration	263	197,006	169,832	3,525	2,633	373,259	(0.22%)	334,176	(0.22%)
Total	4,363	11,841,602	6,919,762	20,953	79,225	18,865,905	(10.72%)	16,495,266	(10.72%)
Amortization of Unfunded Liability	\$ (497)	\$ (372,206)	\$ (320,865)	\$ (6,659)	\$ (4,975)	\$ (705,202)	-(0.38%)	\$ (897,775)	-(0.56%)
Annual Contribution Requirement:									
County Portion	\$ 2,333	\$ 7,020,031	\$ 3,948,317	\$ 9,630	\$ 42,627	\$ 11,022,938	(6.29%)	\$ 9,348,250	(6.10%)
Employee Portion	1,533	4,449,365	2,650,580	4,664	31,623	7,137,765	(4.05%)	6,249,241	(4.06%)
Total	3,866	11,469,396	6,598,897	14,294	74,250	18,160,703	(10.34%)	15,597,491	(10.16%)
Non-Public Safety County Portion						\$ 11,013,308	(6.28%)	\$ 9,339,276	(6.10%)
Public Safety County Portion (Agency CP) ²						\$ 9,630	(6.53%)	\$ 8,974	(5.37%)

¹ Includes the liabilities for 2 deceased members whose account balances had not been paid out as of the valuation date.

² Amortization of unfunded liability contribution rate increased from -4.96% from the last valuation to -3.95% in the current valuation.



Actuarial Valuation Results

Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments By Group

Closed Groups

Base Year	Description	Unfunded Liability Base ¹			Remaining Financing Period	Amortization Factor	Amortization Payment		
		Group A	Group H	Total			Group A	Group H	Total
2015	Pre FY 2015 Retirement Incentive	\$ 5,581,643	\$ 7,651,772	\$ 13,233,415	4 yrs.	3.755773	\$ 1,486,150	\$ 2,037,336	\$ 3,523,486
2015	Pre FY 2015 Plan Experience	45,268,369	49,584,394	94,852,763	4	3.755773	12,053,010	13,202,181	25,255,191
2015	Pre FY 2015 Plan Changes	17,598,383	24,159,583	41,757,966	4	3.755773	4,685,689	6,432,653	11,118,342
2015	Pre FY 2015 Cost Method Changes	4,220,326	3,277,108	7,497,434	4	3.755773	1,123,690	872,552	1,996,242
2015	FY 2015 Plan Experience	(30,806,674)	(18,069,005)	(48,875,679)	4	3.755773	(8,202,486)	(4,810,995)	(13,013,481)
2015	FY 2015 Assumption and Method Changes	16,467,820	10,571,735	27,039,555	4	3.755773	4,384,669	2,814,796	7,199,465
2015	FY 2015 Plan Changes	-	-	-	4	3.755773	-	-	-
2016	FY 2016 Plan Experience	(457,117)	(4,795,761)	(5,252,878)	4	3.755773	(121,710)	(1,276,904)	(1,398,614)
2017	FY 2017 Plan Experience	(10,359,489)	(14,542,236)	(24,901,725)	4	3.755773	(2,758,284)	(3,871,969)	(6,630,253)
2018	FY 2018 Plan Experience	(3,163,547)	(7,672,075)	(10,835,622)	4	3.755773	(842,316)	(2,042,742)	(2,885,058)
2019	FY 2019 Plan Experience	2,043,644	(8,936,752)	(6,893,108)	4	3.755773	544,134	(2,379,471)	(1,835,337)
2019	FY 2019 Assumption and Method Changes	(28,659,661)	(20,819,087)	(49,478,748)	4	3.755773	(7,630,829)	(5,543,223)	(13,174,052)
2020	FY 2020 Plan Experience	(8,358,218)	(12,391,180)	(20,749,398)	4	3.755773	(2,225,432)	(3,299,236)	(5,524,668)
Unfunded Liability		\$ 9,375,479	\$ 8,018,496	\$ 17,393,975	4.0 yrs.	3.755773	\$ 2,496,285	\$ 2,134,978	\$ 4,631,263

¹ Unfunded liability for Group A excludes Outside Agency Non-GRIP unfunded liability of \$11,507,671.

Open Groups

Base Year	Description	Unfunded Liability Base					Remaining Financing Period	Amortization Factor	Amortization Payment				
		Group E	Group J	Group F	Group G	Total			Group E	Group J	Group F	Group G	Total
2015	Pre FY 2015 Retirement Incentive	\$ 1,014,627	\$ -	\$ -	\$ -	\$ 1,014,627	15 yrs.	11.310432	\$ 89,707	\$ -	\$ -	\$ -	\$ 89,707
2015	Pre FY 2015 Plan Experience	36,921,595	-	108,472,471	110,010,916	255,404,982	15	11.310432	3,264,384	-	9,590,480	9,726,500	22,581,364
2015	Pre FY 2015 Plan Changes	3,298,194	-	(1,593,068)	68,276,294	69,981,420	15	11.310432	291,606	-	(140,849)	6,036,577	6,187,334
2015	Pre FY 2015 Cost Method Changes	202,698	-	342,173	1,293,887	1,838,758	15	11.310432	17,921	-	30,253	114,398	162,572
2015	FY 2015 Plan Experience	(22,190,169)	-	(57,832,913)	(39,245,735)	(119,268,817)	15	11.310432	(1,961,921)	-	(5,113,236)	(3,469,870)	(10,545,027)
2015	FY 2015 Assumption and Method Changes	(7,806,479)	-	(17,849,105)	(7,911,909)	(33,567,493)	15	11.310432	(690,202)	-	(1,578,110)	(699,523)	(2,967,835)
2015	FY 2015 Plan Changes	4,412,758	-	-	-	4,412,758	15	11.310432	390,149	-	-	-	390,149
2016	FY 2016 Plan Experience	(7,287,085)	-	(24,431,464)	(20,404,460)	(52,123,009)	16	11.836972	(615,621)	-	(2,063,996)	(1,723,790)	(4,403,407)
2017	FY 2017 Plan Experience	(10,713,571)	(206,871)	(22,769,269)	(21,086,349)	(54,776,060)	17	12.341471	(868,095)	(16,762)	(1,844,940)	(1,708,577)	(4,438,374)
2018	FY 2018 Plan Experience	(5,436,960)	(402,585)	(14,086,768)	1,120,340	(18,805,973)	18	12.824851	(423,939)	(31,391)	(1,098,396)	87,357	(1,466,369)
2019	FY 2019 Plan Experience	56,487	(269,341)	(6,259,031)	(9,767,093)	(16,238,978)	19	13.287997	4,251	(20,269)	(471,029)	(735,031)	(1,222,078)
2019	FY 2019 Assumption and Method Changes	(4,081,528)	(614,585)	(12,818,502)	(11,049,978)	(28,564,593)	19	13.287997	(307,159)	(46,251)	(964,668)	(831,576)	(2,149,654)
2020	FY 2020 Plan Experience	(1,297,271)	657,992	1,011,970	3,135,112	3,507,803	20	13.731755	(94,472)	47,918	73,696	228,311	255,453
Unfunded Liability		\$ (12,906,704)	\$ (835,390)	\$ (47,813,506)	\$ 74,371,025	\$ 12,815,425	5.7 yrs.	5.180388	\$ (903,391)	\$ (66,755)	\$ (3,580,795)	\$ 7,024,776	\$ 2,473,835



Actuarial Valuation Results

Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments By Group

GRIP

Base Year	Description	Unfunded Liability Base		Remaining Financing Period	Amortization Factor	Amortization	
		GRIP				GRIP	Payment
2015	Pre FY 2015 Retirement Incentive	\$	-	15 yrs.	11.310432	\$ -	\$ -
2015	Pre FY 2015 Plan Experience		(7,026,791)	15	11.310432	(621,266)	(621,266)
2015	Pre FY 2015 Plan Changes		(2,069,804)	15	11.310432	(183,000)	(183,000)
2015	Pre FY 2015 Cost Method Changes		2,183,782	15	11.310432	193,077	193,077
2015	FY 2015 Plan Experience		(3,334,355)	15	11.310432	(294,803)	(294,803)
2015	FY 2015 Assumption and Method Changes		(5,519,094)	15	11.310432	(487,965)	(487,965)
2015	FY 2015 Plan Changes		-	15	11.310432	-	-
2016	FY 2016 Plan Experience		(226,680)	16	11.836972	(19,150)	(19,150)
2017	FY 2017 Plan Experience		2,390,099	17	12.341471	193,664	193,664
2018	FY 2018 Plan Experience		1,410,874	18	12.824851	110,011	110,011
2019	FY 2019 Plan Experience		2,215,060	19	13.287997	166,696	166,696
2019	FY 2019 Assumption and Method Changes		239,561	19	13.287997	18,028	18,028
2020	FY 2020 Plan Experience		3,014,203	20	13.731755	219,506	219,506
Unfunded Liability		\$	(6,723,145)	11.9 yrs.	9.533644	\$ (705,202)	\$ (705,202)



Actuarial Valuation Results

Amortization of Unfunded Actuarial Accrued Liability and Amortization Payments By Group

Total

Base Year	Description	Unfunded Liability Base ¹							GRIP	Total
		Closed Groups		Open Groups						
		Group A	Group H	Group J	Group E	Group F	Group G			
2015	Pre FY 2015 Retirement Incentive	\$ 5,581,643	\$ 7,651,772	\$ -	\$ 1,014,627	\$ -	\$ -	\$ -	\$ 14,248,042	
2015	Pre FY 2015 Plan Experience	45,268,369	49,584,394	-	36,921,595	108,472,471	110,010,916	(7,026,791)	343,230,954	
2015	Pre FY 2015 Plan Changes	17,598,383	24,159,583	-	3,298,194	(1,593,068)	68,276,294	(2,069,804)	109,669,582	
2015	Pre FY 2015 Cost Method Changes	4,220,326	3,277,108	-	202,698	342,173	1,293,887	2,183,782	11,519,974	
2015	FY 2015 Plan Experience	(30,806,674)	(18,069,005)	-	(22,190,169)	(57,832,913)	(39,245,735)	(3,334,355)	(171,478,851)	
2015	FY 2015 Assumption and Method Changes	16,467,820	10,571,735	-	(7,806,479)	(17,849,105)	(7,911,909)	(5,519,094)	(12,047,032)	
2015	FY 2015 Plan Changes	-	-	-	4,412,758	-	-	-	4,412,758	
2016	FY 2016 Plan Experience	(457,117)	(4,795,761)	-	(7,287,085)	(24,431,464)	(20,404,460)	(226,680)	(57,602,567)	
2017	FY 2017 Plan Experience	(10,359,489)	(14,542,236)	(206,871)	(10,713,571)	(22,769,269)	(21,086,349)	2,390,099	(77,287,686)	
2018	FY 2018 Plan Experience	(3,163,547)	(7,672,075)	(402,585)	(5,436,960)	(14,086,768)	1,120,340	1,410,874	(28,230,721)	
2019	FY 2019 Plan Experience	2,043,644	(8,936,752)	(269,341)	56,487	(6,259,031)	(9,767,093)	2,215,060	(20,917,026)	
2019	FY 2019 Assumption and Method Changes	(28,659,661)	(20,819,087)	(614,585)	(4,081,528)	(12,818,502)	(11,049,978)	239,561	(77,803,780)	
2020	FY 2020 Plan Experience	(8,358,218)	(12,391,180)	657,992	(1,297,271)	1,011,970	3,135,112	3,014,203	(14,227,392)	
Unfunded Liability		\$ 9,375,479	\$ 8,018,496	\$ (835,390)	\$ (12,906,704)	\$ (47,813,506)	\$ 74,371,025	\$ (6,723,145)	\$ 23,486,256	

Base Year	Description	Remaining Financing Period	Amortization Factor	Amortization of Unfunded Liability Base							GRIP	Total
				Closed Groups		Open Groups						
				Group A	Group H	Group J	Group E	Group F	Group G			
2015	Pre FY 2015 Retirement Incentive	4.2 yrs.	3.943338	\$ 1,486,150	\$ 2,037,336	\$ -	\$ 89,707	\$ -	\$ -	\$ -	\$ 3,613,193	
2015	Pre FY 2015 Plan Experience	8.5	7.269488	12,053,010	13,202,181	-	3,264,384	9,590,480	9,726,500	(621,266)	47,215,289	
2015	Pre FY 2015 Plan Changes	7.3	6.404932	4,685,689	6,432,653	-	291,606	(140,849)	6,036,577	(183,000)	17,122,676	
2015	Pre FY 2015 Cost Method Changes	5.4	4.898175	1,123,690	872,552	-	17,921	30,253	114,398	193,077	2,351,891	
2015	FY 2015 Plan Experience	8.4	7.188891	(8,202,486)	(4,810,995)	-	(1,961,921)	(5,113,236)	(3,469,870)	(294,803)	(23,853,311)	
2015	FY 2015 Assumption/Method Changes	(3.0)	(3.217978)	4,384,669	2,814,796	-	(690,202)	(1,578,110)	(699,523)	(487,965)	3,743,665	
2015	FY 2015 Plan Changes	15.0	11.310443	-	-	-	390,149	-	-	-	390,149	
2016	FY 2016 Plan Experience	12.5	9.895357	(121,710)	(1,276,904)	-	(615,621)	(2,063,996)	(1,723,790)	(19,150)	(5,821,171)	
2017	FY 2017 Plan Experience	8.3	7.106938	(2,758,284)	(3,871,969)	(16,762)	(868,095)	(1,844,940)	(1,708,577)	193,664	(10,874,963)	
2018	FY 2018 Plan Experience	7.6	6.655966	(842,316)	(2,042,742)	(31,391)	(423,939)	(1,098,396)	87,357	110,011	(4,241,416)	
2019	FY 2019 Plan Experience	8.4	7.235925	544,134	(2,379,471)	(20,269)	4,251	(471,029)	(735,031)	166,696	(2,890,719)	
2019	FY 2019 Assumption and Method Change	5.6	5.083328	(7,630,829)	(5,543,223)	(46,251)	(307,159)	(964,668)	(831,576)	18,028	(15,305,678)	
2020	FY 2020 Plan Experience	2.9	2.817468	(2,225,432)	(3,299,236)	47,918	(94,472)	73,696	228,311	219,506	(5,049,709)	
Amortization Payments		3.9 yrs.	3.669787	\$ 2,496,285	\$ 2,134,978	\$ (66,755)	\$ (903,391)	\$ (3,580,795)	\$ 7,024,776	\$ (705,202)	\$ 6,399,896	

¹ Unfunded liability for Group A excludes Outside Agency Non-GRIP unfunded liability of \$11,507,671.



Actuarial Valuation Results

Gain/Loss Analysis

	Non-Public Safety	Public Safety	GRIP	Total
Unfunded liability at previous valuation	\$ 55,807,888	\$ 12,312,545	\$ (9,955,774)	\$ 58,164,659
Expected unfunded liability at current valuation				
Normal cost for plan year	10,041,551	54,203,930	16,495,266	80,740,747
Interest on unfunded liability and normal cost	4,555,342	2,919,342	(139,293)	7,335,391
Contributions with interest to current valuation date	<u>20,891,254</u>	<u>58,634,812</u>	<u>16,137,548</u>	<u>95,663,614</u>
Total expected change in unfunded liability at current valuation	(6,294,361)	(1,511,540)	218,425	(7,587,476)
Total expected unfunded liability at current valuation	49,513,527	10,801,005	(9,737,349)	50,577,183
Change due to:				
Recognition of asset (gains)/losses	9,881,356	15,435,241	1,009,516	26,326,113
Salary increases	(581,139)	10,883,737	-	10,302,598
COLA increases	(31,326,917)	(38,749,968)	-	(70,076,885)
Amount and timing of contributions	(2,291,188)	146,162	187,272	(1,957,754)
Demographic experience and other	2,870,617	15,134,638	1,817,416	19,822,672
Change in actuarial assumptions	-	-	-	-
Plan improvements	-	-	-	-
Measurement improvements	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total change	(21,447,271)	2,849,810	3,014,204	(15,583,256)
Unfunded liability at current valuation	\$ 28,066,256	\$ 13,650,815	\$ (6,723,145)	\$ 34,993,927

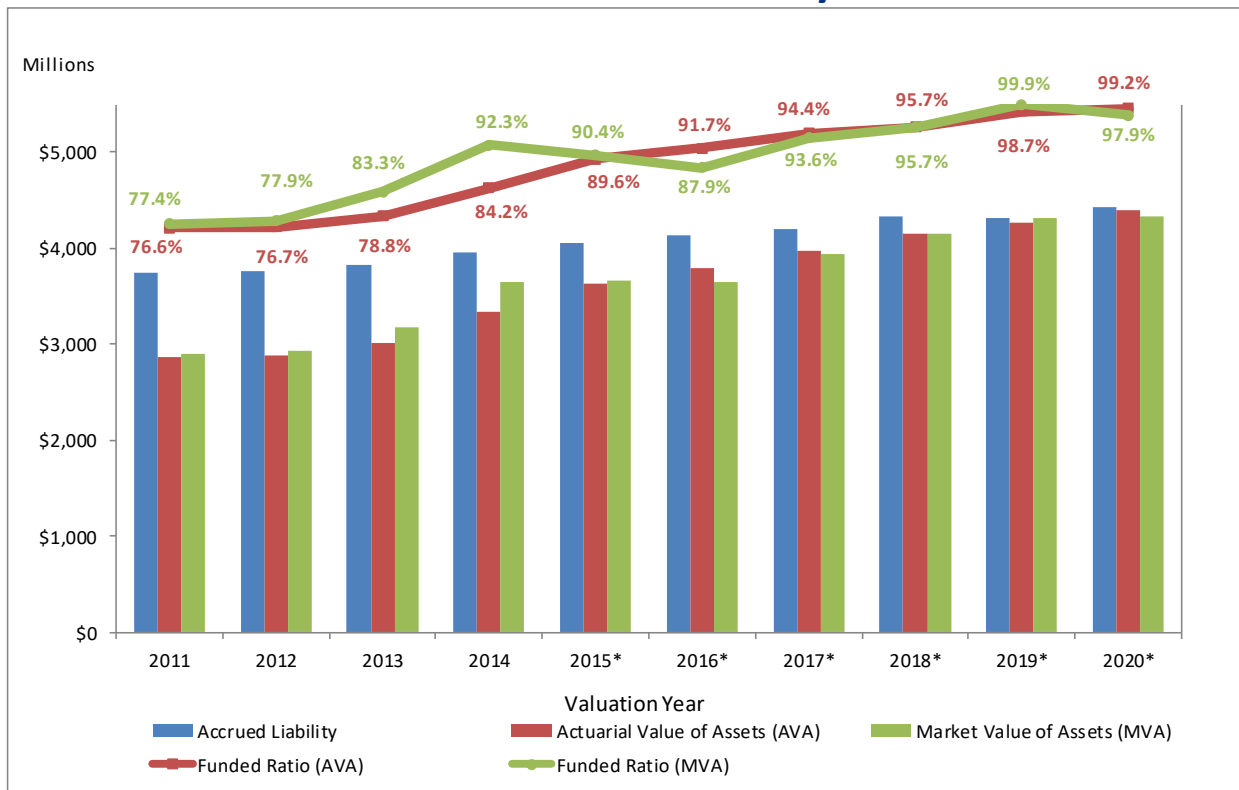
	County Contribution			Funded Status
	Non-Public Safety	Public Safety	GRIP	Total
FY 2021 County Contribution/July 1, 2019 Funded Ratio	21.28%	18.17%	6.10%	98.7%
FY 2022 County Contribution/Expected July 1, 2020 Funded Ratio	23.34%	18.16%	6.15%	99.3%
Change due to:				
Recognition of asset (gains)/losses	4.33%	0.46%	0.04%	-0.6%
Salary increases	-0.23%	0.32%	0.01%	-0.2%
COLA increases	-13.74%	-1.16%	0.00%	1.6%
Amount and timing of contributions	-1.01%	0.00%	0.01%	0.2%
Demographic experience and other	1.72%	0.56%	0.08%	-1.1%
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	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.0%</u>
Total change	-8.93%	0.18%	0.14%	-0.1%
FY 2022 County Contribution/July 1, 2020 Funded Ratio	14.41%	18.34%	6.29%	99.2%

Demographic Experience and Other includes changes due to retirement, mortality, disability and termination experience that varied from the actuarial assumptions, and data changes. Beginning in fiscal year 2019, Group J is included with the Non-Public Safety groups.

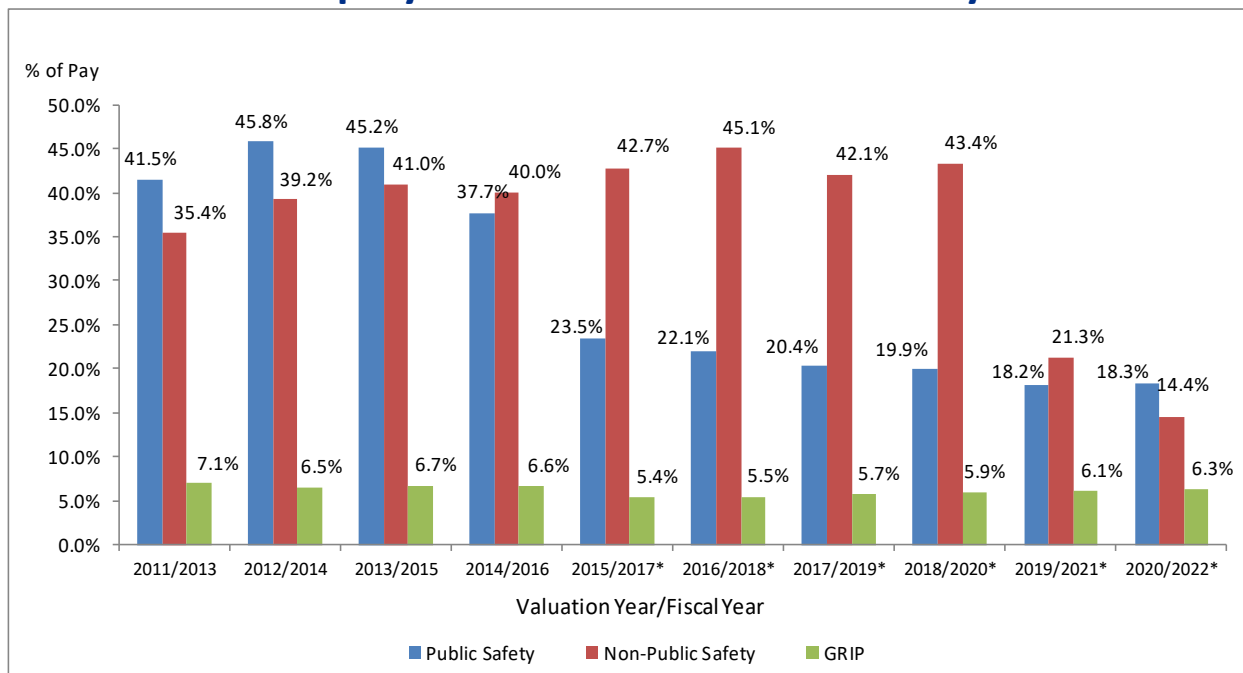


Historical Trends of Funded Ratio and Employer Contributions

Funded Ratio History



Employer Contribution Rate History

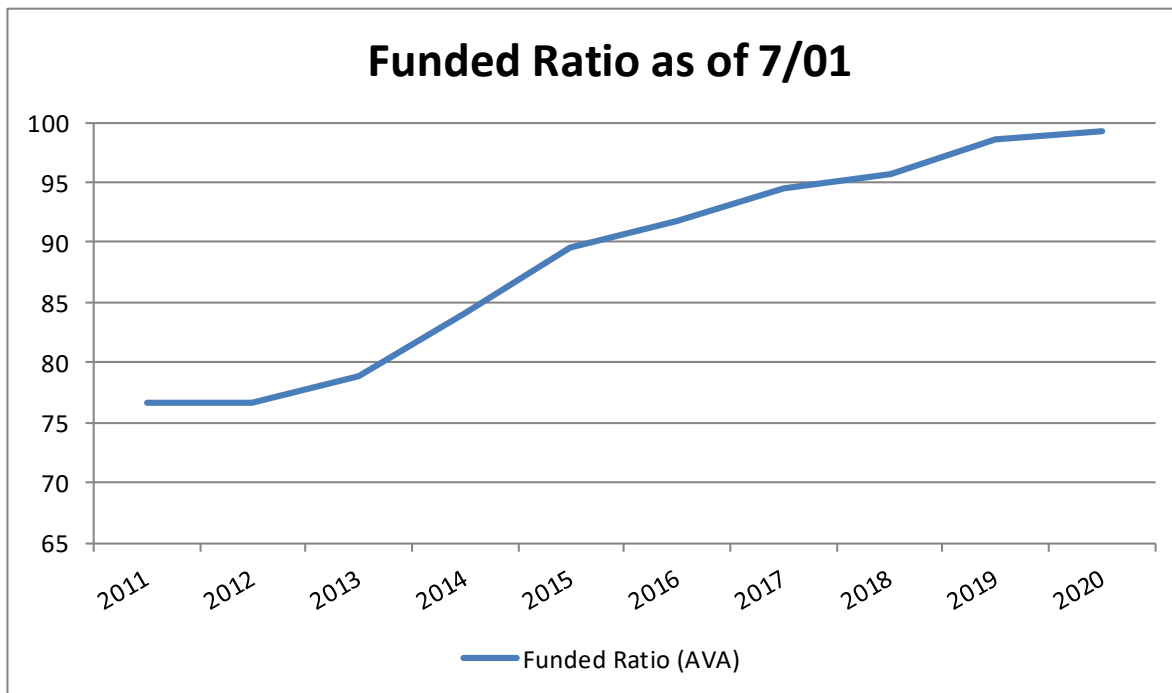


* Results beginning with the 2015 valuation (FY 2017) include changes to amortization periods used to finance the unfunded liability and changes to the actuarial assumptions used in the valuation, based on the key findings from an experience review of the System for the period from July 1, 2009 to July 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)
7/1/2011	\$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
7/1/2019	4,261,996,413	4,320,161,072	58,164,659	98.7
7/1/2020	4,393,054,415	4,428,048,342	34,993,927	99.2



Actuarial Valuation Results Solvency Test

Valuation Date 6/30	Total Actuarial Accrued Liability	(1)	(2)	(3)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets		
		Active Member Contributions	Retirees, Term Vested and Beneficiaries	Active Members (Employer Financed Portion)		(1)	(2)	(3)
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%
2019	4,320,161,072	333,645,308	2,927,345,196	1,059,170,568	4,261,996,413	100%	100%	95%
2020	4,428,048,342	350,094,770	3,003,483,784	1,074,469,788	4,393,054,415	100%	100%	97%

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

Results in 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

Assets	Fiscal Year Ending	
	June 30, 2019	June 30, 2020
Equity in County's pooled cash and investments	\$2,058,980	\$ 2,492,345
Investments:		
Government and agency obligations	568,830,742	528,089,716
Municipal/Provincial obligations	8,921,548	21,417,231
Asset-backed securities	666,245	899,042
Corporate bonds	655,403,025	685,718,740
Collateralized mortgage obligations	-	-
Commercial mortgage-backed securities	2,114,604	1,458,954
Common and preferred stock	1,633,312,048	1,531,092,203
Mutual and commingled funds	495,311,451	563,197,846
Short-term investments	203,643,284	128,855,407
Cash collateral received under securities lending agreements	149,833,263	156,070,467
Private real assets	218,561,490	248,857,751
Private equity/debt	515,390,370	614,388,944
Total Investments	4,451,988,070	4,480,046,301
Dividend, interest and other receivables	15,376,533	13,745,051
Contributions receivable	7,256,074	7,970,737
Net capital assets	-	-
Total assets	4,476,679,657	4,504,254,434
Liabilities		
Payable for collateral received under securities lending agreements	149,833,263	156,070,467
Benefit payable and other liabilities	10,210,107	14,682,446
Total liabilities	160,043,370	170,752,913
Net position restricted for pensions	\$ 4,316,636,287	\$ 4,333,501,521



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

	Fiscal Year Ending	
	June 30, 2019	June 30, 2020
Additions:		
Contributions:		
Employer	\$ 86,584,479	\$ 87,198,736
Members	29,628,822	30,781,032
Total contributions	116,213,301	117,979,768
Total income from investment activities	338,831,643	191,277,121
Less investment expenses	22,257,612	19,230,564
Net income from investment activities	316,574,031	172,046,557
Income from securities lending	4,732,374	2,768,203
Less securities lending expenses	3,416,051	1,446,670
Net income from securities lending	1,316,323	1,321,533
Total additions	434,103,655	291,347,858
Deductions:		
Retiree benefits	193,421,574	197,346,814
Disability benefits	53,237,603	54,100,956
Survivor benefits	10,291,354	10,625,975
Refunds and distributions	6,760,028	9,349,667
Administrative expenses	3,064,250	3,059,212
Total deductions	266,774,809	274,482,624
Net increase in net position	167,328,846	16,865,234
Net position restricted for pensions		
Beginning of year	4,149,307,441	4,316,636,287
End of year	\$ 4,316,636,287	\$ 4,333,501,521



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

	Fiscal Year Ending June 30, 2019		Fiscal Year Ending June 30, 2020	
	Total	Non-GRIP	GRIP	Total
Additions:				
Contributions:				
Employer ¹	\$ 86,584,479	\$ 76,966,802	\$ 10,231,934	\$ 87,198,736
Members	29,628,822	23,792,021	6,989,011	30,781,032
Total contributions	116,213,301	100,758,823	17,220,945	117,979,768
Net investment income	317,890,354	165,680,339	7,687,751	173,368,090
Total additions	434,103,655	266,439,162	24,908,696	291,347,858
Deductions:				
Benefit Payments and distributions	263,710,559	263,143,031	8,280,381	271,423,412
Administrative expenses	3,064,250	2,725,036	334,176	3,059,212
Total deductions	266,774,809	265,868,067	8,614,557	274,482,624
Net increase in net position	167,328,846	571,095	16,294,139	16,865,234
Net position restricted for pensions				
Beginning of year	4,149,307,441	4,132,994,578	183,641,709	4,316,636,287
End of year	\$4,316,636,287	\$4,133,565,673	\$ 199,935,848	\$4,333,501,521

Net investment income is allocated using the estimated market value rate of return on total plan assets during the fiscal year (7.80% and 4.09% for fiscal years ending June 30, 2019, and June 30, 2020, 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.

¹ *GRIP employer contributions are based on the County actuarial contribution rate of 5.93 percent of pay for fiscal year 2020 compared to the employer contribution rates credited to member GRIP accounts (8 percent of pay, 10 percent of pay for public safety employees) and the employer dollar amount contributed to member GRIP accounts of \$13,803,621.*



Development of Actuarial Value of Assets (Total ERS)

Fiscal Year Ending	2019	2020	2021	2022	2023	2024
Beginning of Year:						
(1) Market Value of Assets	\$ 4,149,307,441	\$ 4,316,636,287				
(2) Actuarial Value of Assets	4,149,354,330	4,261,996,413				
End of Year:						
(3) Market Value of Assets	4,316,636,287	4,333,501,521				
(4a) Contributions	116,213,301	117,979,768				
(4b) Net Disbursements	266,774,809	274,482,624				
(5) Total Investment Income						
=(3)-(1)-(4a)+(4b)	317,890,354	173,368,090				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
=(1)x(6)+([1+(6)] ⁵ -1)x(4a-4b)	305,654,072	317,984,963				
(8) Asset Adjustment	-	-				
(9) Investment Income in Excess of Projected Income	12,236,282	(144,616,873)				
(10) Excess Investment Income Recognized						
This Year (5-year recognition)						
(10a) From This Year	\$ 2,447,256	\$ (28,923,375)				
(10b) From One Year Ago	9,929,585	2,447,256	\$ (28,923,375)			
(10c) From Two Years Ago	28,939,665	9,929,585	2,447,256	\$ (28,923,375)		
(10d) From Three Years Ago	(42,817,237)	28,939,665	9,929,585	2,447,256	\$ (28,923,375)	
(10e) From Four Years Ago	(40,949,750)	(42,817,236)	28,939,664	9,929,585	2,447,258	\$ (28,923,373)
(10f) Total Recognized Investment Gain/(Loss)	(42,450,481)	(30,424,105)	12,393,130	(16,546,534)	(26,476,117)	(28,923,373)
(11) Change in Actuarial Value of Assets						
=(4a)-(4b)+(7)+(8)+(10f)	112,642,083	131,058,002				
End of Year:						
(3) Market Value of Assets	\$ 4,316,636,287	\$ 4,333,501,521				
(12) Final Actuarial Value of Assets as of 6/30 = (2)+(11)	\$ 4,261,996,413	\$ 4,393,054,415				
(13) Difference between Market & Actuarial Values	54,639,874	(59,552,894)				
(14) Estimated Market Value Rate of Return on Total Plan Assets	7.80%	4.09%				
(15) Estimated Market Value Return on Invested Plan Assets ¹	8.05%	3.41%				
(16) Actuarial Value Rate of Return	6.46%	6.87%				
(17) Ratio of Actuarial Value to Market Value	99%	101%				

¹ Rate calculated and provided by the County.



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

Fiscal Year Ending	2019	2020	2021	2022	2023	2024
Beginning of Year:						
(1) Market Value of Assets	\$ 161,527,504	\$ 183,641,709				
(2) Actuarial Value of Assets	160,979,689	181,485,157				
End of Year:						
(3) Market Value of Assets	183,641,709	199,935,848				
(4a) Contributions	15,152,460	17,220,945				
(4b) Net Disbursements	5,999,121	8,614,557				
(5) Total Investment Income						
=(3)-(1)-(4a)+(4b)	12,960,866	7,687,751				
(6) Projected Rate of Return	7.50%	7.50%				
(7) Projected Investment Income						
=(1)x(6)+[(1+(6))^5-1]x(4a-4b)	12,451,608	14,090,033				
(8) Asset Adjustment	-	-				
(9) Investment Income in Excess of Projected Income	509,258	(6,402,282)				
(10) Excess Investment Income Recognized						
This Year (5-year recognition)						
(10a) From This Year	\$ 101,852	\$ (1,280,456)				
(10b) From One Year Ago	372,635	101,852	\$ (1,280,456)			
(10c) From Two Years Ago	996,532	372,635	101,852	\$ (1,280,456)		
(10d) From Three Years Ago	(1,361,821)	996,532	372,635	101,852	\$ (1,280,456)	
(10e) From Four Years Ago	(1,208,677)	(1,361,821)	996,532	372,633	101,850	\$ (1,280,458)
(10f) Total Recognized Investment Gain/(Loss)	(1,099,479)	(1,171,258)	190,563	(805,971)	(1,178,606)	(1,280,458)
(11) Change in Actuarial Value of Assets						
=(4a)-(4b)+(7)+(8)+(10f)	20,505,468	21,525,163				
End of Year:						
(3) Market Value of Assets	\$ 183,641,709	\$ 199,935,848				
(12) Final Actuarial Value of Assets as of 6/30 = (2)+(11)	\$ 181,485,157	\$ 203,010,320				
(13) Difference between Market & Actuarial Values	2,156,552	(3,074,472)				
(14) Estimated Market Value Rate of Return on Total Plan Assets	7.80%	4.09%				
(15) Estimated Market Value Return on Invested Plan Assets ¹	8.05%	3.41%				
(16) Actuarial Value Rate of Return	6.86%	6.95%				
(17) Ratio of Actuarial Value to Market Value	99%	102%				

¹ Rate calculated and provided by the County.



Allocation of Actuarial Value of Assets by Group

	Valuation as of July 1, 2020								July 1, 2019	
	Non-Public Safety			Public Safety					Total	Total
	Group A	Group H	Group J	Group E	Group F	Group G	GRIP			
Beginning of Year:										
(1) Actuarial Value of Assets ¹	\$ 887,368,462	\$ 666,003,557	\$ 52,710,683	\$ 414,319,994	\$ 1,174,157,548	\$ 885,951,012	\$ 181,485,157	\$ 4,261,996,413	\$ 4,149,354,330	
End of Year:										
(2a) County Contributions	\$ 13,633,159	\$ 15,939,160	\$ 1,508,036	\$ 4,112,616	\$ 16,848,773	\$ 24,925,058	\$ 10,231,934	\$ 87,198,736	\$ 86,584,479	
(2b) Employee Contributions	2,295,004	2,408,484	844,148	2,532,844	8,019,821	7,691,720	6,989,011	30,781,032	29,628,822	
(2c) Total Contributions ²	\$ 15,928,163	\$ 18,347,644	\$ 2,352,184	\$ 6,645,460	\$ 24,868,594	\$ 32,616,778	\$ 17,220,945	\$ 117,979,768	\$ 116,213,301	
(3a) Benefit Payments and Refunds	\$ 74,302,635	\$ 52,649,404	\$ 1,074,987	\$ 26,686,582	\$ 58,640,648	\$ 49,788,775	\$ 8,280,381	\$ 271,423,412	\$ 263,710,559	
(3b) Administrative Expenses	376,523	347,400	93,001	242,986	927,317	737,809	334,176	3,059,212	3,064,250	
(3c) Total Deductions ³	\$ 74,679,158	\$ 52,996,804	\$ 1,167,988	\$ 26,929,568	\$ 59,567,965	\$ 50,526,584	\$ 8,614,557	\$ 274,482,624	\$ 266,774,809	
(4) Investment Return (AVA Basis)	\$ 58,953,646	\$ 44,565,881	\$ 3,659,737	\$ 27,767,299	\$ 79,460,172	\$ 60,235,348	\$ 12,918,775	\$ 287,560,858	\$ 263,203,591	
(5) Actuarial Value of Assets	\$ 887,571,113	\$ 675,920,278	\$ 57,554,616	\$ 421,803,185	\$ 1,218,918,349	\$ 928,276,554	\$ 203,010,320	\$ 4,393,054,415	\$ 4,261,996,413	
(6) AVA Rate of Return	6.87%	6.87%	6.87%	6.87%	6.87%	6.87%	6.95%	6.87%	6.46%	
(7) Final Actuarial Value of Assets	\$ 887,571,113	\$ 675,920,278	\$ 57,554,616	\$ 421,803,185	\$ 1,218,918,349	\$ 928,276,554	\$ 203,010,320	\$ 4,393,054,415	\$ 4,261,996,413	

¹ Actuarial value of assets by group is from the actuarial valuation as of July 1, 2019.

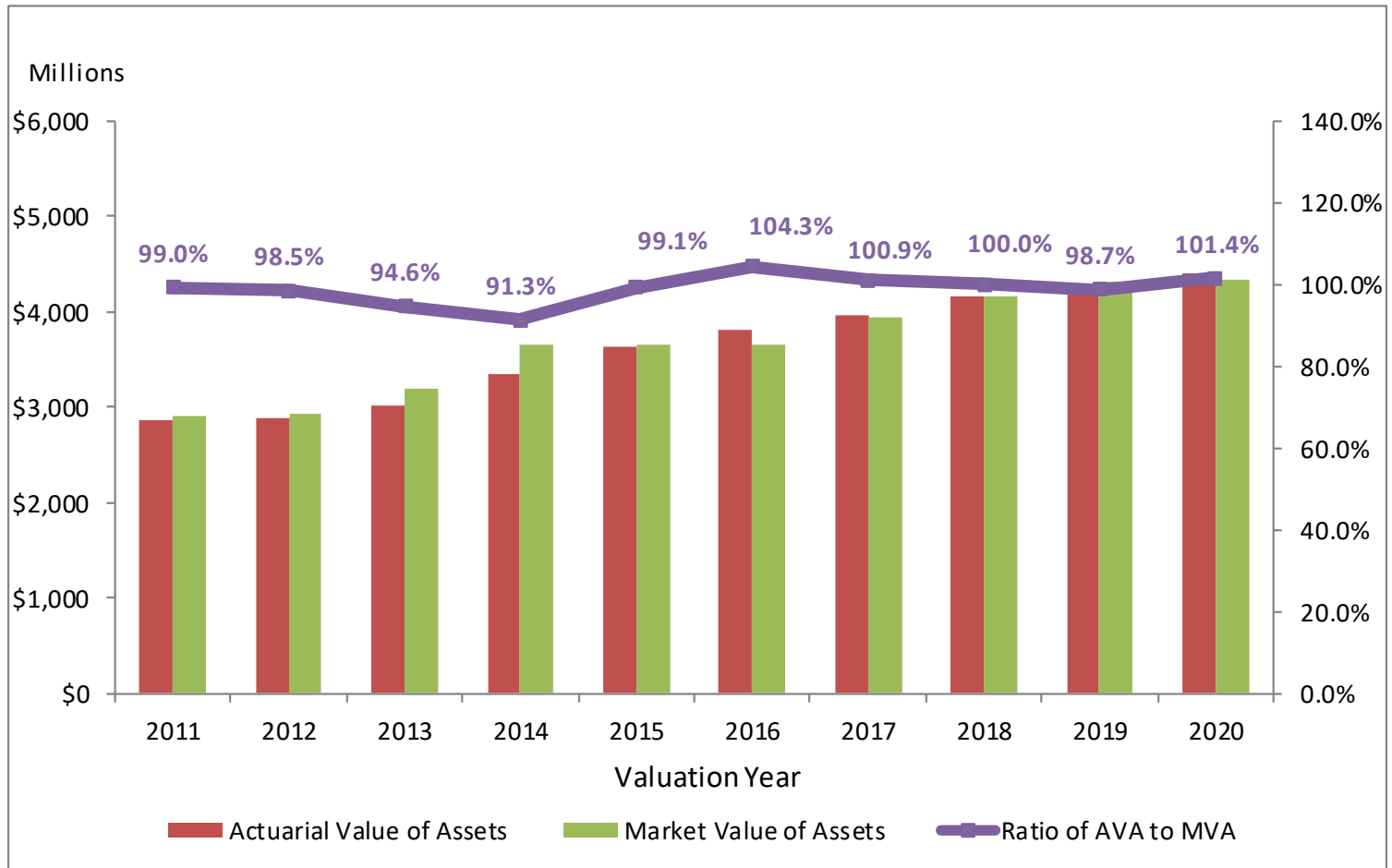
² Contributions by group allocated based on fiscal year 2020 contribution rates and expected fiscal year 2020 payroll from the prior actuarial valuation as of July 1, 2019.

³ Deductions by group allocated based on amounts projected by group from the prior actuarial valuation as of July 1, 2019.

Beginning in fiscal year 2019, Group J is included with the Non-Public Safety 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, 2020 and July 1, 2019)

	Valuation as of July 1, 2020							Total
	Non-Public Safety			Public Safety				
	Group A	Group H	Group J	Group E	Group F	Group G	GRIP	
Total All Plans								
Active Members								
Number	272	406	136	472	1,221	1,176	2,521	6,204
Average Age	59.7	59.7	47.2	41.6	39.7	38.9	47.5	45.2
Average Service	29.7	28.2	13.1	10.8	13.9	12.3	7.4	12.3
Total Base Payroll	\$ 31,034,982	\$ 33,509,002	\$ 12,019,670	\$ 35,359,622	\$ 108,264,848	\$ 99,771,359	\$ 183,697,027	\$ 503,656,510
Contribution Basis Payroll:								
For Normal Cost	\$ 28,328,610	\$ 30,635,099	\$ 11,334,524	\$ 33,855,269	\$ 104,164,939	\$ 96,401,700	\$ 176,052,318	\$ 480,772,459
For Amortization of Unfunded Liability*	22,338,336	26,340,962	12,019,670	35,359,622	108,264,848	99,771,359	183,697,027	487,791,824
DRSP/DROP Members								
Number				39	73	64		176
Total Base Payroll				\$ 4,106,934	\$ 7,781,153	\$ 7,443,267		\$ 19,331,354
Total Benefits				2,130,864	5,044,890	4,552,955		11,728,709
Terminated Vested Members								
Number	33	41	1	29	28	19	378	529
Total Benefits	\$ 318,008	\$ 342,848	\$ 4,929	\$ 442,288	\$ 234,092	\$ 118,179		\$ 1,460,344
Retired Members and Beneficiaries								
Number							5	6,607
Total Benefits							\$ 70,130	\$ 258,118,052
Total Membership							2,904	13,516

	Valuation as of July 1, 2019							Total
	Non-Public Safety			Public Safety				
	Group A	Group H	Group J	Group E	Group F	Group G	GRIP	
Total All Plans								
Active Members								
Number	314	466	129	457	1,230	1,153	2,254	6,003
Average Age	59.2	59.4	47.2	41.6	39.6	38.7	47.4	45.2
Average Service	29.1	27.7	13.8	11.0	13.8	12.2	7.3	12.7
Total Base Payroll	\$ 35,177,690	\$ 37,608,010	\$ 11,375,815	\$ 33,706,249	\$ 105,953,344	\$ 92,373,859	\$ 160,424,145	\$ 476,619,112
Contribution Basis Payroll:								
For Normal Cost	\$ 32,286,121	\$ 34,514,823	\$ 10,729,553	\$ 32,306,505	\$ 102,170,159	\$ 89,415,570	\$ 153,858,772	\$ 455,281,503
For Amortization of Unfunded Liability*	25,941,127	29,953,786	11,375,815	33,706,249	105,953,344	92,373,859	160,424,145	459,728,326
DRSP/DROP Members								
Number				40	60	71		171
Total Base Payroll				\$ 4,132,707	\$ 6,577,642	\$ 7,844,103		\$ 18,554,451
Total Benefits				2,237,497	4,330,306	5,046,743		11,614,546
Terminated Vested Members								
Number	42	51	1	30	29	20	370	543
Total Benefits	\$ 415,356	\$ 397,624	\$ 4,929	\$ 469,912	\$ 242,586	\$ 130,611		\$ 1,661,018
Retired Members and Beneficiaries								
Number							4	6,560
Total Benefits							\$ 57,237	\$ 254,564,987
Total Membership							2,628	13,277

*Excludes Non-GRIP UAL Payroll from Outside Agencies. As of July 1, 2020, this amount is \$1,873,108, and as of July 1, 2019, this amount is \$1,897,641.



Summary of Active Participant Data by Plan

	Valuation as of July 1, 2020 Including DROP/DRSP Actives							Total
	Non-Public Safety			Public Safety			GRIP	
	Group A	Group H	Group J	Group E	Group F	Group G		
Optional Non-Integrated								
Number	1	2	-	-	-	1		4
Total Base Payroll	\$ 93,777	\$ 198,777	\$ -	\$ -	\$ -	\$ 113,727		\$ 406,281
Optional Integrated								
Number	2	4	-	-	-	-		6
Total Base Payroll	\$ 194,514	\$ 288,224	\$ -	\$ -	\$ -	\$ -		\$ 482,738
Mandatory Integrated								
Number	269	400	136	511	1,294	1,239		3,849
Total Base Payroll	\$ 30,746,691	\$ 33,022,001	\$ 12,019,670	\$ 39,466,556	\$ 116,046,001	\$ 107,100,898		\$ 338,401,817
GRIP								
Number							2,521	2,521
Total Base Payroll							\$ 183,697,027	\$ 183,697,027
Total All Plans								
Number	272	406	136	511	1,294	1,240	2,521	6,380
Total Base Payroll	\$ 31,034,982	\$ 33,509,002	\$ 12,019,670	\$ 39,466,556	\$ 116,046,001	\$ 107,214,625	\$ 183,697,027	\$ 522,987,863
	Valuation as of July 1, 2020 Excluding DROP/DRSP Actives							Total
	Non-Public Safety			Public Safety			GRIP	
	Group A	Group H	Group J	Group E	Group F	Group G		
Optional Non-Integrated								
Number	1	2	-	-	-	1		4
Total Base Payroll	\$ 93,777	\$ 198,777	\$ -	\$ -	\$ -	\$ 113,727		\$ 406,281
Optional Integrated								
Number	2	4	-	-	-	-		6
Total Base Payroll	\$ 194,514	\$ 288,224	\$ -	\$ -	\$ -	\$ -		\$ 482,738
Mandatory Integrated								
Number	269	400	136	472	1,221	1,175		3,673
Total Base Payroll	\$ 30,746,691	\$ 33,022,001	\$ 12,019,670	\$ 35,359,622	\$ 108,264,848	\$ 99,657,631		\$ 319,070,463
GRIP								
Number							2,521	2,521
Total Base Payroll							\$ 183,697,027	\$ 183,697,027
Total All Plans								
Number	272	406	136	472	1,221	1,176	2,521	6,204
Total Base Payroll	\$ 31,034,982	\$ 33,509,002	\$ 12,019,670	\$ 35,359,622	\$ 108,264,848	\$ 99,771,359	\$ 183,697,027	\$ 503,656,510



Summary of Active Participant Data by Outside Agencies

Valuation as of July 1, 2020

	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
Non-GRIP Membership												
Active Members												
Number	-	1	1	-	20	2	2	-	-	26	3,657	3,683
Average Age	-	69.6	59.8	-	61.5	51.5	55.9	-	-	60.6	43.5	43.6
Average Service	-	49.0	29.8	-	30.1	30.2	26.9	-	-	30.6	15.6	15.7
Total Base Payroll	\$ -	\$ 93,777	\$ 128,789	\$ -	\$ 1,850,018	\$ 97,556	\$ 338,234	\$ -	\$ -	\$ 2,508,374	\$ 317,451,109	\$ 319,959,483
DRSP/DROP Members												
Number											176	176
Total Base Payroll											\$ 19,331,354	\$ 19,331,354
Total Benefits											\$ 11,728,709	\$ 11,728,709
Terminated Vested Members												
Number	-	-	-	-	12	-	-	1	-	13	138	151
Total Benefits	\$ -	\$ -	\$ -	\$ -	\$ 83,274	\$ -	\$ -	\$ 4,366	\$ -	\$ 87,639	\$ 1,372,705	\$ 1,460,344
Retired Members and Beneficiaries												
Number	19	4	7	7	153	20	5	4	1	220	6,382	6,602
Total Benefits	\$ 1,158,621	\$ 93,665	\$ 319,614	\$ 219,439	\$ 3,851,115	\$ 362,752	\$ 181,637	\$ 97,394	\$ 15,631	\$ 6,299,868	\$ 251,748,054	\$ 258,047,922
Total Non-GRIP Membership	19	5	8	7	185	22	7	5	1	259	10,353	10,612
GRIP Membership												
Active Members												
Number	-	-	-	-	112	7	11	1	-	131	2,390	2,521
Average Age	-	-	-	-	50.0	41.9	43.8	42.1	-	49.0	47.4	47.5
Average Service	-	-	-	-	7.3	2.8	4.4	9.5	-	6.8	7.4	7.4
Total Base Payroll	\$ -	\$ -	\$ -	\$ -	\$ 8,006,969	\$ 415,860	\$ 619,353	\$ 36,674	\$ -	\$ 9,078,856	\$ 174,618,171	\$ 183,697,027
Terminated GRIP Members												
Retired GRIP Members	-	-	-	-	11	1	2	-	-	14	364	378
Total GRIP Membership	-	-	-	-	123	8	13	1	-	145	2,759	2,904
Total GRIP and Non-GRIP Membership	19	5	8	7	308	30	20	6	1	404	13,112	13,516



Age/Service by Group as of July 1, 2020

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	-	-	1	-	-	-	-	-	-	1	95,880
40-44	-	-	2	2	-	-	-	-	-	4	351,663
45-49	-	-	-	1	4	5	2	-	-	12	1,034,938
50-54	-	-	-	2	2	33	18	-	-	55	5,818,321
55-59	-	-	-	1	3	28	32	4	-	68	7,639,555
60-64	-	-	3	1	3	14	39	9	4	73	9,074,297
65-69	-	1	-	-	2	15	12	8	4	42	5,039,832
70-74	-	-	-	-	-	6	3	2	-	11	1,269,937
75 and Over	-	-	-	-	-	2	2	2	-	6	710,559
Total	-	1	6	7	14	103	108	25	8	272	\$ 31,034,982

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:	59.7	Average Age:	59.2
Average Service:	29.7	Average Service:	29.1
Average Annual Pay:	\$ 114,099	Average Annual Pay:	\$ 112,031
Vested Participants	272	Vested Participants	314
Nonvested Participants	-	Nonvested Participants	-
Total Participants	272	Total Participants	314

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	1	-	-	-	-	-	-	-	-	1	54,339
30-34	-	-	2	-	-	-	-	-	-	2	146,963
35-39	2	-	1	1	-	-	-	-	-	4	281,222
40-44	2	1	1	4	-	-	-	-	-	8	594,552
45-49	-	-	2	3	5	7	-	-	-	17	1,469,987
50-54	-	1	1	8	10	32	22	1	-	75	6,186,118
55-59	-	-	1	8	15	39	34	4	2	103	8,560,201
60-64	-	-	1	-	8	32	39	11	4	95	7,970,923
65-69	-	-	1	4	5	20	25	9	7	71	5,745,746
70-74	-	-	-	-	2	4	6	3	4	19	1,666,742
75 and Over	-	-	1	-	-	4	2	1	3	11	832,209
Total	5	2	11	28	45	138	128	29	20	406	\$ 33,509,002

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:	59.7	Average Age:	59.4
Average Service:	28.2	Average Service:	27.7
Average Annual Pay:	\$ 82,534	Average Annual Pay:	\$ 80,704
Vested Participants	401	Vested Participants	463
Nonvested Participants	5	Nonvested Participants	3
Total Participants	406	Total Participants	466



Age/Service by Group as of July 1, 2020

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	3	1	-	-	-	-	-	-	-	4	250,412
30-34	12	1	2	-	-	-	-	-	-	15	982,106
35-39	5	3	8	1	-	-	-	-	-	17	1,299,181
40-44	4	3	2	7	4	-	-	-	-	20	1,891,117
45-49	7	4	1	5	8	3	-	-	-	28	2,623,038
50-54	2	3	4	4	4	-	-	-	-	17	1,660,723
55-59	1	2	2	10	3	1	2	-	-	21	2,011,463
60-64	2	-	1	1	-	1	3	-	1	9	873,993
65-69	-	1	1	1	1	-	-	-	-	4	340,968
70-74	-	1	-	-	-	-	-	-	-	1	86,669
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	36	19	21	29	20	5	5	-	1	136	\$ 12,019,670

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:	47.2	Average Age:	47.2
Average Service:	13.1	Average Service:	13.8
Average Annual Pay:	\$ 88,380	Average Annual Pay:	\$ 88,185
Vested Participants	100	Vested Participants	104
Nonvested Participants	36	Nonvested Participants	25
Total Participants	136	Total Participants	129

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	17	-	-	-	-	-	-	-	-	17	\$ 897,302
25-29	53	10	-	-	-	-	-	-	-	63	3,515,674
30-34	35	21	7	-	-	-	-	-	-	63	3,870,744
35-39	28	17	18	5	-	-	-	-	-	68	4,523,363
40-44	7	7	15	30	2	-	-	-	-	61	5,095,923
45-49	14	5	16	32	22	2	-	-	-	91	7,805,086
50-54	6	2	11	20	15	4	1	-	-	59	5,353,254
55-59	5	3	5	14	9	2	-	-	-	38	3,203,904
60-64	-	-	3	2	2	1	-	-	-	8	716,898
65-69	-	-	-	1	3	-	-	-	-	4	377,474
70-74	-	-	-	-	-	-	-	-	-	0	-
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	165	65	75	104	53	9	1	-	-	472	\$ 35,359,622

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:	41.6	Average Age:	41.6
Average Service:	10.8	Average Service:	11.0
Average Annual Pay:	\$ 74,914	Average Annual Pay:	\$ 73,755
Vested Participants	307	Vested Participants	305
Nonvested Participants	165	Nonvested Participants	152
Total Participants	472	Total Participants	457



Age/Service by Group as of July 1, 2020

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	\$ 2,474,624
25-29	92	73	-	-	-	-	-	-	-	165	10,425,350
30-34	34	152	25	-	-	-	-	-	-	211	15,388,281
35-39	8	43	117	50	-	-	-	-	-	218	19,216,274
40-44	4	15	35	125	21	-	-	-	-	200	19,698,662
45-49	1	8	11	53	81	28	-	-	-	182	19,242,073
50-54	-	-	6	20	46	67	16	-	-	155	17,026,932
55-59	-	-	1	4	2	9	16	1	-	33	3,735,882
60-64	-	2	1	1	1	-	2	4	-	11	1,056,770
65-69	-	-	-	-	-	-	-	-	-	0	-
70-74	-	-	-	-	-	-	-	-	-	0	-
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	185	293	196	253	151	104	34	5	-	1,221	\$ 108,264,848

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:	39.7	Average Age:	39.6
Average Service:	13.9	Average Service:	13.8
Average Annual Pay:	\$ 88,669	Average Annual Pay:	\$ 86,141
Vested Participants	1,036	Vested Participants	1,022
Nonvested Participants	185	Nonvested Participants	208
Total Participants	1,221	Total Participants	1,230

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	2	-	-	-	-	-	-	-	39	\$ 2,105,296
25-29	107	61	-	-	-	-	-	-	-	168	10,086,452
30-34	69	113	54	2	-	-	-	-	-	238	16,623,586
35-39	25	52	99	52	2	-	-	-	-	230	19,476,123
40-44	8	22	52	81	24	1	-	-	-	188	17,966,067
45-49	8	6	24	50	55	27	1	-	-	171	17,963,198
50-54	2	3	14	16	23	30	21	-	-	109	12,082,672
55-59	-	2	3	3	5	4	8	1	-	26	2,754,663
60-64	-	-	2	-	-	-	1	1	1	5	512,915
65-69	-	-	1	-	-	-	-	-	1	2	200,387
70-74	-	-	-	-	-	-	-	-	-	0	-
75 and Over	-	-	-	-	-	-	-	-	-	0	-
Total	256	261	249	204	109	62	31	2	2	1,176	\$ 99,771,359

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:	38.9	Average Age:	38.7
Average Service:	12.3	Average Service:	12.2
Average Annual Pay:	\$ 84,840	Average Annual Pay:	\$ 80,116
Vested Participants	920	Vested Participants	915
Nonvested Participants	256	Nonvested Participants	238
Total Participants	1,176	Total Participants	1,153



Age/Service by Group as of July 1, 2020

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	18	4	-	-	-	-	-	-	-	22	\$ 983,940
25-29	142	24	3	-	-	-	-	-	-	169	9,206,604
30-34	229	67	7	1	-	-	-	-	-	304	18,872,865
35-39	200	68	19	4	-	-	-	-	-	291	20,158,412
40-44	185	76	30	16	1	-	-	-	-	308	22,200,992
45-49	168	73	31	27	16	-	-	-	-	315	24,393,181
50-54	140	74	45	42	22	5	-	-	-	328	24,261,919
55-59	120	80	56	44	40	2	-	-	-	342	27,039,351
60-64	67	58	46	47	36	9	-	-	-	263	21,421,798
65-69	21	31	27	17	28	7	-	-	-	131	11,083,624
70-74	5	5	12	13	6	-	-	-	-	41	3,453,916
75 and Over	1	1	-	3	1	1	-	-	-	7	620,424
Total	1,296	561	276	214	150	24	-	-	-	2,521	\$ 183,697,027

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:	47.5	Average Age:	47.4
Average Service:	7.4	Average Service:	7.3
Average Annual Pay:	\$ 72,867	Average Annual Pay:	\$ 71,173
Vested Participants	1,798	Vested Participants	1,460
Nonvested Participants	723	Nonvested Participants	794
Total Participants	2,521	Total Participants	2,254

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	118	6	-	-	-	-	-	-	-	124	\$ 6,461,161
25-29	398	169	3	-	-	-	-	-	-	570	33,538,830
30-34	379	354	97	3	-	-	-	-	-	833	55,884,544
35-39	268	183	263	113	2	-	-	-	-	829	65,050,456
40-44	210	124	137	265	52	1	-	-	-	789	67,798,976
45-49	198	96	85	171	191	72	3	-	-	816	74,531,501
50-54	150	83	81	112	122	171	78	1	-	798	72,389,940
55-59	126	87	68	84	77	85	92	10	2	631	54,945,018
60-64	69	60	57	52	50	57	84	25	10	464	41,627,595
65-69	21	33	30	23	39	42	37	17	12	254	22,788,031
70-74	5	6	12	13	8	10	9	5	4	72	6,477,264
75 and Over	1	1	1	3	1	7	4	3	3	24	2,163,192
Total	1,943	1,202	834	839	542	445	307	61	31	6,204	\$ 503,656,510

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:	45.2	Average Age:	45.2
Average Service:	12.3	Average Service:	12.7
Average Annual Pay:	\$ 81,183	Average Annual Pay:	\$ 79,397
Vested Participants	4,834	Vested Participants	4,583
Nonvested Participants	1,370	Nonvested Participants	1,420
Total Participants	6,204	Total Participants	6,003



Schedule of Active Member Data as of July 1, 2020

Valuation Date 7/1	Number	Annual Payroll	Average Annual Pay	% Increase in Avg Pay
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%
2019	6,003	476,619,112	79,397	1.86%
2020	6,204	503,656,510	81,183	2.25%

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, 2020

Valuation Date 7/1	Annuitants	Survivors	Disableds	Total Number	Total Annual Benefits	Total Average Annual Benefit
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
2019	5,128	471	1,132	6,731	266,179,533	39,545
2020	5,190 ¹	466 ²	1,127	6,783	269,846,761	39,783

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. Annual benefit amounts include total benefit amount for insured retirees (including the benefit amount that is paid by Aetna).

¹ Count includes 134 insured retirees with Total Annual Benefits of \$4,812,193.

² Count includes 99 insured survivors with Total Annual Benefits of \$2,060,901.



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 Groups A and H and separate 20-year closed periods for the Public Safety groups, Group J 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, 2021 through June 30, 2022 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 2022 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 2020 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, 2014 to July 1, 2018 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, 2019 actuarial valuation. Additional information regarding the rationale for the actuarial assumptions may be found in the 2019 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 2.50 percent.

The assumed COLA is as follows:

	Assumed COLA
100% of CPI, benefit attributable to pre 7/1/2011 service	2.50%
60% of CPI, benefit attributable to pre 7/1/2011 service	1.50%
100% of CPI*, benefit attributable to service on or after 7/1/2011	2.20%

**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	6.75%	9.50%	7.75%	10.75%
2	5.75%	9.25%	7.50%	9.25%
3	5.25%	8.00%	7.25%	7.75%
4	5.25%	6.75%	7.00%	7.25%
5	5.25%	6.25%	6.75%	6.75%
6	5.00%	5.75%	5.75%	6.75%
7	5.00%	5.75%	5.50%	6.75%
8	5.00%	5.25%	5.50%	6.75%
9	4.75%	4.75%	5.00%	6.75%
10	4.75%	4.75%	5.00%	6.75%
11	4.25%	4.75%	4.75%	5.25%
12	4.25%	4.75%	4.75%	5.25%
13	4.25%	4.75%	4.75%	5.25%
14	4.25%	4.75%	4.75%	5.25%
15	4.25%	4.75%	4.75%	5.25%
16	4.00%	4.50%	4.50%	4.25%
17	4.00%	4.50%	4.25%	4.25%
18	4.00%	4.50%	4.00%	4.25%
19	4.00%	4.25%	4.00%	4.25%
20	4.00%	4.25%	4.00%	4.25%
21	4.00%	4.00%	3.25%	3.25%
22	3.75%	3.75%	3.25%	3.25%
23	3.75%	3.75%	3.25%	3.25%
24	3.75%	3.75%	3.25%	3.25%
25	3.50%	3.75%	3.25%	3.25%
26	3.50%	3.75%	3.00%	3.25%
27	3.50%	3.75%	3.00%	3.25%
28	3.50%	3.50%	3.00%	3.25%
29	3.50%	3.50%	3.00%	3.25%
30+	3.00%	3.00%	3.00%	3.00%

The assumed rate of total payroll growth used in amortizing the unfunded liability as a level percentage of pay is 3.00 percent.

The assumed increase in the Social Security Taxable Wage Base is 3.00 percent.



Actuarial Valuation Assumptions (Continued)

The mortality assumptions are as follows:

To provide a margin for future mortality improvements, generational mortality improvements from 2010 using projection scale MP-2018 was used.

Type	Assumption
Post-retirement non-disabled	Groups A, H, J and GRIP Pub-2010 Healthy Retiree Mortality Table (for General Employees), sex distinct Groups E, F and G Pub-2010 Healthy Retiree Mortality Table (for Safety Employees), sex distinct
Post-retirement disabled	Groups A, H, J and GRIP Pub-2010 Disabled Retiree Mortality Table (for General Employees), sex distinct Groups E, F and G Pub-2010 Disabled Retiree Mortality Table (for Safety Employees), sex distinct
Pre-retirement non-service connected	Groups A, H, J and GRIP Pub-2010 Employee Mortality Table (for General Employees) , sex distinct Groups E, F and G Pub-2010 Employee Mortality Table (for Safety Employees), sex distinct
Pre-retirement service connected	Groups F and G 15% of the rates from the Pub-2010 Employee Mortality Table (for Safety Employees), sex distinct

Actuarial Valuation Assumptions (Continued)

Groups E, F and G						
Healthy Mortality					Disabled Mortality	
Age	Pre-Retirement Future Life		Post-Retirement Future Life		Future Life	
	Expectancy (years) in 2020		Expectancy (years) in 2020		Expectancy (years) in 2020	
	Male	Female	Male	Female	Male	Female
20	70.29	72.89	67.52	69.79	64.81	67.36
25	65.02	67.58	62.17	64.38	59.62	62.02
30	59.76	62.30	56.82	59.00	54.46	56.74
35	54.52	57.05	51.50	53.64	49.38	51.57
40	49.31	51.82	46.20	48.31	44.33	46.48
45	44.10	46.61	40.95	43.01	39.30	41.43
50	38.91	41.42	35.77	37.77	34.31	36.41
55	33.77	36.26	30.68	32.65	29.42	31.54
60	28.73	31.18	25.78	27.75	24.74	26.95
65	23.82	26.13	21.17	23.09	20.38	22.61
70	19.07	21.16	16.87	18.67	16.34	18.46
75	14.56	16.37	12.95	14.58	12.62	14.55
80	10.34	11.86	9.52	10.97	9.39	10.97
85	6.79	8.03	6.73	7.96	6.72	7.96
90	4.68	5.62	4.68	5.62	4.68	5.62
95	3.40	3.96	3.40	3.96	3.40	3.96
100	2.48	2.79	2.48	2.79	2.48	2.79
105	1.88	2.04	1.88	2.04	1.88	2.04

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



Actuarial Valuation Assumptions (Continued)

Groups A, H, J and GRIP						
Age	Healthy Mortality				Disabled Mortality	
	Pre-Retirement		Post-Retirement		Future Life	
	Future Life		Future Life			
	Expectancy (years) in 2020		Expectancy (years) in 2020		Expectancy (years) in 2020	
Male	Female	Male	Female	Male	Female	
20	70.92	73.41	67.59	70.77	53.27	56.67
25	65.63	68.09	62.21	65.36	48.37	51.45
30	60.34	62.78	56.82	59.96	43.43	46.25
35	55.10	57.49	51.48	54.58	38.78	41.40
40	49.90	52.23	46.17	49.22	34.38	36.91
45	44.73	46.99	40.89	43.89	30.15	32.72
50	39.59	41.78	35.74	38.68	26.21	28.85
55	34.52	36.62	30.81	33.70	22.70	25.42
60	29.57	31.55	26.09	28.82	19.58	22.26
65	24.77	26.57	21.58	24.07	16.71	19.04
70	20.07	21.67	17.31	19.51	13.93	15.69
75	15.49	16.90	13.37	15.23	11.19	12.42
80	11.02	12.29	9.88	11.40	8.63	9.51
85	7.11	8.23	7.02	8.16	6.44	7.14
90	4.91	5.68	4.91	5.68	4.68	5.37
95	3.46	3.97	3.46	3.97	3.42	3.94
100	2.48	2.79	2.48	2.79	2.48	2.79
105	1.88	2.04	1.88	2.04	1.88	2.04

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



Actuarial Valuation Assumptions (Continued)

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%	12.00%	16.00%	16.00%	7.00%	10.50%
1	9.00%	11.00%	10.00%	14.00%	4.00%	5.00%
2	8.50%	9.00%	6.00%	12.00%	3.50%	4.50%
3	6.50%	8.00%	5.00%	10.00%	3.00%	4.00%
4	6.00%	7.50%	5.00%	8.00%	2.50%	3.50%
5	5.50%	6.50%	5.00%	6.00%	2.25%	3.00%
6	5.00%	5.50%	5.00%	4.00%	2.00%	2.75%
7	4.50%	4.50%	5.00%	4.00%	1.75%	2.50%
8	4.00%	3.50%	4.00%	4.00%	1.50%	2.00%
9	4.00%	3.00%	3.00%	3.00%	1.25%	1.75%
10	3.00%	2.75%	2.00%	2.00%	1.00%	1.00%
11	3.00%	2.75%	1.50%	1.00%	0.75%	0.75%
12	3.00%	2.75%	1.00%	1.00%	0.50%	0.50%
13	3.00%	2.75%	1.00%	1.00%	0.25%	0.25%
14	3.00%	2.75%	1.00%	1.00%	0.25%	0.25%
15	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
16	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
17	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
18	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
19	2.50%	2.50%	1.00%	1.00%	0.25%	0.25%
20+	2.00%	2.00%	1.00%	1.00%	0.25%	0.25%

Vested participants who 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:

Age	Non-Public Safety				Public Safety					
	Groups A and H		Group J		Group E		Group F		Group G	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
20	0.0144%	0.0063%	0.0288%	0.0197%	0.0288%	0.0197%	0.0504%	0.0709%	0.0720%	0.0788%
25	0.0295%	0.0168%	0.0590%	0.0525%	0.0590%	0.0525%	0.1033%	0.1890%	0.1475%	0.2100%
30	0.0604%	0.0448%	0.1207%	0.1400%	0.1207%	0.1400%	0.2113%	0.5040%	0.3018%	0.5600%
35	0.1058%	0.0705%	0.2117%	0.2203%	0.2117%	0.2203%	0.3704%	0.7931%	0.5292%	0.8812%
40	0.1626%	0.1310%	0.3251%	0.4094%	0.3251%	0.4094%	0.5690%	1.4738%	0.8128%	1.6375%
45	0.3092%	0.2456%	0.6184%	0.7674%	0.6184%	0.7674%	1.0822%	2.7626%	1.5460%	3.0695%
50	0.5316%	0.3301%	1.0631%	1.0316%	1.0631%	1.0316%	1.8605%	3.7139%	2.6578%	4.1265%
55	0.7573%	0.3469%	1.5147%	1.0841%	1.5147%	1.0841%	2.6507%	3.9029%	3.7867%	4.3365%
60	0.7573%	0.3469%	1.5147%	1.0841%	1.5147%	1.0841%	2.6507%	3.9029%	3.7867%	4.3365%

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

Group	Total		Service Connected Disability	
	Non-Service	Service	Total Incapacity	Partial Incapacity
	Connected	Connected	70% Benefit	52.5% Benefit
A and H	65%	35%	17.5%	17.5%
E and J	60%	40%	10.0%	30.0%
F	33%	67%	20.0%	46.7%
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:

Age	Groups A and H		Groups E and J			Group F			Group G			GRIP	
	Under 30 Years of Service	30 Years of Service and Over	Under 25 Years of Service	25 Years of Service and Over	First DROP Eligibility (Group E Only)	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%		2.50%	10.00%	10.00%	2.50%	2.50%	2.50%		
42			3.50%	3.50%		2.50%	10.00%	10.00%	5.00%	5.00%	5.00%		
43			3.50%	3.50%		2.50%	10.00%	10.00%	5.00%	5.00%	5.00%		
44			3.50%	3.50%		2.50%	10.00%	10.00%	5.00%	5.00%	5.00%		
45	2.00%	2.00%	3.50%	8.00%		2.50%	10.00%	10.00%	5.00%	15.00%	7.50%		
46	2.00%	2.00%	3.50%	8.00%	18.00%	3.00%	10.00%	10.00%	5.00%	15.00%	7.50%		
47	2.00%	2.00%	3.50%	8.00%	18.00%	4.00%	10.00%	10.00%	5.00%	15.00%	7.50%		
48	2.00%	2.00%	3.50%	8.00%	18.00%	4.00%	10.00%	10.00%	5.00%	15.00%	10.00%		
49	2.00%	2.00%	5.00%	20.00%	30.00%	4.00%	10.00%	10.00%	10.00%	20.00%	10.00%		
50	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	18.00%	18.00%	10.00%	20.00%	10.00%		
51	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	18.00%	18.00%	10.00%	20.00%	17.50%		
52	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	18.00%	18.00%	12.50%	22.50%	20.00%		
53	3.00%	12.50%	7.50%	20.00%	30.00%	8.00%	20.00%	20.00%	12.50%	22.50%	20.00%		
54	3.00%	12.50%	7.50%	20.00%	30.00%	12.00%	20.00%	20.00%	12.50%	22.50%	20.00%		
55	6.00%	15.00%	15.00%	30.00%	25.00%	12.00%	50.00%	35.00%	15.00%	25.00%	30.00%	3.00%	3.00%
56	6.00%	15.00%	15.00%	30.00%	25.00%	12.00%	50.00%	35.00%	15.00%	25.00%	30.00%	3.00%	3.00%
57	6.00%	15.00%	15.00%	30.00%	25.00%	15.00%	50.00%	35.00%	15.00%	25.00%	30.00%	4.50%	5.00%
58	6.00%	15.00%	15.00%	30.00%	25.00%	15.00%	50.00%	35.00%	15.00%	25.00%	40.00%	4.50%	6.00%
59	6.00%	15.00%	15.00%	30.00%	25.00%	15.00%	50.00%	35.00%	15.00%	25.00%	40.00%	4.50%	6.50%
60	11.00%	18.00%	15.00%	30.00%	50.00%	20.00%	65.00%	50.00%	30.00%	40.00%	40.00%	4.50%	7.00%
61	13.00%	18.00%	15.00%	30.00%	50.00%	20.00%	65.00%	50.00%	30.00%	40.00%	40.00%	4.50%	7.50%
62	14.00%	18.00%	15.00%	30.00%	50.00%	20.00%	65.00%	50.00%	30.00%	40.00%	40.00%	7.00%	15.00%
63	11.00%	18.00%	15.00%	30.00%	50.00%	25.00%	65.00%	50.00%	30.00%	40.00%	40.00%	7.00%	15.00%
64	11.00%	18.00%	15.00%	30.00%	50.00%	25.00%	65.00%	50.00%	30.00%	40.00%	40.00%	10.00%	15.00%
65	15.00%	18.00%	50.00%	50.00%	85.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	13.00%	20.00%
66	22.00%	25.00%	50.00%	50.00%	85.00%							13.00%	20.00%
67	20.00%	20.00%	50.00%	50.00%	85.00%							13.00%	25.00%
68	20.00%	20.00%	50.00%	50.00%	85.00%							13.00%	25.00%
69	20.00%	20.00%	50.00%	50.00%	85.00%							13.00%	30.00%
70	30.00%	35.00%	100.00%	100.00%	100.00%							25.00%	50.00%
71	30.00%	35.00%										25.00%	50.00%
72	30.00%	35.00%										30.00%	50.00%
73	30.00%	35.00%										30.00%	50.00%
74	30.00%	35.00%										30.00%	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%	85%
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.

Years of Sick Leave Per	
Group	Year of Credited Service
A	0.026
E, J	0.022
F	0.044
G	0.029
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 (Concluded)

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 Year	Actual Administrative Expenses				Assumed Expenses Added to Normal Cost
	3 Years Prior	2 Years Prior	1 Year Prior	3 Year Average	
2018	\$ 3,014,055	\$ 3,185,769	\$ 2,870,683	\$ 3,023,502	\$ 3,174,700
2019	3,185,769	2,870,683	3,064,250	3,040,234	3,192,200
2020	2,870,683	3,064,250	3,059,212	2,998,048	3,148,000

**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, 2020

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

- 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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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
2019	\$132,900
2020	\$137,700

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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*).



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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 up to Social Security maximum covered compensation (2.5 percent of average final earnings above Social Security maximum covered compensation) for each of the first 20 years of credited service, plus 1.375 percent of average final earnings up to Social Security maximum covered

Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

compensation (2 percent of average final earnings above Social Security maximum covered compensation) 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:

		YEARS EARLY										
		0	1	2	3	4	5	6	7	8	9	10
MONTHS EARLY	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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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. Termination of Employment

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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. Death Benefits

A. Non service-connected:

Eligibility: None.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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.*



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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:

<i>Modified Cash Refund Annuity</i>	Lifetime benefit with return of employee contributions with interest guaranteed
<i>10-Year Certain and Continuous Annuity</i>	Lifetime benefit with 120 monthly payments guaranteed
<i>Social Security Adjustment Option Combined with either Modified Cash Refund Annuity or a 10-Year Certain and Continuous Annuity</i>	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.
<i>Joint and Survivor Annuity</i>	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.
<i>Joint and Survivor Annuity with Pop-Up</i>	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.
<i>Social Security Adjustment Option Combined with Joint and Survivor Annuity Option</i>	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.
<i>Social Security Adjustment Option Combined with Joint and Survivor Annuity Pop-Up Option</i>	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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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.

Following are the recent COLA increases granted July 1.

COLA Granted July 1	100% of CPI, pre 7/1/2011 service	100% of CPI, capped at 2.5%, post 7/1/2011 service	60% of CPI
2018	2.453%	2.453%	1.472%
2019	1.603%	1.603%	0.962%
2020	-0.088%	-0.088%	-0.053%

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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. Discontinued Retirement Service Program (DRSP) for Group F (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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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.
- 7.5 percent interest on the amount in the account at the beginning of each calendar quarter (8.25 percent interest for members enrolled in DROP before July 1, 2013).

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



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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.



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

- 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. Retirement Incentive Program (*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. Elected Officials' Plan (EOP)

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



Brief Summary of Plan Provisions as of July 1, 2020 (Continued)

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, 2019.



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.”

