



United States Department of the Treasury District of Columbia Pensions Program

Actuarial Valuation Report

Valuation Date: October 1, 2020
Measurement Date: September 30, 2020
Report Date: October 27, 2020

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Executive Summary

Highlights of the Actuarial Valuation

The actuarial valuation report has been completed for the following program for the most recent plan year:

United States Department of the Treasury District of Columbia Pensions Program (Program)

The Program refers to the federal responsibility for benefit payments under the following District of Columbia (D.C.) retirement plans: District of Columbia Police Officers and Firefighters' Retirement Plan, District of Columbia Teachers' Retirement Plan, and District of Columbia Judges' Retirement Plan. The designated assets for the federal administration of these plans are held in two separate funds. The District of Columbia Teachers, Police Officers and Firefighters Federal Pension Fund ("D.C. Federal Pension Fund") covers federal payments under the District of Columbia Police Officers and Firefighters' Retirement Plan and District of Columbia Teachers' Retirement Plan. The Judicial Retirement and Survivors Annuity Fund ("Judicial Retirement Fund") covers payments under the District of Columbia Judges' Retirement Plan.

The purpose of this report is to present the results of the actuarial valuation including:

- To illustrate the current assets and liabilities of each Plan as of the end of Fiscal Year (FY) 2020 (October 1, 2019 through September 30, 2020);
- To review the experience of the Program over the past year and to discuss reasons for changes in Program costs;
- To determine the appropriate contribution to be paid by the Department of the Treasury to the Funds in FY 2021 (October 1, 2020 through September 30, 2021); and
- To identify and discuss any emerging trends in Program costs.

This report also includes certain statement line items and footnote disclosures necessary to compute the annual pension expense in accordance with Statement of Federal Financial Accounting Standards No. 5, Accounting for Liabilities of the Federal Government, and No. 33, Pensions, Other Retirement Benefits, and Other Postemployment Benefits: Reporting the Gains and Losses from Changes in Assumptions and Selecting Discount Rates and Valuation Dates (SFFAS 5 and SFFAS 33). Use of the valuation results for other purposes may not be appropriate.

Summary of Results

As of October 1, 2020	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
Actuarial Accrued Liability	\$ 8,050,546,961	\$ 267,876,951
Plan Assets	<u>(3,870,858,529)</u>	<u>(182,824,303)</u>
Unfunded Actuarial Accrued Liability	\$ 4,179,688,432	\$ 85,052,648
Normal Cost with Interest (including expected employee contributions)	N/A	\$ 6,400,000

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Summary of Gains and Losses

As part of the review of the valuation, an actuarial gain/loss analysis was performed. Expected liabilities and plan assets were developed presuming all demographic and economic assumptions from the prior valuation were realized during the plan year. These expected values were then compared to the actual results. The factors causing the liabilities or assets to be greater than expected (a loss for liabilities and a gain for assets), or smaller than expected (a gain for liabilities and a loss for assets) were isolated. Differences in liability not directly attributable to experience different than assumed, such as changes in assumptions and methods, were separately measured from this process.

The different sources of gains and losses, as well as their individual impacts, are outlined below.

Source of Liability (Gain)/Loss due to Actuarial Experience

Source of Demographic (Gain)/Loss	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
(Gains)/Losses due to Plan Experience:		
Active Decrements	\$ (12,427,477)	\$ (1,504,082)
Inactive Mortality	(26,634,555)	3,057,653
Salary Increase	(1,842,830)	1,183,894
New Entrants	N/A	437,739
Cost-of-Living Adjustment (COLA) Different than Expected	33,714,083	249,451
(Gains)/Losses due to Census Changes:	52,317,451	1,166,822
(Gains)/Losses due to New Terminated Vested Plan Members:	3,390,631	N/A
Total	\$ 48,517,303	\$ 4,591,477

We have provided clarification on these items below:

• **(Gains)/Losses due to Plan Experience:** The liability for each plan is expected to change based on certain demographic and economic assumptions; however, actual plan experience will differ to some degree. This creates (gains) or losses due to plan experience being different than expected with these assumptions. This includes the following primary factors:

- **Active Decrements:** The actuarial valuation assumes that each active plan member has a particular probability of terminating, retiring, becoming disabled, or becoming deceased in each year. An individual (gain) or loss is generated based on the plan member's actual status in the current valuation year based on the difference from what was expected. The gain for the Police Officers and Firefighters' and Teachers' Plans is primarily due to a group of new retirees who turned 50 since the prior valuation. The assumption in effect for the measurement of (gain)/loss assumed that an individual who leaves the population prior to attaining age 50 is a termination, causing a gain to be incurred in the active decrements category. The individuals' retirement loss is categorized as "other census changes" resulting in the correct calculation of the liability overall, despite the categorization of the individual pieces. For the Judges' Plan, fewer active members retired than were expected, resulting in a gain.

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Highlights of the Actuarial Valuation

- **Inactive Mortality:** The actuarial valuation assumes that each inactive plan member has a particular probability of becoming deceased in each year. An individual (gain) or loss is generated based on whether the plan member actually dies during the year. The gain shown for the Police Officers and Firefighters' and Teachers' Plans is driven by plan members in pay status dying at an earlier age or in greater number than expected in the past year. For the Judges' Plan there was only one death since the prior year, in contrast with the remaining population of older retirees and survivors who survived despite higher probabilities of death. Smaller populations are expected to experience larger deviations from expected year-over-year than a larger population, as individual deaths or survivorship have a more significant relative impact on the liability than in a larger population. Long-term gains and losses are expected to offset each other with experience aligning to the assumed mortality probabilities.
- **Salary Increase:** The actuarial valuation assumes that salaries for active plan members will increase by a certain amount. An individual (gain) or loss is generated for each plan member based on their actual salary amount reported in the current valuation. A gain is reported when a plan member's actual salary is lower than the expected amount, and a loss is reported when a plan member's actual salary is higher than the expected amount.
- **New Entrants:** The actuarial valuation incurs a loss whenever new members enter the plan with past service. The Police Officers and Firefighters' and Teachers' Plans are closed and will never incur a gain or loss due to this reason. The Judges' Plan reports a small loss due to the new plan members with past service.
- **COLA Different Than Expected:** The actuarial valuation assumes that retirement benefits for inactive plan members that are receiving benefits will increase by a certain amount. An individual (gain) or loss is generated for each plan member based on their actual benefit amount reported in the current valuation. The Police Officers and Firefighters' and Teachers' Plans had a loss primarily due to higher actual COLA percentages than expected. Note that the Police Officers and Firefighters' Plan members who retired prior to February 15, 1980 received retroactive pay increases, however, only the difference between the expected COLA and the actual COLA for 2020 have been included here. The remaining loss due to the retroactive increase for those who retired prior to February 15, 1980 is included in the \$4.3 million loss for continuing inactive plan members as discussed in the (Gains)/Losses due to Census Changes section below. The Judges' Plan had a loss due to higher COLA than expected.

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Highlights of the Actuarial Valuation

• **(Gains)/Losses due to Census Changes:** Each year, ODCP prepares the census data that will be used as the basis for the annual valuation. Inevitably, there will be updates to the census data beyond those that we would expect due to the passage of time. This category of (gain)/loss is described in more detail below.

For the **Police Officers and Firefighters' and Teachers' Plans**, the net loss amount was \$52.3 million and includes the following:

- A \$19.1 million loss resulting from new beneficiaries following the death of plan members for whom the chosen form of payment was unknown.
- An \$11.8 million net loss resulting from ongoing data management, including unexpected changes to data fields such as hire date, salary, service, etc.
- An \$11.2 million loss resulting from active plan members who retired or terminated within the past year, primarily due to benefits calculated at retirement different than previously estimated or those who were not eligible to begin benefits in the prior valuation.
- A \$4.3 million loss resulting from data updates for continuing inactive plan members, primarily due to correction of benefit amounts and retirement dates in the census data. In addition, the loss due to the retroactive portion of the COLA increase for plan members in the Police Officers and Firefighters' Plan who retired before February 15, 1980 is included in this loss.
- A \$5.7 million loss resulting from beneficiaries found when previously reported as "no future benefits due" in the prior valuation year and from finding new plan members due to data clean-up.
- A \$0.2 million loss resulting from rehires.

For the **Judges' Plan**, the total loss amount includes the following:

- A \$1.2 million loss resulting from active plan members who retired or terminated within the past year, primarily due to benefits calculated at retirement different than previously estimated.

• **(Gains)/Losses due to New Terminated Vested Plan Members:** There were 45 new terminated vested plan members discovered as a result of a data clean-up initiative performed by the program. This caused a \$3.4 million loss to the Police Officers and Firefighters' and Teachers' Plans.

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Highlights of the Actuarial Valuation

Source of Asset (Gain)/Loss due to Actuarial Experience

Asset (Gain)/Loss	D.C. Federal Pension Fund	Judicial Retirement Fund
Beginning of Year Assets	\$ 3,822,592,727	\$ 177,213,402
Expected Return on Assets	26,209,824	5,310,395
Actual Return on Assets	<u>66,868,543</u>	<u>3,654,359</u>
Asset (Gain)/Loss	\$ (40,658,719)	\$ 1,656,036

The plan assets experienced the following rates of return during the prior plan year:

	D.C. Federal Pension Fund	Judicial Retirement Fund
Assets	1.75%	2.05%

As noted on page 55 of this report in the Interest Rates for (Gain)/Loss section, the expected return on assets for the Judicial Retirement Fund is based on the prior year effective interest rate of 3.12% while the D.C. Federal Pension Fund's expected return on assets is based on the first rate on the prior year's yield curve, 0.74%. The Judicial Retirement Fund experienced a lower-than-anticipated return of 2.05% on fund assets and the D.C. Federal Pension Fund experienced a higher-than-anticipated return of 1.75% on fund assets, thus resulting in an asset loss and an asset gain, respectively.

Changes in Plan Provisions from the Previous Valuation

The valuation for the current plan year was based on the same plan provisions as the valuation for the prior plan year. We are not aware of any other changes to the plans since the last valuation.

A full summary of the plan provisions and plan changes for each plan (if any) can be found later in this report in Appendix C: Plan Provisions Summary.

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Highlights of the Actuarial Valuation

Source of Liability (Gain)/Loss due to Changes in Actuarial Assumptions from the Previous Valuation

Assumption Change	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
Discount Rate Assumption	\$ 376,652,534	\$ 5,978,103
Other Economic Assumptions	(40,391,580)	4,505,228
Non-Economic Assumptions	(42,587,750)	(1,460,995)
Total	\$ 293,673,204	\$ 9,022,336

The discount rate assumption was updated according to prescribed guidance. The Effective Interest Rate (EIR) for all plans decreased, causing a loss.

The other economic assumptions changed for this valuation were the cost-of-living adjustment (COLA) for annuitants and the salary increase assumption for active plan members. Due to the plans' composition of primarily inactive plan members, the COLA assumption is the primary driver in the calculation of liabilities due to other economic assumptions. A detailed description of the changes since prior year is available in Appendix A: Actuarial Assumptions and Methods.

For the Police Officers and Firefighters', and Teachers' Plans, and the Judges' Plan, the updated mortality projection scale to MP2019 was the only impact for non-economic assumptions. A complete description of the actuarial assumptions and rationale can be found in Appendix A: Actuarial Assumptions and Methods and Appendix B: Rationale.

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Highlights of the Actuarial Valuation

Government Contributions

This report includes a calculation of the Government Contribution required to be made before the end of FY 2021 (excluding the reimbursement for expenses). The table below contains Government Contribution (excluding expenses) for FY 2020 and FY 2021.

Contribution Year	Government Contribution (excluding expenses)			
	D.C. Federal Pension Fund		Judiciary Retirement Fund	
September 30, 2020	\$	520,300,000	\$	15,500,000
September 30, 2021	\$	558,700,000	\$	18,300,000

The increase in the Government Contribution amounts from FY2020 to FY2021 is explained in the table below.

	Police Officers and Firefighters', and Teachers' Plans		Judges' Plan	
Full amortization of the 10/1/2000 Assumption change (gain)/loss	\$	22,200,000	\$	600,000
Full amortization of the 10/1/2010 Experience (gain)/loss	\$	3,300,000	\$	(100,000)
New amortization base for the 10/1/2020 Experience (gain)/loss		900,000		700,000
New amortization base for the 10/1/2020 Assumption change (gain)/loss		12,000,000		600,000
Normal Cost change		-		1,100,000
Employee Contribution change		-		(100,000)
Total	\$	38,400,000	\$	2,800,000

Executive Summary

Actuarial Valuation Opinion

This report presents the results of the actuarial valuation of the Program as of October 1, 2020. In our opinion, this report is complete and accurate and represents fairly the actuarial position of the Program for the purposes stated herein.

This actuarial valuation has been prepared based upon plan member data and plan provisions provided by the Department of the Treasury as of May 1, 2020 (plan data was projected to September 30, 2020 by adjusting for expected mortality for inactive plan members) and the estimated asset information projected by the Department of the Treasury to September 30, 2020 (provided on July 29, 2019).

We have reviewed the data and other information provided for reasonableness, but have not independently audited the data or other information provided. We have no reason to believe the data and other information provided are not complete and accurate, and know of no further information that is essential to the preparation of the actuarial valuation.

In our opinion, all costs, liabilities, rates of interest, and other factors underlying these actuarial computations have been determined on the basis of actuarial assumptions and methods. Each are reasonable (or consistent with authoritative guidance) for the purposes described herein taking into account the experience of the plans and future expectations. Rates of interest used in this valuation are provided by ODCP and are consistent with authoritative guidance. All other assumptions are reasonable for the purposes described herein.

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;
- Increases or decreases expected as part of the natural operations of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on each plan's funded status); and
- Changes in plan provisions or applicable law.

Our scope did not include analyzing the potential range of such future measurements; therefore, this analysis was not performed.

The undersigned with actuarial credentials collectively meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

This report was prepared solely for the benefit and internal use of the Department of the Treasury. This report is not intended for the benefit of any other party and may not be relied upon by any third party for any purpose, and Deloitte Consulting LLP accepts no responsibility or liability with respect to any party other than the Department of the Treasury.

To the best of our knowledge, no employee of the Deloitte U.S. Firms is an officer or director of the employer. In addition, we are not aware of any relationship between the Deloitte U.S. Firms and the employer that may impair or appear to impair the objectivity of the work detailed in this report.

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October 27, 2020

Executive Summary

Summary of Results

Police Officers and Firefighters', and Teachers' Plans

	Valuation Date	
	October 1, 2020	October 1, 2019
Plan Member Counts		
Actives	1,024	1,307
Terminated Vested	244	204
Annuitants	13,345	13,440
Total	14,613	14,951
Contributions		
Federal Required Contribution	\$ 558,700,000	\$ 520,300,000
Present Value of Benefits (PVB)		
Active Plan Members		
Retirement Decrement	\$ 358,866,503	\$ 467,942,026
Termination Decrement	-	-
Disability Decrement	1,168,243	1,666,607
Death Decrement	494,825	678,418
Total	\$ 360,529,571	\$ 470,287,051
Inactive Plan Members		
Normal Retirees ¹	\$ 6,195,482,251	\$ 6,224,919,047
Terminated Vested	37,732,770	34,993,537
Disabled Retirees ¹	690,435,989	717,875,525
Beneficiaries	766,366,380	740,581,913
Total	\$ 7,690,017,390	\$ 7,718,370,022
Total PVB (inactive and active)	\$ 8,050,546,961	\$ 8,188,657,073
Unfunded Actuarial Accrued Liability (AAL)		
Active AAL	\$ 360,529,571	\$ 470,287,051
Inactive AAL	7,690,017,390	7,718,370,022
Total AAL	\$ 8,050,546,961	\$ 8,188,657,073
Asset Value as of Valuation Date	\$ (3,870,858,529)	\$ (3,822,592,727)
Unfunded AAL	\$ 4,179,688,432	\$ 4,366,064,346

¹Throughout this report, former spouses receiving benefits under a qualified domestic relations order are not included in counts. Their benefit amounts are included with their associated retired plan member.

Executive Summary

Summary of Results

Judges' Plan

	Valuation Date	
	October 1, 2020	October 1, 2019
Plan Member Counts		
Actives	61	59
Terminated Vested	-	-
Annuitants	101	96
Total	162	155
Contributions		
Government Contribution (excluding expenses)	\$ 18,300,000	\$ 15,500,000
Present Value of Benefits (PVB)		
Active Plan Members		
Retirement Decrement	\$ 136,533,697	\$ 122,282,090
Termination Decrement	-	-
Disability Decrement	-	-
Death Decrement	733,431	561,503
Total	\$ 137,267,128	\$ 122,843,593
Inactive Plan Members		
Normal Retirees ¹	\$ 173,986,119	\$ 162,493,045
Terminated Vested	-	-
Disabled Retirees ¹	2,052,526	2,119,211
Beneficiaries	9,566,351	8,959,664
Total	\$ 185,604,996	\$ 173,571,920
Total PVB (inactive and active)	\$ 322,872,124	\$ 296,415,513
Unfunded Actuarial Accrued Liability (AAL)		
Active AAL	\$ 82,271,955	\$ 81,844,013
Inactive AAL	185,604,996	173,571,920
Total AAL	\$ 267,876,951	\$ 255,415,933
Asset Value as of Valuation Date	\$ (182,824,303)	\$ (177,213,402)
Unfunded AAL	\$ 85,052,648	\$ 78,202,531
Total Normal Cost	\$ 6,400,000	\$ 5,300,000
Employee Contributions	(600,000)	(500,000)
Net Employer Normal Cost	\$ 5,800,000	\$ 4,800,000

¹Throughout this report, former spouses receiving benefits under a qualified domestic relations order are not included in counts. Their benefit amounts are included with their associated retired plan member.

Assessment of Risk

Risk can be defined as the potential of actual future measurements deviating from expected future measurements resulting from actual future experience deviating from actuarially assumed experience. This section is intended to comply with the requirements of Actuarial Standard of Practice (ASOP) No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions.

Measuring pension obligations and calculating actuarially determined contributions require the use of assumptions regarding future economic and demographic experience. However, an intended user of such measurements should understand the effects of future experience differing from the assumptions used in the actuarial valuation and the potential volatility of future measurements resulting from such differences.

Methods used in the assessment of risk may include, but are not limited to scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of an actuarial present value using a discount rate derived from minimal-risk investments to a corresponding actuarial present value from the actuarial valuation.

A more detailed assessment than what is presented below may be beneficial to understand the risks identified. The factors that are considered in making this judgement include risk assessment findings, length of time and changes in plan circumstances since the last assessment, absolute or relative size of the plan, maturity of the plan, funded status, asset allocation, method for determining contributions, or contribution risk (to the extent known by the actuary).

Following is a discussion of the risks that, in our professional judgement, may be anticipated to significantly affect the Program's future financial condition.

For purposes of this section, pension obligations refer to Actuarially Accrued Liability and costs refer to Total Required Government Contribution.

Significant Risks

Below, we have listed a number of anticipated risks that may affect pension plans in general. We have identified potential risks that pertain to ODCP specifically and listed them in order of significance. We have defined "significant risks" as factors that could impact costs or liabilities. Additionally, we have identified any risks that, although they may be relevant to pension plans in general, are not applicable for ODCP.

Cost-of-Living-Adjustment (COLA) Risk

The potential that annual COLA applied to participants' benefits will deviate from expected increases.

The Police Officers and Firefighters', and Teachers' Plans and the Judges' Plan predominantly consist of participants already receiving annuities subject to a cost of living adjustment. The risk of actual COLA deviating from expected increases, in conjunction with the Program's maturity, is a significant risk for ODCP.

Longevity Risk

The potential that mortality experience will be different than expected.

Annuity based plans such as the Police Officers and Firefighters', and Teachers' Plans and the Judges' Plan are subject to longevity risk. Failing to project longevity improvements or to under-project them understates the value of the plan over time. This is particularly acute for plans also subject to a COLA.

Investment Risk

The potential that investment returns will be different than expected.

To the extent that ODCP's investment policy results in more or less cash than expected, there may be a decrease or increase, respectively, in future cost requirements. Due to the makeup of ODCP's portfolio of assets consisting mainly of government treasury bonds, if yields behave differently than expected then the asset returns under the Program could be different than expected causing contribution requirements to increase or decrease.

Interest Rate Risk

The potential that interest rates will be different than expected. As interest rates decrease, the present value of future benefit obligations increases. The magnitude of this risk depends on the Plan's effective duration, maturity, population composition, and benefit structure.

All ODCP plans use the full yield curve derived at the time of the valuation by averaging the quarterly treasury rate over 40 quarters (as published by the Department of the Treasury). A decrease in the yield curve could cause the cost of the plans to increase, while also resulting in an increase in the costs of the bonds to be purchased, thus lowering their return.

Assessment of Risk

Asset/Liability Mismatch Risk

The potential that changes in asset values are not matched by changes in the value of liabilities.

The inability to match asset and liability cash flows due to the limited nature of the available durations of Treasury Bonds could introduce risk to the Funds, depending on the deployment of the Program's Investment Policy.

Data Quality Risk

The potential that the data quality interferes with the ability to develop an accurate estimate of liabilities.

ODCP has implemented many data control processes and procedures to ensure the integrity and quality of their data. Even so, unexpected data breaches or unexpected data changes could have a negative financial impact on the Program.

Legislative and Regulatory Risk

The potential that future legislative or regulatory change could impact the calculation of the obligations and costs of the Program.

Unexpected regulatory rules or new laws could result in reassessing the valuation methods described in this report and could have an impact on the Program. Costs caused by any unexpected regulatory or law change could also pose a potential risk to the Program.

Liquidity Risk

The potential inability to cover short term costs resulting in a quicker than anticipated liquidation of assets.

An unexpected increase in short term benefit obligations could result in a reassessment of ODCP's current investment policy in order to decrease the impact caused by liquidity risk. However, ODCP's current investment policy serves to minimize this occurrence, thereby making this risk less prevalent.

The remaining risks noted below have the potential to impact pension plans in general, however, we concluded that they are not pertinent to the ODCP plans at this time.

Salary Scale Risk

The potential that actual future salary increases deviate from expected future salary increases.

Because the Program consists of predominately inactive plan members, the risks associated with an unexpected increase in active plan members' salaries will have minimal impact on the Program.

Other Demographic Risk

The potential that other demographic experiences will be different than expected.

An unexpected change in assumptions including retirement rates, disability incidence rates, or elected forms of benefit could result in an increase to costs. However, because the Program consists of predominantly inactive plan members, this risk is expected to have minimal impact.

Workforce Risk

The potential that the size and characteristics of the Program's workforce will be different than expected.

For the Police Officers and Firefighters', and Teachers' Plans, active plan members were hired prior to July 1, 1997. Given that these plan members are either retirement eligible or nearly retirement eligible, there is minimal risk that the workforce size or characteristics will deviate from expectation in a way that would introduce significant risk to the plan. While the Judges' Plan is still open and accruing, the workforce is relatively stable in nature, and therefore provides minimal risk overall to the Program.

Contribution Risk

The potential that actual future required contributions will deviate from expected future contributions.

The Program is statutorily funded, thereby eliminating risk associated with future required contributions deviating from expected contributions.

Assessment of Risk

Plan Maturity Measures

As a plan shifts from a young, active population accruing benefits to older retirees, pension obligations and costs may increase until the plan approaches fully inactive, after which time the liability will start to decrease. Both the Judges' Plan and the Police Officers and Firefighters', and Teachers' Plans have significantly more inactive liability than active liability and thus, are considered to have mature to very mature populations.

The tables below detail several plan maturity measures that are significant in understanding the risks associated with the Program. As a plan becomes more mature, obligation grows relative to plan assets. Once the plan is mature, the obligation will stay stable or decrease relative to the plan assets. Depending on the value of the measure, different approaches to asset and liability management may be appropriate. It is important to consider these measures in the context of the plans' provisions and features.

The following table shows a comparison of Active Participant Liability to Inactive Participant Liability for the current and prior years.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
9/30/2020	4.69%	44.33%
9/30/2018	6.75%	48.91%
9/30/2016	9.63%	55.65%
9/30/2014	12.71%	50.49%
9/30/2012	12.98%	45.81%

The following table shows a comparison of Active Participant Headcount to Inactive Participant Headcount for the current and prior years.¹

Ratio of Active to Inactive Participant Headcount						
Year	Police	Fire	Teacher	<u>Subtotal</u>	Judges	<u>Total</u>
5/1/2020	6.96%	15.39%	5.43%	7.54%	60.40%	7.93%
5/1/2019	9.84%	18.55%	6.23%	9.58%	61.46%	9.94%
5/1/2018	12.22%	21.03%	7.01%	11.26%	64.89%	11.62%
5/1/2017	15.17%	23.60%	8.24%	13.38%	69.57%	13.75%
5/1/2016	19.12%	26.27%	9.91%	16.16%	73.63%	16.54%
5/31/2015	24.66%	28.76%	11.71%	19.56%	76.14%	19.92%
5/31/2014	28.57%	30.09%	13.19%	21.95%	76.40%	22.31%
5/31/2013	31.03%	32.41%	15.68%	24.38%	79.78%	24.75%
6/30/2012	32.65%	34.97%	18.66%	26.76%	74.73%	27.08%
6/30/2011	35.08%	38.20%	21.76%	29.57%	72.73%	29.86%

¹For years prior to 5/1/2017, Vested Terminated Participants were not included in the inactive participant headcount.

Assessment of Risk

Additional Historical Information

The tables and charts below identify and disclose reasonably available relative historical values of the Program's actuarial measurements that, in the actuary's professional judgement, are significant to understanding the risks of the Program.

Benefit Breakdown by Annuitant Type

The following table shows a summary of the number of plan participants receiving a full or partial federal benefit¹ for the current and prior years (Retirees, Beneficiaries, Disableds).

Year	Police	Firefighters	Teachers	Subtotal	Judges	Total
5/1/2020	6,066	1,925	5,354	13,345	101	13,446
5/1/2019	5,992	1,927	5,521	13,440	96	13,536
5/1/2018	5,956	1,928	5,656	13,540	94	13,634
5/1/2017	5,890	1,918	5,734	13,542	92	13,634
5/1/2016	5,806	1,911	5,842	13,559	91	13,650
5/31/2015	5,605	1,909	5,884	13,398	88	13,486
5/31/2014	5,527	1,931	5,965	13,423	89	13,512
5/31/2013	5,501	1,922	5,975	13,398	89	13,487
6/30/2012	5,489	1,916	5,937	13,342	91	13,433
6/30/2011	5,470	1,898	5,952	13,320	88	13,408

¹Includes annuitants with a deferred federal benefit.

The following table shows a summary of the number of plan participants receiving a full federal benefit for the current and prior years (Retirees, Beneficiaries, Disableds).

Year	Police	Firefighters	Teachers	Subtotal	Judges	Total
5/1/2020	3,505	1,104	1,756	6,365	101	6,466
5/1/2019	3,591	1,161	1,913	6,665	96	6,761
5/1/2018	3,683	1,206	2,071	6,960	94	7,054
5/1/2017	3,781	1,246	2,197	7,224	92	7,316
5/1/2016	3,881	1,289	2,343	7,513	91	7,604
5/31/2015	3,952	1,323	2,457	7,732	88	7,820
5/31/2014	4,047	1,372	2,626	8,045	89	8,134
5/31/2013	4,134	1,403	2,748	8,285	89	8,374
6/30/2012	4,206	1,445	2,844	8,495	91	8,586
6/30/2011	4,274	1,472	2,990	8,736	88	8,824

The following table shows a summary of the number of plan participants receiving a federal benefit and a District split benefit² for the current and prior years (Retirees, Beneficiaries, Disableds).

Year	Police	Firefighters	Teachers	Subtotal	Judges ³	Total
5/1/2020	2,561	821	3,598	6,980	N/A	6,980
5/1/2018	2,273	722	3,585	6,580	N/A	6,580
5/1/2016	1,925	622	3,499	6,046	N/A	6,046
5/31/2014	1,480	559	3,339	5,378	N/A	5,378
6/30/2012	1,283	471	3,093	4,847	N/A	4,847

²Includes annuitants with a deferred federal benefit.

³These annuitants receive a 100% federal benefit.

Assessment of Risk

Assets

The following table shows the Market Value of Assets¹ (\$ millions) in each plan for the current and prior years.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	<u>Total</u>
9/30/2020	\$3,870.9	\$182.8	\$4,053.7
9/30/2019	\$3,822.6	\$177.2	\$3,999.8
9/30/2018	\$3,818.5	\$170.1	\$3,988.6
9/30/2017	\$3,851.9	\$162.7	\$4,014.6
9/30/2016	\$3,902.3	\$156.1	\$4,058.4
9/30/2015	\$3,959.3	\$150.4	\$4,109.7
9/30/2014	\$3,975.9	\$146.5	\$4,122.4
9/30/2013	\$4,001.8	\$143.9	\$4,145.7
9/30/2012	\$3,959.4	\$140.9	\$4,100.3
9/30/2011	\$3,918.6	\$137.5	\$4,056.1

¹Securities are valued at amortized cost, not market value.

Liabilities

The following table shows the Accrued Liability (\$ millions) in each plan for the current and prior years.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	<u>Total</u>
9/30/2020	\$8,050.5	\$267.9	\$8,318.4
9/30/2019	\$8,188.7	\$255.4	\$8,444.1
9/30/2018	\$8,163.0	\$255.6	\$8,418.6
9/30/2017	\$8,479.5	\$248.1	\$8,727.6
9/30/2016	\$8,650.3	\$231.5	\$8,881.8
9/30/2015	\$8,687.6	\$219.4	\$8,907.0
9/30/2014	\$9,046.8	\$218.4	\$9,265.2
9/30/2013	\$9,137.5	\$190.9	\$9,328.4
9/30/2012	\$9,077.8	\$186.3	\$9,264.1
9/30/2011	Data not available	Data not available	Data not available

The following table shows the Unfunded Liability (\$ millions) in each plan for the current and prior years.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	<u>Total</u>
9/30/2020	\$4,179.7	\$85.1	\$4,264.8
9/30/2019	\$4,366.1	\$78.2	\$4,444.3
9/30/2018	\$4,344.5	\$85.5	\$4,430.0
9/30/2017	\$4,627.6	\$85.4	\$4,713.0
9/30/2016	\$4,748.1	\$75.4	\$4,823.5
9/30/2015	\$4,728.4	\$69.0	\$4,797.4
9/30/2014	\$5,070.9	\$71.9	\$5,142.8
9/30/2013	\$5,135.6	\$46.9	\$5,182.5
9/30/2012	\$5,955.9	\$56.4	\$6,012.3
9/30/2011	Data not available	Data not available	Data not available

Assessment of Risk

Funded Ratio

The following table shows the ratio of the Market Value of Assets to the Actuarial Accrued Liability.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	<u>Total</u>
9/30/2020	48.1%	68.2%	48.7%
9/30/2018	46.8%	66.5%	47.4%
9/30/2016	45.1%	67.4%	45.7%
9/30/2014	43.9%	67.1%	44.5%
9/30/2012	43.6%	75.6%	44.3%

Contributions

The following table shows the amount of the total required government contributions (\$ millions) to each fund for the current and prior years¹.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	<u>Total</u>
FY 2021	\$558.7	\$18.3	\$577.0
FY 2019	\$477.6	\$16.1	\$493.7
FY 2017	\$452.2	\$15.6	\$467.8
FY 2015	\$487.5	\$14.2	\$501.7
FY 2013	\$495.9	\$ 9.4	\$505.3

¹Payments for FY2018 and after are before administrative expenses for all plans.

Distribution of Benefit Payments

The following table shows the amount of federal benefit payments and refunds paid (\$ millions) to each plan for the current and prior years.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	<u>Total</u>
FY 2020	\$538.9	\$14.2	\$553.1
FY 2019	\$543.3	\$13.3	\$556.6
FY 2018	\$541.1	\$12.5	\$553.6
FY 2017	\$541.4	\$12.2	\$553.6
FY 2016	\$542.4	\$11.8	\$554.2
FY 2015	\$541.7	\$14.1	\$555.8
FY 2014	\$542.9	\$11.9	\$554.8
FY 2013	\$537.2	\$10.2	\$547.4
FY 2012	\$532.9	\$10.0	\$542.9
FY 2011	\$527.3	\$ 9.1	\$536.4

Assessment of Risk

Investment Performance

The following table shows the history of the approximate rate of return¹ on the Market Value of Assets.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
FY 2020	1.8%	2.1%
FY 2018	1.5%	2.3%
FY 2016	1.0%	2.4%
FY 2014	1.3%	2.1%
FY 2012	2.9%	3.3%

¹Rates from FY2013, FY2014, and FY2015 are net of expenses for all plans.

The following table shows the total amount of interest earned in each plan from investments for the current and prior years (\$ millions).

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	<u>Total</u>
FY 2020	\$ 66.6	\$3.7	\$ 70.2
FY 2019	\$ 69.1	\$3.8	\$ 72.9
FY 2018	\$ 57.5	\$3.6	\$ 61.1
FY 2017	\$ 51.0	\$3.5	\$ 54.5
FY 2016	\$ 51.1	\$3.6	\$ 54.7
FY 2015	\$ 54.9	\$3.7	\$ 58.6
FY 2014	\$ 61.9	\$3.8	\$ 65.7
FY 2013	\$ 75.0	\$3.8	\$ 78.8
FY 2012	\$ 104.2	\$4.4	\$ 108.6
FY 2011	\$ 115.3	\$4.3	\$ 119.6

The following table shows the rates used for the return on market value of assets ("Asset Return") and the percentage of the amortized cost value of investment ("Liability Rates").

Year	Police Officers and Firefighters', and Teachers' Plans		Judges' Plan	
	Liability Rates	Asset Return	Liability Rates	Asset Return
FY 2020	0.8% - 3.6%	1.8%	0.8% - 3.6%	2.1%
FY 2019	0.7% - 3.8%	1.8%	0.7% - 3.8%	2.2%
FY 2018	0.6% - 3.9%	1.5%	0.6% - 3.9%	2.3%
FY 2017	0.7% - 4.0%	1.4%	0.7% - 4.0%	2.3%
FY 2016	1.1% - 4.2%	1.0%	1.1% - 4.2%	2.4%
FY 2015	1.5% - 4.3%	0.8%	1.5% - 4.3%	2.2%
FY 2014	1.7% - 4.4%	1.3%	1.7% - 4.4%	2.1%
FY 2013	1.9% - 4.6%	1.3%	1.9% - 4.6%	2.2%
FY 2012	2.0% - 4.7%	2.9%	2.0% - 4.7%	3.3%
FY 2011	2.3% - 4.9%	3.2%	2.3% - 4.9%	3.3%

Assessment of Risk

(Gains)/Losses

The following table shows the Historical (Gains)/Losses in each plan for the current and prior years (in millions). The plans will experience deviations from expected each year. The amount of the deviation is amortized over future years and included in the contribution calculation.

Police Officers and Firefighters', and Teachers' Plans					Judges Plan			
Year	Actuarial (Gain)/Loss - Investment	Actuarial (Gain)/Loss - Experience	Actuarial (Gain)/Loss - Method/ Assumptions	Actuarial (Gain)/Loss - Investment	Actuarial (Gain)/Loss - Experience	Actuarial (Gain)/Loss - Method/ Assumptions	Actuarial (Gain)/Loss - Method/ Assumptions	Actuarial (Gain)/Loss - Method/ Assumptions
9/30/2020	\$ (40.7)	\$ 48.5	\$ 293.7	\$ 1.7	\$ 4.6	\$ 9.0		
9/30/2019	\$ (48.9)	\$ 30.3	\$ 492.0	\$ 1.5	\$ 4.3	\$ (4.8)		
9/30/2018	\$ (30.6)	\$ 52.2	\$ 114.0	\$ 1.6	\$ 4.1	\$ 1.7		
9/30/2017	\$ (12.2)	\$ 25.7	\$ 251.0	\$ 1.8	\$ 1.6	\$ 13.1		
9/30/2016	\$ 4.3	\$ (63.0)	\$ 484.5	\$ 2.0	\$ (2.2)	\$ 11.7		
9/30/2015	\$ 9.8	\$ (69.8)	\$ 100.1	\$ 1.4	\$ (0.3)	\$ 1.1		
9/30/2014	\$ 7.0	\$ (66.0)	\$ 354.3	\$ 1.9	\$ 21.3	\$ 4.8		
9/30/2013	\$ (20.1)	\$ (63.9)	\$ 256.4	\$ (1.3)	\$ (1.4)	\$ 7.6		
9/30/2012	\$ (21.1)	\$ 92.8	\$ 591.7	\$ (1.3)	\$ 3.7	\$ 10.4		
9/30/2011	Data Not Available							

Inflation Assumptions

The following table shows the annual long term actuarial general pay and inflation assumptions in each plan for the current and prior years. The inflation assumption is used to project future pay for the active population.

Year	Cost-of-Living	Police/Fire Pay	Teachers Pay	Judges Pay
FY 2020	1.5% - 1.8%	2.15% - 2.20%	2.3%	0.9%
FY 2019	1.4% - 1.8%	1.95% - 2.00%	2.3%	0.8%
FY 2018	1.6% - 1.7%	1.8% - 2.2%	2.4%	1.0%
FY 2017	1.7% - 1.9%	1.8% - 2.2%	3.0%	1.1%
FY 2016	1.9% - 2.0%	2.0% - 2.2%	3.0%	1.2%
FY 2015	2.1% - 2.4%	2.2%	3.0%	1.7%
FY 2014	2.4% - 2.5%	2.2% - 2.3%	3.0%	1.9%
FY 2013	2.4% - 2.6%	3.1% - 3.4%	3.9%	2.3%
FY 2012	2.5% - 2.6%	4.3%	4.3%	1.5%
FY 2011	2.4%	4.3%	4.3%	1.8%

Plan Cost

Amortization Schedule and Required Government Contribution

Police Officers and Firefighters', and Teachers' Plans

Amortization Base	Remaining Number of Years	Annual Amortization Installment	Outstanding Balance as of October 1, 2020
Initial Unfunded Accrued Liability	7	\$ 348,600,000	2,293,445,114
Assumption Change 10/1/2001	1	40,100,000	39,773,854
Plan Change 10/1/2001	1	16,000,000	15,869,867
Assumption Change 10/1/2004	4	13,700,000	53,223,472
Assumption Change 10/1/2005	5	(6,300,000)	(30,291,481)
Assumption Change 10/1/2006	6	39,800,000	227,125,139
Assumption Change 10/1/2007	7	3,600,000	23,684,459
Assumption Change 10/1/2008	8	3,300,000	24,500,904
Assumption Change 10/1/2009	9	40,700,000	335,491,642
Assumption Change 10/1/2010	10	10,500,000	94,859,243
(Gain)/Loss 10/1/2011	1	(16,200,000)	(16,068,240)
Assumption Change 10/1/2011	11	6,900,000	67,606,173
(Gain)/Loss 10/1/2012	2	500,000	986,470
Assumption Change 10/1/2012	12	32,500,000	342,403,278
(Gain)/Loss 10/1/2013	3	(9,900,000)	(29,092,588)
Assumption Change 10/1/2013	13	18,700,000	210,340,359
Funding Method Change 10/1/2013	13	(34,800,000)	(391,435,534)
(Gain)/Loss 10/1/2014	4	(6,900,000)	(26,805,982)
Assumption Change 10/1/2014	14	13,400,000	159,928,288
(Gain)/Loss 10/1/2015	5	(7,000,000)	(33,657,201)
Assumption Change 10/1/2015	15	(4,000,000)	(50,390,916)
(Gain)/Loss 10/1/2016	6	(10,000,000)	(57,066,618)
Assumption Change 10/1/2016	16	20,600,000	272,694,262
Method Change 10/1/2016	16	500,000	6,618,793
(Gain)/Loss 10/1/2017	7	1,500,000	9,868,525
Assumption Change 10/1/2017	17	5,000,000	69,273,557
(Gain)/Loss 10/1/2018	8	2,400,000	17,818,839
Assumption Change 10/1/2018	18	(1,600,000)	(23,118,941)
(Gain)/Loss 10/1/2019	9	(2,100,000)	(17,310,380)
Assumption Change 10/1/2019	19	26,300,000	395,099,362
(Gain)/Loss 10/1/2020	10	900,000	7,858,584
Assumption Change 10/1/2020 ¹	20	12,000,000	186,456,129
Total Amortization		\$ 558,700,000	\$ 4,179,688,432
Total Normal Cost with Interest		\$ -	
Employee Contributions		-	
Net Employer Normal Cost		\$ -	
Total Required Government Contribution as of September 30, 2021²		\$ 558,700,000	

¹ Includes assumption change impact, \$293,673,204, as well as effect of discount rate change on prior amortization balances, (\$107,217,075).

² Before administrative expenses.

Plan Cost

Amortization Schedule and Required Government Contribution

Judges' Plan

Amortization Base	Remaining Number of Years	Annual Amortization Installment	Outstanding Balance as of October 1, 2020
Initial Unfunded Accrued Liability	7	\$ 2,100,000	\$ 13,128,087
Assumption Change 10/1/2004	4	200,000	745,022
Assumption Change 10/1/2008	8	200,000	1,409,284
Assumption Changes 10/1/2010	10	1,500,000	12,854,275
Assumption Changes 10/1/2011	11	100,000	929,892
Assumption Changes 10/1/2012	12	600,000	6,004,617
Assumption Changes 10/1/2013	13	400,000	4,278,571
(Gain)/Loss 10/1/2014	4	2,900,000	10,802,825
(Gain)/Loss 10/1/2015	5	100,000	459,150
Method Change 10/1/2016	16	500,000	6,323,982
Assumption Change 10/1/2017	17	800,000	10,609,632
Assumption Change 10/1/2018	18	100,000	1,385,875
Assumption Change 10/1/2019	19	(400,000)	(5,775,435)
Assumption Change 10/1/2020 ¹	20	600,000	8,283,578
Total Amortization		\$ 12,500,000	\$ 85,052,648
Total Normal Cost with Interest		\$ 6,400,000	
Employee Contributions		(600,000)	
Net Employer Normal Cost		\$ 5,800,000	
Total Required Government Contribution as of September 30, 2021²		\$ 18,300,000	

¹ Includes assumption change impact, -(\$9,022,336), as well as effect of discount rate change on prior amortization balances, (\$738,758).

² Before administrative expenses.

Changes in Actuarial Accrued Liability

Reconciliation of Actuarial (Gain)/Loss

	Police Officers and Firefighters', and Teachers' Plans		Judges' Plan	
Assets				
As of October 1, 2019, before adjustments	\$	3,822,592,727	\$	177,213,402
As of October 1, 2019, after adjustments		3,822,605,456		177,172,633
Contributions:				
Employees	\$	-	\$	664,470
Employer		542,846,482		15,973,402
Total		542,846,482		16,637,872
Benefits Paid		(538,902,741)		(14,207,928)
Expenses Paid		(22,546,482)		(473,402)
Income (including adjustments)		66,868,543		3,654,359
Expected Income		26,209,824		5,310,395
Expected End of Year Value		3,830,199,810		184,480,339
October 1, 2020 (Projected) Value		3,870,858,529		182,824,303
Asset (Gain)/Loss	\$	(40,658,719)	\$	1,656,036
Liabilities				
October 1, 2019 AAL	\$	8,188,657,072	\$	255,415,933
Normal Cost:				
Employees		-		500,000
Employers		-		4,800,000
Total		-		5,300,000
Benefits Paid		(538,902,741)		(14,207,928)
Interest		58,602,123		7,755,133
Expected September 30, 2020 AAL		7,708,356,454		254,263,138
Actual September 30, 2020 AAL before assumption and method changes ¹		7,756,873,757		258,854,615
Liability (Gain)/Loss		48,517,303		4,591,477
Total Experience (Gain)/Loss	\$	7,858,584	\$	6,247,513

Summary of Changes in Assumptions and Methods

(Gains)/Losses	Police Officers and Firefighters', and Teachers' Plans		Judges' Plan	
Change in Discount Rate		376,652,534		5,978,103
Change in Other Economic Assumptions ²		(40,391,580)		4,505,228
Change in Non-Economic Assumptions ³		(42,587,750)		(1,460,995)
Total Impact	\$	293,673,204	\$	9,022,336
Actual End of Year AAL after assumption and method changes	\$	8,050,546,961	\$	267,876,951

¹ Liabilities as of October 1, 2020 for the Police Officers and Firefighters', and Teachers' Plans calculated for this purpose are based on 2020 spot rates implied by the 2019 spot rate yield curve. These spot rates used in gain/loss analysis were calculated by converting the 2019 spot rates to forward rates, removing the forward rate for FY 2020, and then converting the forward rates back to spot rates. See Appendix A: Actuarial Assumptions and Methods for an example of the rates.

² Projected salary increases and COLA.

³ Mortality projection scale.

Asset Information

Statement of Changes in Net Plan Assets

The following table is based on the unaudited statement of assets projected to September 30, 2020, as provided by the Department of the Treasury on August 7, 2020.

Values from the statement are unrounded and truncated to the dollar.

	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
Projected net assets available for benefits as of October 1, 2019	\$ 3,822,592,727	\$ 177,213,402
Adjusted from estimate to actual	<u>12,729</u>	<u>(40,769)</u>
Actual net assets available as of October 1, 2019	\$ 3,822,605,456	\$ 177,172,633
Additions		
Contributions:		
Government contributions (amortization payment)	\$ 542,846,482	\$ 15,973,402
Employee contributions	<u>-</u>	<u>664,470</u>
Total contributions	\$ 542,846,482	\$ 16,637,872
Investment income (including interest) ¹	66,564,986	3,679,822
Miscellaneous additions	<u>290,828</u>	<u>15,307</u>
Total additions	\$ 609,702,296	\$ 20,333,001
Deductions		
Benefit payments:		
Annuities - Federal only	\$ (538,857,117)	\$ (14,207,928)
Refunds of contributions	<u>(45,624)</u>	<u>-</u>
Total benefit payments	\$ (538,902,741)	\$ (14,207,928)
Expenses and fees:		
Administrative expenses	\$ (24,674,129)	\$ (473,402)
Other expenses	<u>2,127,647</u>	<u>-</u>
Total expenses and fees	\$ (22,546,482)	\$ (473,402)
Total deductions	\$ (561,449,223)	\$ (14,681,330)
Net additions/(deductions)	\$ 48,253,073	\$ 5,651,671
Net assets available for benefits as of October 1, 2020	\$ 3,870,858,529	\$ 182,824,303

¹ The approximate rate of return on the Market Value of Assets is 1.75% for the Police Officers and Firefighters', and Teacher's Plans, and 2.05% for the Judges' Plan.

Benefit Payments and Funding Projections

Benefit Payment Projections

Police Officers and Firefighters', and Teachers' Plans (closed group)

Fiscal Year Ending In	Expected Net Benefit Payments	Fiscal Year Ending In	Expected Net Benefit Payments
2021	\$ 540,563,200	2059	\$ 40,943,626
2022	535,576,235	2060	35,726,370
2023	529,010,812	2061	30,959,570
2024	520,798,521	2062	26,626,935
2025	511,366,265	2063	22,714,488
2026	500,611,785	2064	19,208,633
2027	488,567,718	2065	16,095,052
2028	475,524,378	2066	13,357,094
2029	461,571,656	2067	10,975,416
2030	446,732,505	2068	8,928,233
2031	431,065,199	2069	7,190,939
2032	414,712,852	2070	5,736,285
2033	397,671,124	2071	4,535,147
2034	380,050,160	2072	3,557,230
2035	361,949,808	2073	2,772,188
2036	343,477,083	2074	2,150,567
2037	324,741,915	2075	1,664,587
2038	305,872,743	2076	1,288,854
2039	286,999,104	2077	1,000,969
2040	268,257,397	2078	781,746
2041	249,785,545	2079	615,168
2042	231,719,481	2080	488,304
2043	214,186,204	2081	391,036
2044	197,299,035	2082	315,632
2045	181,155,459	2083	256,337
2046	165,832,497	2084	208,967
2047	151,384,245	2085	170,559
2048	137,840,292	2086	139,031
2049	125,206,851	2087	112,920
2050	113,469,739	2088	91,215
2051	102,598,132	2089	73,151
2052	92,549,138	2090	58,154
2053	83,271,848	2091	45,768
2054	74,711,804	2092	35,615
2055	66,815,387	2093	27,377
2056	59,532,257	2094	20,771
2057	52,817,419	2095	15,530
2058	46,632,000		

Benefit Payments and Funding Projections

Benefit Payment Projections

Police Officers (closed group)

Fiscal Year Ending In	Expected Net Benefit Payments	Fiscal Year Ending In	Expected Net Benefit Payments
2021	\$ 257,059,807	2059	\$ 27,949,764
2022	256,854,305	2060	24,499,337
2023	255,943,307	2061	21,305,161
2024	254,158,183	2062	18,368,987
2025	251,708,488	2063	15,692,739
2026	248,543,659	2064	13,277,001
2027	244,668,307	2065	11,120,308
2028	240,236,877	2066	9,217,889
2029	235,272,296	2067	7,561,433
2030	229,781,871	2068	6,139,069
2031	223,766,021	2069	4,935,338
2032	217,261,622	2070	3,931,659
2033	210,317,952	2071	3,107,295
2034	202,942,121	2072	2,440,132
2035	195,170,407	2073	1,907,781
2036	187,049,071	2074	1,488,545
2037	178,628,722	2075	1,162,150
2038	169,967,164	2076	910,312
2039	161,128,555	2077	717,159
2040	152,183,161	2078	569,363
2041	143,205,321	2079	456,035
2042	134,271,159	2080	368,559
2043	125,454,672	2081	300,349
2044	116,824,980	2082	246,446
2045	108,445,353	2083	203,199
2046	100,369,272	2084	167,995
2047	92,638,525	2085	138,969
2048	85,281,965	2086	114,787
2049	78,315,547	2087	94,494
2050	71,743,360	2088	77,410
2051	65,559,224	2089	62,995
2052	59,749,529	2090	50,848
2053	54,295,541	2091	40,650
2054	49,175,928	2092	32,134
2055	44,369,578	2093	25,085
2056	39,857,326	2094	19,316
2057	35,623,550	2095	14,642
2058	31,656,766		

Benefit Payments and Funding Projections

Benefit Payment Projections

Firefighters (closed group)

Fiscal Year Ending In	Expected Net Benefit Payments	Fiscal Year Ending In	Expected Net Benefit Payments
2021	\$ 94,126,637	2059	\$ 9,335,350
2022	93,691,428	2060	8,204,818
2023	92,905,414	2061	7,169,049
2024	91,667,893	2062	6,224,651
2025	90,159,784	2063	5,368,063
2026	88,339,194	2064	4,595,540
2027	86,266,046	2065	3,903,104
2028	83,993,404	2066	3,286,541
2029	81,561,039	2067	2,741,473
2030	78,978,034	2068	2,263,730
2031	76,274,259	2069	1,849,173
2032	73,465,231	2070	1,493,546
2033	70,569,310	2071	1,192,361
2034	67,607,222	2072	940,846
2035	64,597,339	2073	734,030
2036	61,559,540	2074	566,729
2037	58,513,240	2075	433,642
2038	55,476,909	2076	329,510
2039	52,467,853	2077	249,321
2040	49,501,536	2078	188,452
2041	46,591,219	2079	142,763
2042	43,747,747	2080	108,717
2043	40,979,347	2081	83,379
2044	38,292,212	2082	64,426
2045	35,690,953	2083	50,096
2046	33,178,877	2084	39,069
2047	30,758,447	2085	30,426
2048	28,431,262	2086	23,550
2049	26,198,400	2087	18,023
2050	24,060,977	2088	13,579
2051	22,020,444	2089	10,033
2052	20,078,367	2090	7,241
2053	18,236,324	2091	5,084
2054	16,495,791	2092	3,464
2055	14,857,985	2093	2,284
2056	13,323,571	2094	1,452
2057	11,892,472	2095	886
2058	10,563,703		

Benefit Payments and Funding Projections

Benefit Payment Projections

Teachers (closed group)

Fiscal Year Ending In	Expected Net Benefit Payments	Fiscal Year Ending In	Expected Net Benefit Payments
2021	\$ 189,376,756	2059	\$ 3,658,512
2022	185,030,503	2060	3,022,215
2023	180,162,091	2061	2,485,360
2024	174,972,445	2062	2,033,297
2025	169,497,992	2063	1,653,686
2026	163,728,932	2064	1,336,092
2027	157,633,365	2065	1,071,640
2028	151,294,097	2066	852,664
2029	144,738,322	2067	672,509
2030	137,972,601	2068	525,435
2031	131,024,919	2069	406,428
2032	123,985,999	2070	311,080
2033	116,783,862	2071	235,492
2034	109,500,817	2072	176,251
2035	102,182,061	2073	130,377
2036	94,868,473	2074	95,294
2037	87,599,953	2075	68,795
2038	80,428,669	2076	49,032
2039	73,402,696	2077	34,489
2040	66,572,699	2078	23,931
2041	59,989,005	2079	16,370
2042	53,700,574	2080	11,028
2043	47,752,185	2081	7,308
2044	42,181,843	2082	4,760
2045	37,019,153	2083	3,042
2046	32,284,348	2084	1,903
2047	27,987,273	2085	1,164
2048	24,127,065	2086	694
2049	20,692,904	2087	402
2050	17,665,402	2088	226
2051	15,018,464	2089	123
2052	12,721,242	2090	65
2053	10,739,982	2091	33
2054	9,040,085	2092	17
2055	7,587,823	2093	8
2056	6,351,360	2094	4
2057	5,301,397	2095	2
2058	4,411,532		

Benefit Payments and Funding Projections

Benefit Payment Projections

Judges' Plan (open group)

Fiscal Year Ending In	Expected Net Benefit Payments ¹
2021	\$ 15,305,911
2022	15,325,321
2023	15,760,125
2024	15,914,105
2025	15,825,866
2026	15,877,121
2027	15,826,098
2028	15,874,816
2029	15,864,682
2030	16,116,285
2031	16,136,779
2032	16,152,182
2033	15,965,852
2034	15,846,842
2035	15,721,659
2036	15,570,806
2037	15,658,772
2038	15,553,737
2039	15,452,310
2040	15,282,818
2041	15,379,918
2042	15,184,885
2043	15,105,852
2044	14,987,876
2045	14,884,881

¹ Expected Net Benefit Payments are net of retiree contributions paid to provide for survivor benefits.

Benefit Payments and Funding Projections

Benefit Payment Projections

Judges' Plan (closed group)

Fiscal Year Ending In	Expected Net Benefit Payments ¹	Fiscal Year Ending In	Expected Net Benefit Payments ¹
2021	\$ 15,305,911	2059	\$ 4,524,529
2022	15,325,236	2060	4,151,459
2023	15,759,864	2061	3,798,504
2024	15,913,570	2062	3,465,305
2025	15,824,943	2063	3,151,386
2026	15,875,710	2064	2,856,135
2027	15,824,393	2065	2,579,019
2028	15,871,855	2066	2,319,609
2029	15,860,245	2067	2,076,950
2030	16,109,692	2068	1,850,333
2031	16,127,449	2069	1,639,292
2032	16,108,745	2070	1,443,457
2033	15,879,799	2071	1,262,689
2034	15,697,458	2072	1,096,856
2035	15,454,791	2073	945,698
2036	15,168,772	2074	808,956
2037	14,830,936	2075	686,429
2038	14,486,924	2076	577,449
2039	14,030,489	2077	481,168
2040	13,555,309	2078	396,821
2041	13,368,630	2079	323,674
2042	12,834,333	2080	260,892
2043	12,394,229	2081	207,594
2044	11,885,715	2082	162,841
2045	11,372,371	2083	125,741
2046	10,800,670	2084	95,482
2047	10,284,697	2085	71,228
2048	9,717,727	2086	52,098
2049	9,160,250	2087	37,286
2050	8,724,521	2088	26,088
2051	8,238,264	2089	17,826
2052	7,706,452	2090	11,873
2053	7,192,512	2091	7,688
2054	6,697,409	2092	4,844
2055	6,221,971	2093	2,974
2056	5,766,783	2094	1,769
2057	5,332,122	2095	1,016
2058	4,918,026		

¹ Expected Net Benefit Payments are net of retiree contributions paid to provide for survivor benefits.

Benefit Payments and Funding Projections

District Benefit Payments

Police Officers and Firefighters', and Teachers' Plans

Fiscal Year Ending In	Benefits Paid by District (\$ millions)
1998-1999	\$ 2.3
2000	3.9
2001	4.6
2002	6.7
2003	10.9
2004	16.2
2005	21.7
2006	28.6
2007	38.4
2008	47.1
2009	58.1
2010	65.5
2011	73.3
2012	86.0
2013	99.8
2014	112.6
2015	126.4
2016	146.0
2017	163.0
2018	183.8
2019	201.1
2020	223.9

Benefit Payments and Funding Projections

15-Year Funding Projections - Closed Group

Police Officers and Firefighters', and Teachers' Plans

Fiscal Year Ending In	Expected Return on Assets	Beginning of Year Assets	Federal Contribution (with Expense Reimbursement)	Net Benefit Payments	Expenses	Investment Return	End of Year Assets
2021	0.82%	\$ 3,870,858,529	\$ 586,800,000	\$ (540,563,200)	\$ (28,100,000)	\$ 29,409,521	\$ 3,918,404,850
2022	1.10%	3,918,404,850	547,500,000	(535,576,235)	(28,700,000)	40,006,003	3,941,634,618
2023	1.59%	3,941,634,618	546,100,000	(529,010,812)	(27,800,000)	58,293,381	3,989,217,187
2024	2.05%	3,989,217,187	556,300,000	(520,798,521)	(28,100,000)	76,259,526	4,072,878,192
2025	2.49%	4,072,878,192	549,900,000	(511,366,265)	(28,500,000)	94,875,265	4,177,787,192
2026	2.76%	4,177,787,192	563,700,000	(500,611,785)	(29,000,000)	107,816,037	4,319,691,444
2027	3.00%	4,319,691,444	534,500,000	(488,567,718)	(29,600,000)	121,654,923	4,457,678,649
2028	3.18%	4,457,678,649	181,400,000	(475,524,378)	(30,200,000)	133,553,233	4,266,907,504
2029	3.30%	4,266,907,504	176,300,000	(461,571,656)	(30,800,000)	132,521,998	4,083,357,846
2030	3.46%	4,083,357,846	138,300,000	(446,732,505)	(31,400,000)	132,872,452	3,876,397,793
2031	3.59%	3,876,397,793	127,600,000	(431,065,199)	(32,100,000)	130,722,096	3,671,554,690
2032	3.57%	3,671,554,690	121,300,000	(414,712,852)	(32,700,000)	122,923,787	3,468,365,625
2033	3.48%	3,468,365,625	89,400,000	(397,671,124)	(33,300,000)	113,321,740	3,240,116,241
2034	3.77%	3,240,116,241	106,200,000	(380,050,160)	(34,000,000)	114,216,869	3,046,482,950
2035	3.62%	3,046,482,950	93,500,000	(361,949,808)	(34,700,000)	103,208,397	2,846,541,539

Benefit Payments and Funding Projections

15-Year Funding Projections - Open Group

Judges' Plan

Fiscal Year Ending In	Expected Return on Assets	Beginning of Year Assets	Employee Contributions	Federal Contribution (with Expense Reimbursement)	Net Benefit Payments	Expenses	Investment Return	End of Year Assets
2021	0.82%	\$ 182,824,303	\$ 563,125	\$ 18,800,000	\$ (15,305,911)	\$ (500,000)	\$ 1,436,664	\$ 187,818,181
2022	1.10%	187,818,181	568,418	18,354,520	(15,325,321)	(600,000)	1,981,887	192,797,685
2023	1.59%	192,797,685	573,762	18,809,552	(15,760,125)	(600,000)	2,942,406	198,763,280
2024	2.05%	198,763,280	579,155	18,065,102	(15,914,105)	(600,000)	3,916,799	204,810,231
2025	2.49%	204,810,231	584,599	15,021,174	(15,825,866)	(600,000)	4,911,970	208,902,108
2026	2.76%	208,902,108	590,094	14,977,773	(15,877,121)	(600,000)	5,537,098	213,529,952
2027	3.00%	213,529,952	595,641	14,434,904	(15,826,098)	(600,000)	6,160,173	218,294,572
2028	3.18%	218,294,572	601,240	11,992,572	(15,874,816)	(600,000)	6,681,377	221,094,945
2029	3.30%	221,094,945	606,892	11,150,783	(15,864,682)	(600,000)	7,025,901	223,413,839
2030	3.46%	223,413,839	612,597	11,409,540	(16,116,285)	(700,000)	7,441,952	226,061,643
2031	3.59%	226,061,643	618,355	9,268,850	(16,136,779)	(700,000)	7,816,912	226,928,981
2032	3.57%	226,928,981	624,167	9,228,717	(16,152,182)	(700,000)	7,801,261	227,730,944
2033	3.48%	227,730,944	630,035	8,689,147	(15,965,852)	(700,000)	7,654,221	228,038,495
2034	3.77%	228,038,495	635,957	9,350,145	(15,846,842)	(700,000)	8,287,650	229,765,405
2035	3.62%	229,765,405	641,935	9,211,716	(15,721,659)	(700,000)	8,040,080	231,237,477

Basis for the Valuation

Plan Member Summary

Police Officers and Firefighters', and Teachers' Plans

	Police Officers	Firefighters	Teachers	Total
Date Of Census Data:	5/1/2020	5/1/2020	5/1/2020	5/1/2020
Plan Member Counts:				
Actives	424	298	302	1,024
Terminated Vested	30	11	203	244
Normal Retirees ¹ - Current Benefits	3,950	1,195	4,706	9,851
Normal Retirees - Deferred Benefits	5	0	0	5
Beneficiaries	1,313	454	419	2,186
Disabled Retirees - Current Benefits	707	259	215	1,181
Disabled Retirees - Deferred Benefits	91	17	14	122
Total	6,520	2,234	5,859	14,613
Active Plan Member Characteristics:				
Total Pay	\$ 50,341,291	\$ 34,414,935	\$ 34,748,304	\$ 119,504,530
Average Age	52.28	53.03	58.68	54.39
Average Service	28.20	27.93	30.00	28.65
Inactive Plan Member Characteristics:				
<u>Average Age:</u>				
Terminated Vested	54.16	53.32	61.03	59.84
Normal Retirees	67.60	69.69	77.37	72.53
Beneficiaries	74.82	77.50	79.95	76.36
Disabled Retirees	70.56	74.94	76.69	72.57
<u>Total Annual Federal Benefits - Current:</u>				
Normal Retirees	\$ 182,544,694	\$ 64,965,974	\$ 176,860,584	\$ 424,371,251
Beneficiaries	43,053,972	15,020,676	8,639,436	66,714,084
Disabled Retirees	31,427,886	13,941,804	5,934,936	51,304,626
<u>Total Annual Federal Benefits - Deferred:</u>				
Terminated Vested	\$ 404,004	\$ 128,640	\$ 1,320,780	\$ 1,853,424
Normal Retirees	103,092	-	-	103,092
Disabled Retirees	893,568	121,188	114,504	1,129,260

¹ Throughout this report, "Normal Retirees" refer to Voluntary Retirements for the District of Columbia Teachers' Retirement Plan and Optional Retirements for the District of Columbia Police Officers and Firefighters' Retirement Plan.

Basis for the Valuation

Plan Member Summary

Judges' Plan

		Total
Date of Census Data		5/1/2020
<hr/>		
Plan Member Counts:		
Actives		61
Terminated Vested		0
Normal Retirees ¹		85
Beneficiaries		15
Disabled Retirees		1
Total		<u>162</u>
<hr/>		
Active Plan Member Characteristics		
Total Compensation for Covered Plan Members	\$	13,306,198
Average Age		58.55
Average Service		11.71
<hr/>		
Inactive Plan Member Characteristics		
<u>Average Age</u>		
Terminated Vested		N/A
Normal Retirees		76.60
Beneficiaries		83.92
Disabled Retirees		64.42
<u>Total Annual Benefits</u>		
Terminated Vested		N/A
Normal Retirees	\$	13,162,470
Beneficiaries		1,181,543
Disabled Retirees		138,939

¹ Throughout this report, "Normal Retirees" refer to Regular Retirements for the District of Columbia Judges' Retirement Plan.

Basis for the Valuation

Plan Member Reconciliation

The following tables show a reconciliation of the number of plan members from the previous census date to the current census date.

Police Officers and Firefighters', and Teachers' Plans

	Actives	Terminated Vested	Normal Retirees	Beneficiaries	Disabled Retirees	Totals
Plan Members as of May 1, 2019	1,307	204	9,890	2,172	1,378	14,951
New Plan Members	0	0	0	0	0	0
Rehires	1	(1)	0	0	0	0
Vested Terminations	(7)	7	0	0	0	0
Retirements	(273)	(9)	282	0	0	0
Deaths - Beneficiary	(2)	0	(96)	127	(29)	0
Deaths - No Beneficiary	(1)	(1)	(224)	(111)	(46)	(383)
Refund of Contributions	0	(1)	0	0	0	(1)
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	(10)	0	(10)
Data Corrections	(1)	45	4	8	0	56
Plan Members as of May 1, 2020	1,024	244	9,856	2,186	1,303	14,613

Police Officers

	Actives	Terminated Vested	Normal Retirees	Beneficiaries	Disabled Retirees	Totals
Plan Members as of May 1, 2019	593	32	3,872	1,286	834	6,617
New Plan Members	0	0	0	0	0	0
Rehires	0	0	0	0	0	0
Vested Terminations	(2)	2	0	0	0	0
Retirements	(164)	(3)	167	0	0	0
Deaths - Beneficiary	(2)	0	(54)	79	(23)	0
Deaths - No Beneficiary	0	0	(31)	(57)	(13)	(101)
Refund of Contributions	0	0	0	0	0	0
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	(5)	0	(5)
Data Corrections	(1)	(1)	1	10	0	9
Plan Members as of May 1, 2020	424	30	3,955	1,313	798	6,520

Basis for the Valuation

Plan Member Reconciliation

The following tables show a reconciliation of the number of plan members from the previous census date to the current census date.

Firefighters

	Actives	Terminated Vested	Normal Retirees	Beneficiaries	Disabled Retirees	Totals
Plan Members as of May 1, 2019	360	14	1,168	462	297	2,301
New Plan Members	0	0	0	0	0	0
Rehires	0	0	0	0	0	0
Vested Terminations	0	0	0	0	0	0
Retirements	(62)	(2)	64	0	0	0
Deaths - Beneficiary	0	0	(20)	25	(5)	0
Deaths - No Beneficiary	0	(1)	(17)	(30)	(16)	(64)
Refund of Contributions	0	0	0	0	0	0
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	(4)	0	(4)
Data Corrections	0	0	0	1	0	1
Plan Members as of May 1, 2020	298	11	1,195	454	276	2,234

Teachers

	Actives	Terminated Vested	Normal Retirees	Beneficiaries	Disabled Retirees	Totals
Plan Members as of May 1, 2019	354	158	4,850	424	247	6,033
New Plan Members	0	0	0	0	0	0
Rehires	1	(1)	0	0	0	0
Vested Terminations	(5)	5	0	0	0	0
Retirements	(47)	(4)	51	0	0	0
Deaths - Beneficiary	0	0	(22)	23	(1)	0
Deaths - No Beneficiary	(1)	0	(176)	(24)	(17)	(218)
Refund of Contributions	0	(1)	0	0	0	(1)
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	(1)	0	(1)
Data Corrections	0	46	3	(3)	0	46
Plan Members as of May 1, 2020	302	203	4,706	419	229	5,859

Basis for the Valuation

Plan Member Reconciliation

The following table shows a reconciliation of the number of plan members from the previous census date to the current census date.

Judges' Plan

	Actives	Terminated Vested	Normal Retirees	Beneficiaries	Disabled Retirees	Totals
Plan Members as of May 1, 2019	59	0	81	14	1	155
New Plan Members	7	0	0	0	0	7
Rehires	0	0	0	0	0	0
Vested Terminations	0	0	0	0	0	0
Retirements	(5)	0	5	0	0	0
Deaths - Beneficiary	0	0	(1)	1	0	0
Deaths - No Beneficiary	0	0	0	0	0	0
Refund of Contributions	0	0	0	0	0	0
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	0	0	0
Data Corrections	0	0	0	0	0	0
Plan Members as of May 1, 2020	61	0	85	15	1	162

Basis for the Valuation

Age-Service Grid

Police Officers

Active Population															
Service	Under 20			20-24		25-29		30-34		35-39		40+		All Service	
Age Group	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.
0 - 39	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-
40 - 44	-		-	1	103,892		-	-		-		-	-	1	103,892
45 - 49	-		-	36	114,641	95	118,553	9	117,189	-		-	-	140	117,459
50 - 54	-		-	28	111,648	80	122,357	69	116,678	-		-	-	177	118,449
55 - 59	-		-	5	115,723	25	119,374	53	121,956	5	133,813	-		88	121,542
60 - 64	-		-	3	110,798	5	105,210	6	119,087	2	139,305	2	140,198	18	118,443
65 - 69	-		-	-		-		-		-		-		-	
70+	-		-	-		-		-		-		-		-	
All Ages	-	\$	-	73	\$113,262	205	\$119,812	137	\$118,859	7	\$135,382	2	\$140,198	424	\$118,729

Basis for the Valuation

Age-Service Grid

Firefighters

Active Population																
Service	Under 20			20-24		25-29		30-34		35-39		40+		All Service		
Age Group	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	
0 - 39	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	
40 - 44	-		-	-		-	-		-	-		-	-		-	
45 - 49	-		-	2	118,005	47	114,931	25	118,708	-		-	-	74	116,290	
50 - 54	-		-	46	102,232	60	125,289	15	119,669	-		-	-	121	115,827	
55 - 59	-		-	31	99,993	42	114,235	15	133,745	2	225,047	-		90	115,043	
60 - 64	-		-	3	90,602	-		7	114,334	3	122,804	-		13	110,812	
65 - 69	-		-	-		-		-		-		-		-		
70+	-		-	-		-		-		-		-		-		
All Ages	-	\$	-	82	\$101,345	149	\$118,906	62	\$122,084	5	\$163,701	-	\$	-	298	\$115,486

Basis for the Valuation

Age-Service Grid

Teachers

Active Population																
Service	Under 20			20-24		25-29		30-34		35-39		40+		All Service		
Age Group	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	No.	Avg.	Comp.	
0 - 39	-	\$	-	-	\$	-	-	\$	-	-	\$	-	-	\$	-	
40 - 44	-		-	-		-	-		-	-		-	-		-	
45 - 49	-		-	6	111,674		17	115,409	-		-	-		23	114,435	
50 - 54	-		-	13	112,778		52	114,452	6	124,668	-		-	71	115,009	
55 - 59	-		-	7	113,133		27	112,901	50	114,700	1	116,408	-		85	114,020
60 - 64	-		-	3	114,332		22	120,173	35	112,016	8	113,518	2	133,596	70	115,467
65 - 69	-		-	2	113,294		10	121,021	9	113,622	12	120,896	4	113,294	37	117,928
70+	-		-	-		-	3	114,332	7	109,582	3	112,006	3	122,300	16	113,312
All Ages	-	\$	-	31	\$112,828		131	\$115,716	107	\$113,956	24	\$117,138	9	\$120,808	302	\$115,061

Basis for the Valuation

Age-Service Grid

Judges

Active Population																					
Service	Under 1		1-4		5-9		10-14		15-19		20-24		25-29		30-34		35+		All Service		
Age Group	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	
0 - 34	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
35 - 39	1	229,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	229,500	
40 - 44	1	216,400	2	216,400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	216,400	
45 - 49	-	-	2	216,400	4	219,675	1	216,400	-	-	-	-	-	-	-	-	-	-	7	218,271	
50 - 54	-	-	3	216,400	2	216,400	3	216,400	-	-	-	-	-	-	-	-	-	-	8	216,400	
55 - 59	1	216,400	4	216,400	2	222,950	1	216,400	4	216,400	2	223,200	-	-	-	-	-	-	14	218,307	
60 - 64	-	-	2	216,400	4	219,675	3	216,400	2	216,400	2	216,400	-	-	-	-	-	-	13	217,408	
65 - 69	-	-	1	216,400	-	-	3	220,767	2	216,400	2	216,650	1	216,400	-	-	-	-	9	217,911	
70+	-	-	-	-	-	-	1	229,500	1	216,400	2	222,950	1	216,400	1	216,400	-	-	6	220,767	
All Ages	3	\$220,767	14	\$216,400	12	\$219,675	12	\$218,583	9	\$216,400	8	\$219,800	2	\$216,400	1	\$216,400	-	-	61	\$218,134	

Basis for the Valuation

Federal Allocation by Plan

Police Officers and Firefighters', and Teachers' Plans

Active Plan Members	Police Officers		Firefighters		Teachers	
Number	424		298		302	
Average Age	52.28		53.03		58.68	
Average Service	28.20		27.93		30.00	
Average Pay	\$	118,729	\$	115,486	\$	115,061

Inactive Plan Members	Police Officers		Firefighters		Teachers	
	100% Federal	Partial Federal	100% Federal	Partial Federal	100% Federal	Partial Federal
Normal Retirees - Current Federal Benefit						
Number	1,801	2,149	490	705	1,339	3,367
Average Age	75.79	60.78	79.51	62.86	86.29	73.83
Average Federal Benefit	\$ 56,752	\$ 37,382	\$ 66,919	\$ 45,639	\$ 47,667	\$ 33,571
Average Total Benefit	\$ 56,752	\$ 78,957	\$ 66,919	\$ 88,079	\$ 47,667	\$ 54,969
Normal Retirees - Deferred Federal Benefit						
Number	N/A	5	N/A	0	N/A	0
Average Age	N/A	51.01	N/A	N/A	N/A	N/A
Average Federal Benefit	N/A	\$ 20,618	N/A	N/A	N/A	N/A
Average Total Benefit	N/A	\$ 65,302	N/A	N/A	N/A	N/A
Beneficiaries - Current Federal Benefit¹						
Number	1,147	166	401	53	276	143
Average Age	77.40	56.99	80.38	55.72	83.69	72.74
Average Federal Benefit	\$ 34,093	\$ 23,791	\$ 34,500	\$ 22,378	\$ 24,083	\$ 13,934
Average Total Benefit	\$ 34,093	\$ 35,234	\$ 34,500	\$ 39,434	\$ 24,083	\$ 20,279
Disabled Retirees - Current Federal Benefit						
Number	557	150	213	46	141	74
Average Age	75.77	62.13	78.85	65.21	81.62	70.84
Average Federal Benefit	\$ 49,443	\$ 25,919	\$ 57,330	\$ 37,622	\$ 32,797	\$ 17,710
Average Total Benefit	\$ 49,443	\$ 47,502	\$ 57,330	\$ 55,763	\$ 32,797	\$ 37,176
Disabled Retirees - Deferred Federal Benefit						
Number	N/A	91	N/A	17	N/A	14
Average Age	N/A	52.58	N/A	52.39	N/A	58.03
Average Federal Benefit	N/A	\$ 9,819	N/A	\$ 7,129	N/A	\$ 8,179
Average Total Benefit	N/A	\$ 39,251	N/A	\$ 38,249	N/A	\$ 39,702
Terminated Vested - Deferred Federal Benefit						
Number		30		11		203
Average Age		54.16		53.32		61.03
Average Federal Benefit		\$ 13,467		\$ 11,695		\$ 6,506

¹ Includes child beneficiaries.

Basis for the Valuation

Plan Member Counts

Judges' Plan

Active Plan Members		
Number		61
Average Age		58.55
Average Service		11.71
Average Pay	\$	218,134
Number Eligible to Retire		28

Inactive Plan Members		
Normal Retirees		
Number		85
Average Age		76.60
Average Benefit	\$	154,853
Spouse Beneficiaries		
Number		14
Average Age		86.03
Average Benefit	\$	83,934
Disabled Retirees		
Number		1
Average Age		64.42
Average Benefit	\$	138,939
Child Beneficiaries		
Number		1
Average Age		54.38
Average Benefit	\$	6,465

Basis for the Valuation

Inactive Benefit Information

Inactive Police Officers - Current Benefits

Normal Retirees	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	-	\$ -	\$ -
35-39	-	-	-	-	-
40-44	-	-	-	-	-
45-49	-	-	-	-	-
50-54	-	-	464	20,187	79,593
55-59	-	-	662	25,338	75,072
60-64	4	25,299	441	37,022	78,454
65-69	209	48,091	351	58,099	80,801
70-74	724	54,001	187	74,775	86,739
75-79	476	59,267	41	78,465	86,936
80-84	276	60,861	3	91,180	102,284
85-89	91	65,591	-	-	-
90-94	16	94,046	-	-	-
95-99	5	96,010	-	-	-
100 and over	-	-	-	-	-
Total	1,801	\$ 56,752	2,149	\$ 37,382	\$ 78,957

Beneficiaries	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	4	\$ 41,916	20	\$ 3,442	\$ 11,260
35-39	-	-	1	1,656	4,272
40-44	1	31,740	1	14,592	38,112
45-49	2	19,464	9	13,316	32,383
50-54	9	27,973	23	16,217	32,294
55-59	20	40,180	22	20,185	38,344
60-64	56	32,717	32	28,113	40,508
65-69	132	33,318	28	33,181	41,862
70-74	237	33,462	18	37,855	42,584
75-79	236	33,772	11	34,667	39,130
80-84	215	34,629	1	35,976	38,148
85-89	122	35,936	-	-	-
90-94	80	34,097	-	-	-
95-99	31	33,473	-	-	-
100 and over	2	42,594	-	-	-
Total	1,147	\$ 34,093	166	\$ 23,791	\$ 35,234

Basis for the Valuation

Inactive Benefit Information

Inactive Police Officers - Current Benefits

Disabled Retirees	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	-	\$ -	\$ -
35-39	-	-	-	-	-
40-44	-	-	-	-	-
45-49	-	-	-	-	-
50-54	5	22,728	-	-	-
55-59	11	23,459	60	14,045	38,752
60-64	31	29,716	48	22,674	47,694
65-69	89	43,647	34	45,087	59,419
70-74	141	47,705	5	51,019	59,189
75-79	120	50,686	3	56,256	64,884
80-84	80	55,886	-	-	-
85-89	42	60,608	-	-	-
90-94	33	65,499	-	-	-
95-99	5	75,206	-	-	-
100 and over	-	-	-	-	-
Total	557	\$ 49,443	150	\$ 25,919	\$ 47,502

Inactive Police Officers - Deferred Benefits

Terminated Vested	Count	Average Federal Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	3	2,644
50-54	19	11,890
55-59	5	14,215
60-64	3	33,028
65-69	-	-
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-99	-	-
100 and over	-	-
Total	30	\$ 13,467

Basis for the Valuation

Inactive Benefit Information

Inactive Police Officers - Deferred Benefits

Normal Retirees	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	\$ -
35-39	-	-	-
40-44	-	-	-
45-49	1	6,408	40,620
50-54	4	24,171	71,472
55-59	-	-	-
60-64	-	-	-
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-99	-	-	-
100 and over	-	-	-
Total	5	\$ 20,618	\$ 65,302

Disabled Retirees	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	\$ -
35-39	-	-	-
40-44	-	-	-
45-49	11	6,393	43,015
50-54	71	10,182	39,166
55-59	9	11,145	35,319
60-64	-	-	-
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-99	-	-	-
100 and over	-	-	-
Total	91	\$ 9,819	\$ 39,251

Basis for the Valuation

Inactive Benefit Information

Inactive Firefighters - Current Benefits

Normal Retirees	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	-	\$ -	\$ -
35-39	-	-	-	-	-
40-44	-	-	-	-	-
45-49	-	-	-	-	-
50-54	-	-	76	19,719	82,729
55-59	-	-	156	27,515	82,006
60-64	-	-	226	40,452	86,748
65-69	17	46,572	152	57,700	88,536
70-74	83	59,301	74	82,738	99,852
75-79	178	65,506	20	111,058	120,901
80-84	130	72,789	1	128,292	145,728
85-89	60	70,762	-	-	-
90-94	19	78,336	-	-	-
95-99	3	73,324	-	-	-
100 and over	-	-	-	-	-
Total	490	\$ 66,919	705	\$ 45,639	\$ 88,079

Beneficiaries	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	8	\$ 12,524	\$ 32,289
35-39	-	-	2	1,908	4,338
40-44	1	30,264	-	-	-
45-49	-	-	2	7,986	35,124
50-54	2	33,888	4	12,744	66,885
55-59	5	28,536	10	14,690	34,831
60-64	12	29,065	7	24,871	39,024
65-69	25	33,147	10	31,350	38,868
70-74	58	33,416	9	38,696	49,084
75-79	91	33,760	1	32,328	33,288
80-84	90	33,666	-	-	-
85-89	50	37,222	-	-	-
90-94	42	37,202	-	-	-
95-99	23	38,506	-	-	-
100 and over	2	33,492	-	-	-
Total	401	\$ 34,500	53	\$ 22,378	\$ 39,434

Basis for the Valuation

Inactive Benefit Information

Inactive Firefighters - Current Benefits

Disabled Retirees	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	-	\$ -	\$ -
35-39	-	-	-	-	-
40-44	-	-	-	-	-
45-49	-	-	-	-	-
50-54	-	-	-	-	-
55-59	-	-	11	13,933	44,378
60-64	6	24,086	10	27,595	50,129
65-69	26	48,497	18	45,374	59,294
70-74	36	53,877	6	71,930	75,830
75-79	48	58,848	1	53,064	53,388
80-84	55	61,425	-	-	-
85-89	22	58,804	-	-	-
90-94	16	68,267	-	-	-
95-99	3	70,208	-	-	-
100 and over	1	66,564	-	-	-
Total	213	\$ 57,330	46	\$ 37,622	\$ 55,763

Inactive Firefighters - Deferred Benefits

Terminated Vested	Count	Average Federal Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	3	11,392
50-54	5	12,067
55-59	2	14,676
60-64	1	4,776
65-69	-	-
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-99	-	-
100 and over	-	-
Total	11	\$ 11,695

Basis for the Valuation

Inactive Benefit Information

Inactive Firefighters - Deferred Benefits

Disabled Retirees	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	\$ -
35-39	-	-	-
40-44	-	-	-
45-49	2	10,242	47,808
50-54	14	7,149	36,399
55-59	1	612	45,024
60-64	-	-	-
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-99	-	-	-
100 and over	-	-	-
Total	17	\$ 7,129	\$ 38,249

Basis for the Valuation

Inactive Benefit Information

Inactive Teachers - Current Benefits

Normal Retirees	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	-	\$ -	\$ -
35-39	-	-	-	-	-
40-44	-	-	-	-	-
45-49	-	-	-	-	-
50-54	-	-	4	8,835	48,186
55-59	-	-	57	14,752	57,110
60-64	1	42,840	221	17,995	55,970
65-69	5	5,664	535	24,951	56,089
70-74	45	25,789	1,083	34,158	55,621
75-79	161	41,707	995	39,505	54,721
80-84	359	52,322	371	38,594	51,566
85-89	409	49,865	79	40,361	52,248
90-94	246	45,441	19	47,756	61,295
95-99	92	48,268	3	39,028	49,352
100 and over	21	51,537	-	-	-
Total	1,339	\$ 47,667	3,367	\$ 33,571	\$ 54,969

Beneficiaries	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	1	\$ 5,076	\$ 7,116
35-39	-	-	-	-	-
40-44	1	10,848	1	8,328	24,168
45-49	2	8,202	1	7,248	9,024
50-54	2	9,024	1	10,692	13,332
55-59	2	8,664	4	7,155	23,538
60-64	5	20,026	17	9,349	16,290
65-69	5	23,417	26	14,298	22,875
70-74	21	22,215	33	15,794	21,406
75-79	51	23,014	33	13,859	18,811
80-84	52	25,095	14	16,509	21,410
85-89	65	23,658	9	15,197	19,803
90-94	42	25,565	2	19,368	27,294
95-99	25	29,163	1	16,740	20,676
100 and over	3	27,088	-	-	-
Total	276	\$ 24,083	143	\$ 13,934	\$ 20,279

Basis for the Valuation

Inactive Benefit Information

Inactive Teachers - Current Benefits

Disabled Retirees	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	-	\$ -	\$ -
35-39	-	-	-	-	-
40-44	-	-	-	-	-
45-49	-	-	-	-	-
50-54	-	-	-	-	-
55-59	3	24,660	-	-	-
60-64	3	24,228	10	9,534	34,985
65-69	3	30,496	12	15,795	39,828
70-74	26	29,596	42	18,039	36,737
75-79	32	30,439	9	28,572	40,692
80-84	25	33,505	1	10,860	14,052
85-89	24	31,951	-	-	-
90-94	11	32,468	-	-	-
95-99	9	46,943	-	-	-
100 and over	5	51,727	-	-	-
Total	141	\$ 32,797	74	\$ 17,710	\$ 37,176

Inactive Teachers - Deferred Benefits

Terminated Vested	Count	Average Federal Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	10	2,584
50-54	39	4,480
55-59	53	6,639
60-64	42	7,960
65-69	29	7,614
70-74	15	5,338
75-79	15	8,876
80-84	-	-
85-89	-	-
90-94	-	-
95-99	-	-
100 and over	-	-
Total	203	\$ 6,506

Basis for the Valuation

Inactive Benefit Information

Inactive Teachers - Deferred Benefits

Disabled Retirees	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	\$ -
35-39	-	-	-
40-44	-	-	-
45-49	-	-	-
50-54	3	3,388	37,272
55-59	6	7,326	39,774
60-64	5	12,077	41,074
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-99	-	-	-
100 and over	-	-	-
Total	14	\$ 8,179	\$ 39,702

Basis for the Valuation

Inactive Benefit Information

Inactive Judges

Normal Retirees	Count	Average Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	-	-
50-54	-	-
55-59	-	-
60-64	5	143,915
65-69	12	155,902
70-74	21	152,034
75-79	19	159,860
80-84	13	168,743
85-89	9	167,153
90-94	5	115,574
95-99	1	66,092
100 and over	-	-
Total	85	\$ 154,853

Beneficiaries	Count	Average Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	-	-
50-54	1	6,465
55-59	-	-
60-64	-	-
65-69	-	-
70-74	2	106,931
75-79	1	102,926
80-84	5	87,115
85-89	0	-
90-94	3	76,704
95-99	3	64,201
100 and over	-	-
Total	15	\$ 78,770

Disabled Retirees	Count	Average Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	-	-
50-54	-	-
55-59	-	-
60-64	1	138,939
65-69	-	-
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-99	-	-
100 and over	-	-
Total	1	\$ 138,939

Terminated Vested	Count	Average Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	-	-
50-54	-	-
55-59	-	-
60-64	-	-
65-69	-	-
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-99	-	-
100 and over	-	-
Total	-	\$ -

APPENDIX A

Actuarial Assumptions and Methods

Methods

Liability Valuation Method

The funding method is the individual entry age normal method for the Judges' Plan and projected unit credit method for the Police Officers and Firefighters' and Teachers' Plans. The individual entry age normal method allocates the actuarial present value of the projected benefits of each individual on a level basis over the service of the individual between participation age and projected exit age. The projected unit credit method recognizes the portion of the present value of the projected benefits earned as of the valuation date. Since there are no remaining participants earning new benefit accruals in the Police Officers and Firefighters' and Teachers' Plans, ODCP believes that it is prudent to accelerate the recognition of the benefit accruals, as opposed to deferring the value of benefits already earned.

Under the Entry Age Normal Method, the present value of future benefits is equal to the value of the projected benefit payable at retirement discounted back to the plan member's current age. Discounts include such items as interest and mortality. The difference between the present value of future benefits and the present value of future normal cost contributions represents the actuarial liability at the plan member's current age.

Under the Projected Unit Credit Method (Benefit Accrual Method), the accrued liability is determined by calculating a benefit based on service earned to the valuation date with compensation projected to the expected retirement date (or other event), then discounting those amounts to the valuation date. The actuarial accrued liability for participants currently receiving payments is calculated as the actuarial present value of future benefits expected to be paid.

For the purposes of determining the actuarial gains and losses during the year, liabilities as of October 1, 2020 for the Judges' Plan uses the prior year Effective Interest Rate. The liabilities for the Police Officers and Firefighters' and Teachers' Plans are based on 2020 spot rates implied by the 2019 spot rate yield curve. These spot rates used in gain/loss analysis were calculated by converting the 2019 spot rates to forward rates, removing the forward rate for FY 2020, and then converting the forward rates back to spot rates. See the table below for an example of the rates.

Fiscal Year	2019 Valuation Spot Rate Assumption	Forward Rate (rounded)	Implied 2020 Spot Rates used for (Gain)/Loss only
FY 2020	0.74%	0.74%	N/A
FY 2021	0.94%	1.14%	1.14%
FY 2022	1.20%	1.72%	1.43%
FY 2023	1.47%	2.28%	1.71%

Example: 1.71% adjusted FY 2021 spot rate = $(1.0114 \times 1.0172 \times 1.0228)^{(1/3)} - 1$

Asset Valuation Method

The market value of assets projected to September 30, 2020 without smoothing is provided by ODCP and used for purposes of the valuation. When assets are subtracted from the actuarial liability the remainder represents the unfunded liability.

Funding Method

For Judges, the normal cost under the individual entry age normal method is a level percentage of pay. The normal cost is calculated by discounting the value of all expected benefits to a participant's entry date and dividing by an increasing annuity reflecting anticipated salary increases from plan entry to expected exit ages. The normal cost to the Department of the Treasury is the full amount, less expected employee contributions. The funding method for the Police Officers and Firefighters' and Teachers' Plans is the projected unit credit method. No normal cost is payable for these participants as benefit service is frozen. For both methods, changes in actuarial assumptions, changes in plan provisions, and differences in actual experience compared to expected experience are reflected as part of the annual amount of gain or loss, which is a component of the total amortization of the Unfunded Accrued Liability.

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Methods

The prior amortization periods and payments are fixed from year-to-year. Because of this, the balances of prior amortization bases are recalculated each year to reflect changes in the underlying interest rates. New amortization payments due to (Gain)/Loss are recognized over a 10-year period, while those due to assumption changes are recognized over a period of 20 years.

For the Police Officers and Firefighters', and Teachers' Plans, the outstanding amortization bases are re-calculated each year using the new spot rates. For the Judges' Plan, the outstanding amortization bases are re-calculated each year at the new funding effective interest rate (EIR).

The asset (Gain)/Loss is determined using the same interest rates as the liability (Gain)/Loss.

Mortality Adjustment from Census Date to Valuation Date

The census data is adjusted from the date it is provided to the valuation date. A factor is applied to the liabilities calculated using the census data to account for the estimated mortality between the census date and the valuation date.

Procedures

Financial and Census data were submitted by the Department of the Treasury. Information provided was reviewed for internal consistency and there is no reason to doubt its substantial accuracy.

No benefits of materiality were excluded from the valuation of the liabilities.

The Department of the Treasury provided us with data on actives who, as of the valuation date, had completed the plan's eligibility requirements.

Method Changes Since Last Year

None.

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Actuarial Assumptions and Methods

Assumptions

Interest Rates

The June 30, 2020 rates (averaged over 40 quarters, as published by the Department of the Treasury) shown below were used for the current valuation. The Police Officers and Firefighters', and Teachers' Plans are measured using the full yield curve for the liability interest rate, while the Judges' Plan is measured using the equivalent Effective Interest Rate (EIR).

Duration	Return	Duration	Return	Duration	Return	Duration	Return
0-1	0.82%	25-26	3.19%	50-51	3.47%	75-76	3.56%
1-2	0.96%	26-27	3.21%	51-52	3.47%	76-77	3.56%
2-3	1.17%	27-28	3.23%	52-53	3.48%	77-78	3.56%
3-4	1.39%	28-29	3.25%	53-54	3.48%	78-79	3.57%
4-5	1.61%	29-30	3.27%	54-55	3.49%	79-80	3.57%
5-6	1.80%	30-31	3.29%	55-56	3.49%	80-81	3.57%
6-7	1.97%	31-32	3.30%	56-57	3.50%	81-82	3.57%
7-8	2.12%	32-33	3.31%	57-58	3.50%	82-83	3.58%
8-9	2.25%	33-34	3.33%	58-59	3.50%	83-84	3.58%
9-10	2.37%	34-35	3.34%	59-60	3.51%	84-85	3.58%
10-11	2.48%	35-36	3.35%	60-61	3.51%	85-86	3.58%
11-12	2.57%	36-37	3.36%	61-62	3.52%	86-87	3.58%
12-13	2.64%	37-38	3.37%	62-63	3.52%	87-88	3.58%
13-14	2.72%	38-39	3.38%	63-64	3.52%	88-89	3.59%
14-15	2.78%	39-40	3.39%	64-65	3.53%	89-90	3.59%
15-16	2.83%	40-41	3.40%	65-66	3.53%	90-91	3.59%
16-17	2.88%	41-42	3.41%	66-67	3.53%	91-92	3.59%
17-18	2.93%	42-43	3.41%	67-68	3.54%	92-93	3.59%
18-19	2.97%	43-44	3.42%	68-69	3.54%	93-94	3.59%
19-20	3.01%	44-45	3.43%	69-70	3.54%	94-95	3.60%
20-21	3.04%	45-46	3.44%	70-71	3.55%	95-96	3.60%
21-22	3.07%	46-47	3.44%	71-72	3.55%	96-97	3.60%
22-23	3.11%	47-48	3.45%	72-73	3.55%	97-98	3.60%
23-24	3.14%	48-49	3.46%	73-74	3.55%	98-99	3.60%
24-25	3.16%	49-50	3.46%	74-75	3.56%	99-100	3.60%

The Effective Interest Rates (single rate that produces the same results when applied to all cash flows) for all plans are as follows:

	Police	Fire	Teachers	Judges
EIR	2.77%	2.76%	2.60%	2.91%

Interest Rates for (Gain)/Loss

The same interest rates were used for purposes of rolling forward plan assets and rolling forward plan liabilities for determining gains and losses. For Judges, the 2019 EIR (3.12%) was used for this purpose. For Police, Fire and Teachers, the first spot rate from the 2019 spot rate curve (0.74%) was used for this purpose.

Economic Assumptions

	Police	Fire	Teachers	Judges
COLA ¹	1.76%	1.76%	1.71%	1.52%
Wage Inflation	2.15%	2.20%	2.30%	0.94%

¹The Cost-of-Living Adjustment (COLA) assumption above does not apply to police officers and firefighters who retired prior to February 15, 1980, as they receive COLAs based on wage inflation.

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Actuarial Assumptions and Methods

Assumptions

Salary Growth	The additional salary increases (on top of the general wage increases for all actives as shown in the above table) are shown below:				
	Years of Service	Police	Fire	Teachers	Judges
	20	8.00%	5.50%	2.00%	0.00%
	21	0.50%	1.50%	1.00%	0.00%
	22	0.50%	1.50%	1.00%	0.00%
	23	0.50%	1.50%	1.00%	0.00%
	24	0.50%	1.50%	1.00%	0.00%
	25	3.00%	4.40%	1.00%	0.00%
	26	0.50%	1.20%	1.00%	0.00%
	27	0.50%	1.20%	1.00%	0.00%
	28	0.50%	1.20%	1.00%	0.00%
	29	0.50%	1.20%	1.00%	0.00%
	30	3.00%	5.70%	0.60%	0.00%
	31+	0.25%	1.30%	0.60%	0.00%
	Salary Growth	Police officers receive longevity increases of 5% of step 1 pay in the officers’ pay class after 15 years of service and additional increases of 5% of step 1 pay in the officers’ pay class after 20, 25 and 30 years of service. Longevity pay is included in pensionable compensation once the member has 25 years of service. Police officers receive an additional increase of 5% of base pay for the Base Retention Differential after 20 years of service.			
Firefighters are assumed to receive longevity increases of 5%, 10%, 15%, and 20% applied to base pay after 15, 20, 25, and 30 years of service, respectively, and are included in pensionable compensation for all years.					
Active Plan Member Base Mortality	<ul style="list-style-type: none">• Police Officers and Firefighters: Pub-2010 Public Safety Employee, Above-Median Income• Teachers: Pub-2010 Teacher Employee, Above-Median Income• Judges: Pub-2010 General Employee, Above-Median Income				
Retired Plan Member Base Mortality	<ul style="list-style-type: none">• Police Officers and Firefighters: Credibility Adjusted Pub-2010 Public Safety Healthy Retiree, Above-Median Income• Teachers: Credibility Adjusted Pub-2010 Teacher Healthy Retiree, Above-Median Income• Judges: Pub-2010 General Healthy Retiree, Above-Median Income				

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Actuarial Assumptions and Methods

Assumptions

Beneficiary - Surviving Spouse Member Base Mortality	<ul style="list-style-type: none"> • Police Officers and Firefighters: Credibility Adjusted Pub-2010 Contingent Survivor, Above-Median Income • Teachers: Credibility Adjusted Pub-2010 Contingent Survivor, Above-Median Income • Judges: Pub-2010 Contingent Survivor, Above-Median Income
Beneficiary - Non-Disabled Child Member Base Mortality	<ul style="list-style-type: none"> • Police Officers and Firefighters: Age 0-17, Pub-2010 Juvenile; Age 18+, Pub-2010 General Healthy Employee, Above-Median Income • Teachers: Age 0-17, Pub-2010 Juvenile; Age 18+, Pub-2010 General Healthy Employee, Above-Median Income
Disabled Plan Member Base Mortality	<ul style="list-style-type: none"> • Police Officers and Firefighters: Credibility Adjusted Pub-2010 Public Safety Disabled Retiree, Full Data Set • Teachers: Pub-2010 Teacher Disabled Retiree, Full Data Set • Judges: Pub-2010 General Disabled Retiree, Full Data Set
Beneficiary - Disabled Child Member Base Mortality	<ul style="list-style-type: none"> • Police Officers and Firefighters: Age 0-17, Pub-2010 Juvenile; Age 18+, Pub-2010 General Disabled Retiree, Full Data Set • Teachers: Age 0-17, Pub-2010 Juvenile; Age 18+, Pub-2010 General Disabled Retiree, Full Data Set
Longevity Improvement Projection Scale	Mortality tables are adjusted using generational projection from 2010 using Scale MP-2019.
Mortality Adjustment from Census Date to Valuation Date	The liabilities are adjusted to account for mortality during the 5 month period between the census collection date of May 1, 2020 and the valuation date of October 1, 2020. The liabilities for inactive plan members in the Police Officers and Firefighters' Plan are decreased by 0.1441% per month (0.992795 factor applied). The liabilities for inactive plan members in the Teachers' Plan are decreased by 0.1808% per month (0.990960 factor applied). The liabilities for inactive plan members in the Judges' Plan are reduced by 0.1987% per month (0.990065 factor applied). The liabilities for active plan members are unadjusted.

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Actuarial Assumptions and Methods

Assumptions

Disability	No disabilities are assumed among Judges.						
	Below are sample rates of disability assumed to occur:						
	Age		Police	Fire	Teachers	Judges	
	30-34		0.000%	0.000%	0.070%	0.000%	
	35-39		0.000%	0.000%	0.120%	0.000%	
	40-44		0.500%	0.500%	0.128%	0.000%	
	45-49		0.150%	0.100%	0.208%	0.000%	
	50-54		0.100%	0.100%	0.500%	0.000%	
	55-59		0.000%	0.000%	0.800%	0.000%	
	60-64		0.000%	0.000%	0.800%	0.000%	
65+		0.000%	0.000%	0.000%	0.000%		
Note that the Federal portion of the disability benefits for police officers and firefighters is the same for service and non-service related disabilities. Therefore, an assumption on percentage of service related disabilities was not necessary. All incidents of disability were assumed to result in plan members being 100% disabled.							
Retirement Age	Retirement is assumed to occur in accordance with the table below:						
	Age		Police-Male	Police-Female	Fire	Teachers	Judges
	50		55%	65%	55%	0%	0%
	51		30%	40%	30%	0%	0%
	52		30%	40%	30%	0%	0%
	53		30%	40%	30%	0%	0%
	54		30%	40%	30%	0%	0%
	55		30%	40%	30%	25%	0%
	56		30%	40%	30%	25%	0%
	57		30%	40%	30%	25%	0%
	58		30%	40%	30%	25%	10%
	59		30%	40%	40%	25%	10%
	60		100%	100%	100%	40%	10%
	61		100%	100%	100%	25%	10%
	62		100%	100%	100%	30%	10%
	63		100%	100%	100%	25%	10%
	64		100%	100%	100%	25%	10%
	65		100%	100%	100%	30%	10%
	66		100%	100%	100%	30%	10%
	67		100%	100%	100%	30%	10%
	68		100%	100%	100%	30%	10%
	69		100%	100%	100%	30%	10%
	70		100%	100%	100%	100%	100%
71+		100%	100%	100%	100%	100%	
Return of Employee Contributions	In valuing return of contribution benefits for employees assumed to die without a spouse or to terminate and elect a refund of their contribution balance, the employee contributions balance was estimated based on the actual employee contribution balance when available (provided as of the census date for the Judges' Plan and July 1, 1998 for the other plans), otherwise using estimated prior salaries. The actual contribution amount for Judges is used to project the hypothetical employee contribution refund due.						

APPENDIX A

Actuarial Assumptions and Methods

Assumptions

Post Retirement Contributions	Retired Judges may elect to contribute 3.5% or 7.0% of their retirement benefit to provide a survivor benefit. The net amount of this benefit was included in benefit payments and projections, and the normal cost was not offset by these contributions.
Expenses	The 15-Year Fund projections for all plans use expense projections provided by the Department of the Treasury. The 15-Year Fund projections for the Judges' Plan assumes employee contribution increases at the same rate as pay for actives.
Spousal Age	<ul style="list-style-type: none"> • Police Officers and Firefighters and Teachers: Male spouses are assumed to be two years older than their female spouse when actual beneficiary data was unavailable. • Judges: Male spouses are assumed to be three years older than their female spouse when actual beneficiary data was unavailable.
Effective Form of Payment Election	<ul style="list-style-type: none"> • Police Officers and Firefighters: 70% of plan members are assumed to receive a Joint-and-57% Survivor Annuity, and 30% of plan members are assumed to receive a Single Life Annuity. Any additional survivor benefit for police officers and firefighters whose average pay was less than class 1, step 6 pay was not valued. • Teachers: 100% of active and terminated vested plan members were valued assuming benefits are payable as a Single Life Annuity. For retirees, 5% were assumed to elect a Joint-and-55% Survivor Annuity, 20% to elect a Joint-and-25% Survivor Annuity, and 75% to elect a Straight Life Annuity. • Judges: Judges who have elected survivor benefits are assumed to have a covered spouse with a Joint-and-55% Survivor Annuity. All others assumed to have a Single Life Annuity.
Open Group Projections for Judges	All active judges were assumed to be replaced upon termination from the plan. The replacement is based on a 50/50 blend of a new age 45 judge and a new age 55 judge, assuming 50% male and 50% female. The starting salary is assumed to be \$216,400 for all new entrants.
Data	This actuarial valuation has been prepared based upon plan member data provided by the Department of the Treasury. We have reviewed the data for reasonableness, but have not independently audited the data. We have no reason to believe the data is not complete and accurate, and know of no further information that is essential to the preparation of the actuarial valuation.

APPENDIX A

Actuarial Assumptions and Methods

Assumptions

Changes from Prior Report

Interest Rate

The interest rate assumption was changed to reflect average quarterly Treasury yield rates for the 10-year period ending on June 30, 2020. The June 30, 2019 rates (averaged over 40 quarters, as published by the Department of the Treasury) shown below were used for the prior valuation of the Police Officers and Firefighters', and Teachers' Plans. The prior year EIR for the Judges' Plan was 3.12%.

Duration	Return	Duration	Return	Duration	Return	Duration	Return
0-1	0.74%	25-26	3.45%	50-51	3.71%	75-76	3.79%
2-3	1.20%	27-28	3.49%	52-53	3.72%	77-78	3.80%
4-5	1.73%	29-30	3.52%	54-55	3.73%	79-80	3.80%
6-7	2.16%	31-32	3.55%	56-57	3.74%	81-82	3.81%
8-9	2.49%	33-34	3.58%	58-59	3.74%	83-84	3.81%
10-11	2.74%	35-36	3.60%	60-61	3.75%	85-86	3.81%
12-13	2.93%	37-38	3.62%	62-63	3.76%	87-88	3.82%
14-15	3.06%	39-40	3.63%	64-65	3.76%	89-90	3.82%
16-17	3.17%	41-42	3.65%	66-67	3.77%	91-92	3.82%
18-19	3.25%	43-44	3.66%	68-69	3.77%	93-94	3.83%
20-21	3.32%	45-46	3.68%	70-71	3.78%	95-96	3.83%
22-23	3.38%	47-48	3.69%	72-73	3.79%	97-98	3.83%
24-25	3.42%	49-50	3.70%	74-75	3.79%	99-100	3.84%

COLA/Wage Inflation

	Police	Fire	Teachers	Judges
	<u>Prior Year</u>			
COLA	1.80%	1.80%	1.82%	1.36%
Wage Inflation	1.95% ²	2% ²	2.30%	0.83%

²In the prior valuation the wage inflation assumption for the Police was set to 3.50% in FY 2020 and for the Fire was set to 2.00% in FY 2020 to reflect the most recent contract negotiation.

Longevity Improvement Projection Scale

The mortality projection scale for all plans was updated from Scale MP-2018 to Scale MP-2019.

APPENDIX B

Rationale Methods

Funding Method	<p>SFFAS 5 permits the use of a funding method other than the Aggregate Entry Age Normal method if an explanation is provided and the difference in results are immaterial.</p> <p>The Judges' Plan uses Individual Entry Age Normal method to develop the accrued liability and normal costs. The differences in results between Aggregate and Individual Entry Age Normal methods are very small and the Individual Entry Age Method provides more detail by individual for the movements in the liability.</p> <p>The Police Officers and Firefighters' and the Teachers' Plans use the Projected Unit Credit ("PUC") Method in place of the Entry Age Normal Method ("EAN"). Although the plans do not have future service accruals, the EAN method would defer a portion of past service into the future and thereby generating a normal cost until all actives have decremented. The PUC method better recognizes that all service has been fully accrued by participants, and attributes the anticipated change in compensation to that accrued service. This approach does not defer a portion of past service into the future, and therefore does not generate a normal cost. The PUC method aligns to the annual payment required for the plan under the Balanced Budget Act of 1997 (Pub. Law 105-33).</p>
Interest Rate Application	<p>To calculate the present value of plan members' benefits for the Police Officers and Firefighters', and Teachers' Plans, spot rates were used in accordance with SFFAS 5 and SFFAS 33. For the Judges' Plan, an Effective Interest Rate (EIR) was used. The EIR is the single interest rate calculated to provide the same present value of benefits as the spot rates and allows for the appropriate liability calculation using the Entry Age Normal Funding Method with an active population.</p>

APPENDIX B

Rationale Assumptions

Interest Rates and Economic Assumptions	The underlying interest rate, inflation, Cost-of-Living Adjustment (based on 10-year averages), and wage inflation assumptions (based on the 10-year average of actual negotiated pay increases) were prescribed by the Department of the Treasury, based on their analysis of investments and historical experience, and are intended to comply with SFFAS 5 and 33.
Interest Rates for (Gain)/Loss	The use of EIR for the Judges' Plan produced the same Present Value of Benefits as is produced using the yield curve. For an active plan, the EIR is used for the period of time between plan member entry and the valuation date. The EIR is a good proxy for long term discount rate because it captures the weighted cash flows of the yield curve as a single rate. The use of the first spot rate for the other plans reflects the most relevant expectation of the discount rate over the course of the prior year.
Salary Growth	The underlying salary growth assumptions are based upon expectations of plan experience and the most recent experience study conducted in 2019.
Base Mortality Table	The base mortality tables were adjusted to reflect actual plan experience during the most recent experience study conducted in 2019.
Longevity Improvement Projection Scale	The MP-2019 projection scale reflects the most recently developed mortality improvement outlook from the Society of Actuaries.
Mortality Adjustment from Census Date to Valuation Date	The adjustment to the liability to account for assumed mortality experience during the gap between the census collection date and the valuation date is based on the most recent experience study conducted in 2019.
Disability Rates	Rates of disablement for included actives are based upon expectations of plan experience and the most recent experience study conducted in 2019.
Withdrawal Rates	Rates of withdrawal for included actives are based upon broad termination patterns and expectations of plan experience and the most recent experience study conducted in 2019.
Retirement Rates	Rates of retirement for included actives are based upon broad retirement patterns and expectations of plan experience and the most recent experience study conducted in 2019.
Expenses	The 15-Year Fund projections for all plans use expense projections provided by the Department of the Treasury. Due to the active nature of the Judges' Plan, employee contributions have a further increase factor to account for increases in pay rate for actives.

APPENDIX B

Rationale Assumptions

Spousal Age	The marriage assumptions are based on expectations of plan experience and the most recent experience study conducted in 2019.
Effective Form of Payment Election	The benefit form election assumptions are based on expectations of plan experience and the most recent experience study conducted in 2019.
Open Group Projections	Open group projections are based upon expectations of plan experience.
Benefits Not Valued	<p>The refund of unexpended employee contributions was not valued for the Police Officers and Firefighters' and the Teachers' Plans payable to retirees who died without eligible surviving beneficiaries. The Department of the Treasury is only responsible for the balance as of June 30, 1997 without interest; therefore, this liability, if any, was deemed immaterial.</p> <p>Survivor benefits for the Teachers' Plan are not valued for deferred benefits. The Teachers Plan provides a reduction for Joint-and-Survivor benefits; therefore, the actuarial value of the life annuity is similar to the actuarial value of the Joint-and-Survivor annuity. Surviving children's benefits for active plan members in the Police Officers and Firefighters' Plan are valued indirectly, by assuming a Joint-and-57% Survivor annuity for married plan members.</p> <p>For the Judges' Plan, plan members are due a refund of the portion of their employee contribution balance due to the coverage of a spouse in the event that their spouse predeceases them. This has not been valued to the complexity and low probability of occurrence.</p>

APPENDIX C

Plan Provisions Summary Police Officers and Firefighters' Plan

Plan Year	October 1 - September 30
Eligibility for Participation	All police officers and firefighters of the District of Columbia automatically become plan members on their date of employment. Police Cadets are not eligible.
Contributions	<p>Plan members hired before November 10, 1996 are required to contribute 7% of annual salary, including any differential for special assignment, but excluding overtime, longevity, holiday, or military pay. Plan members hired on or after November 10, 1996 contribute 8% of annual salary, including any differential for special assignment, but excluding overtime, holiday, or military pay. Interest is not credited to each plan member's accumulated contributions.</p> <p>Emerging inactive plan members not eligible for additional benefits will receive a refund of their contributions.</p>
Departmental Service	A plan member receives service for each full year and additional months of employment with either the Metropolitan Police Force or the D.C. Fire Department. Only service earned prior to July 1, 1997 is used to compute the plan benefits.
Credited Service	Service granted or purchased in addition to departmental service.
Final Average Annual Earnings	For those hired before February 15, 1980, basic pay for the highest 12 consecutive months. For those hired on or after February 15, 1980, basic pay for the highest 36 consecutive months divided by three.
Longevity Pay - Police Officers	<p>Plan members who complete 25 years of active service prior to retirement are entitled to have longevity pay included in pensionable compensation.</p> <p>Plan members hired before February 15, 1980, who complete 20 but less than 25 years of active service prior to retirement, are entitled to have longevity pay included in pensionable compensation (as this benefit adjustment was not included in June 30, 1997 plan provisions governing federal benefits, the District funds this benefit adjustment).</p>
Normal form of benefit	Straight Life Annuity (no eligible spouse survivor); Joint-and-Survivor Annuity (eligible spouse survivor)
Optional form of benefit	<p>Optional Additional Survivor Benefit:</p> <p>If elected by the plan member, the retiree benefit is reduced by 10% and the survivor is entitled to an additional survivor benefit equal to the amount of the benefit reduction; except the additional survivor benefit is reduced by 5% for each full five years the survivor is younger than the plan member, with this reduction not to exceed 40%.</p>

APPENDIX C

Plan Provisions Summary Police Officers and Firefighters' Plan

Cost-of-Living Adjustments	<p>Former employees (not beneficiaries) who retired prior to February 15, 1980, receive equalization, defined as a percentage increase in benefits equal to the percentage increase in pay active employees receive.</p> <p>All other retired plan members and their survivors receive an increase April 1 each year based on the annual change in the Consumer Price Index (All Urban Consumers) from December to December. The annual increase will not be less than 0% for any plan member, and is limited to a maximum of 3% for plan members hired on or after November 10, 1996.</p> <p>The cost-of-living adjustment for plan members disabled after June 30, 1997 and not eligible for an optional retirement benefit starts only with the payment of the Federal portion of the benefit at age 55.</p>
<u>Retirement Benefits</u>	
Optional Retirement Date	<p>For plan members hired before November 10, 1996:</p> <ul style="list-style-type: none"> • Age 60; or • Age 50 with 25 years of departmental service; or • No age requirement with 20 years of service (only if hired before February 15, 1980.) <p>For plan members hired on or after November 10, 1996:</p> <ul style="list-style-type: none"> • Age 60; or • No age requirement with 25 years of service.
Optional Retirement Benefit	<p>For plan members hired before November 10, 1996:</p> <ul style="list-style-type: none"> • 2.5% of Average Pay times departmental service up to 25 years (20 years if hired before February 15, 1980), plus • 3.0% of Average Pay times departmental service over 25 (or 20) years, plus • 2.5% of Average Pay times credited service. <p>For plan members hired on or after November 10, 1996:</p> <ul style="list-style-type: none"> • 2.5% of Average Pay times total service. <p>For all plan members, there is a maximum benefit of 80% of Average Pay. Service after June 30, 1997 is excluded from the calculation of the Federal portion of the benefit.</p>
Vesting	5 years of departmental service.
Deferred Vested Benefit	Optional Retirement Benefit beginning at age 55.

APPENDIX C

Plan Provisions Summary Police Officers and Firefighters' Plan

<u>Disability Benefits</u>	
Service-Related Disability Benefit Eligibility	Plan members who are disabled as a result of an illness or injury in the line of duty are eligible for this benefit. If disabled after June 30, 1997 and not eligible for an optional retirement benefit, the Federal portion of this benefit is payable beginning at age 55.
Service-Related Disability Benefit	<p>For plan members hired before February 15, 1980, 2.5% of Average Pay times total years of service, subject to a minimum benefit of 66-2/3% of Average Pay and subject to a maximum benefit of 70% of Average Pay.</p> <p>For plan members hired on or after February 15, 1980, 70% of final pay times percentage of disability, subject to a minimum benefit of 40% of final pay.</p> <p>The Federal portion of this benefit is a deferred vested benefit payable upon attainment of age 55, unless the conditions for optional retirement are met, in which case the Federal portion of this benefit is an optional retirement benefit. Service after June 30, 1997 is excluded from this calculation.</p>
Non-Service-Related Disability Benefit Eligibility	Eligible with 5 years of departmental service and a physical or mental disability that prevents the plan member from performing his/her job. If disabled after June 30, 1997 and not eligible for an optional retirement benefit, the Federal portion of this benefit is payable beginning at age 55.
Non-Service-Related Disability Benefit	<p>For plan members hired before February 15, 1980, 2.0% of Average Pay times total years of service, subject to a minimum benefit of 40% of Average Pay and subject to a maximum benefit of 70% of Average Pay.</p> <p>For plan members hired on or after February 15, 1980, 70% of Final Pay times percentage of disability, subject to a minimum benefit of 30% of Final Pay.</p> <p>The Federal portion of this benefit is a deferred vested benefit payable upon attainment of age 55, unless the conditions for optional retirement are met, in which case the Federal portion of this benefit is an optional retirement benefit. Service after June 30, 1997 is excluded from this calculation.</p>

APPENDIX C

Plan Provisions Summary Police Officers and Firefighters' Plan

<u>Death Benefits</u>	
Lump Sum Death Benefit	Lump sum of \$50,000 payable for death occurring in the line of duty, provided the death is not the result of willful misconduct or by intention to bring about his/her own death.
Survivor Benefit (Spouse Only) - Death Outside Line of Duty after 12/29/93	Eligible upon death and, if retired, married for at least one year or have a child by the marriage. The benefit will be 40% of the greater of Average Pay and the salary for class 1, step 6 of the D.C. Police and Firemen's Salary Act in effect at the date of death, adjusted for cost-of-living increases if death occurs after retirement. The benefit cannot exceed the rate of pay for the position occupied at death (or retirement if death occurs after retirement.)
Survivor Benefit (Spouse Only) - Death In Line of Duty after 12/29/93	Eligible upon death in the line of duty. The benefit will be 100% of final pay. The Federal portion of this benefit is 40% of average pay per June 30, 1997 plan provisions.
Survivor Benefit - Spouse and Dependent Children	<p>Eligibility for the spouse is the same as Spouse Only benefit; for the children, unmarried and under 18 (22 if full-time student), or any child dependent because of a disability incurred before age 18.</p> <p>Spouse benefit as described above, plus, provided death does not occur in the line of duty, a benefit per child (payable until the children are no longer eligible) equal to the smallest of:</p> <ul style="list-style-type: none"> • 60% of Average Pay divided by the number of eligible children; • \$4,344 (\$4,248 if hired on or after November 1, 1996) - Federal portion is \$1,548; or • \$13,032 (\$12,744 if hired on or after November 1, 1996) divided by the number of children - Federal portion is \$4,644. <p>These amounts are increased annually based on cost-of-living adjustments.</p>
Survivor Benefit - Dependent Children Only	Eligibility is same as the Dependent Children benefit above. The benefit will be 75% of Average Pay divided by the number of eligible children, adjusted for cost-of-living increases.
Refund of Contributions	Refund contributions if death before retirement and no eligible spouse or children. All plan member contributions will be refunded to a named, or statutorily-designated if none named, beneficiary.
Changes Since Prior Valuation	None of which we are aware.

APPENDIX C

Plan Provisions Summary Teachers' Plan

Plan Year	October 1 - September 30
Eligibility for Participation	Permanent, temporary, and probationary teachers for the District of Columbia public day schools become plan members automatically on their date of employment. Other employees covered by the Retirement of Public School Teachers Act – including librarians, principals, and counselors – also become plan members on their date of employment. Substitute teachers and employees of the Department of School Attendance and Work Permits are not covered. Some former D.C. teachers working at charter schools are eligible to remain in the Plan.
Contributions	Plan members hired before November 1, 1996 are required to contribute 7% of annual pay. Plan members hired on or after November 1, 1996 contribute 8% of annual pay. Emerging inactive plan members not eligible for additional benefits will receive a refund of their contributions without interest.
School Service	One year of school service is granted for each year of employment with the D.C. public day schools.
Credited Service	Service granted or purchased in addition to school service.
Final Average Annual Earnings	Highest 36 consecutive months of pay, divided by three.
Optional forms of benefit	<p><u>Reduced Annuity with a Maximum Survivor Annuity (to Spouse)</u> The original benefit is reduced by 2.5% of annual pension up to \$3,600, plus 10% of any amount over \$3,600. Spouse will receive 55% of Unreduced Annuity.</p> <p><u>Reduced Annuity with a Partial Survivor Annuity (to Spouse)</u> An annuity with a benefit payable to the spouse of between \$1 up to any amount less than 55% of the Unreduced Annuity. The original benefit is reduced by dividing the amount of the survivor's annuity by 55%, then reducing the original benefit by 2.5% of this amount up to \$3,600, plus 10% of any amount over \$3,600.</p> <p><u>Reduced Annuity with a Survivor Annuity to a Person with an Insurable Interest</u> A joint and 55% survivor annuity with the original benefit reduced 10% plus an additional 5% for each full 5 years, up to 25 years, the survivor is younger, with a total reduction of 40% for any survivor who is 25 or more years younger.</p> <p><u>Reduced Annuity with a Life Insurance Benefit</u> Benefits are reduced to provide a lump sum life insurance benefit to a designated beneficiary.</p>

APPENDIX C

Plan Provisions Summary Teachers' Plan

Cost-of-Living Adjustments	All plan members receive an increase on April 1 each year based on the annual change in the Consumer Price Index (all items – U.S. City average) from December to December. The annual increase will not be less than 0% for any plan member, and is limited to 3.0% for plan members hired on or after November 1, 1996. The cost-of-living adjustment for plan members who become disabled after June 30, 1997 starts only with the payment of the federal portion of the benefit at age 62.
<u>Retirement Benefits</u>	
Voluntary Retirement Date	<p>For plan member hired before November 1, 1996, earliest of:</p> <ul style="list-style-type: none"> • Age 62 with 5 years of school service; • Age 60 with 20 years of total service, including 5 years of school service; • Age 55 with 30 years of total service, including 5 years of school service. <p>For plan member hired on or after November 1, 1996, earliest of:</p> <ul style="list-style-type: none"> • Age 62 with 5 years of school service; • Age 60 with 20 years of total service, including 5 years of school service; • Any age with 30 years of total service, including 5 years of school service.
Voluntary Retirement Benefit	<p>For plan member hired before November 1, 1996:</p> <ul style="list-style-type: none"> • 1.5% of Average Pay times service up to 5 years, plus; • 1.75% of Average Pay times service between 5 and 10 years, plus • 2.0% of Average Pay times service over 10 years. <p>For plan member hired on or after November 1, 1996:</p> <ul style="list-style-type: none"> • 2.0% of Average Pay times service. <p>For all plan members, there is a minimum benefit of 1.0% of Average Pay plus \$25 for each year of service.</p> <p>Service after June 30, 1997 is excluded from the calculation of the Federal portion of the benefit.</p>
Involuntary Retirement Date	<p>Retired involuntarily for reasons other than misconduct or delinquency with:</p> <ul style="list-style-type: none"> • 25 years of total service, including 5 years of school service; or • Age 50 with 20 years of total service, including 5 years of school service.
Involuntary Retirement Amount	Voluntary Retirement Benefit is reduced by 1/6% per month (2% per year) for each full month that the date of retirement precedes age 55.
Vesting	5 years of school service.
Deferred Vested Benefit	The benefit amount is calculated as a Voluntary Retirement Benefit beginning at age 62, based on service earned as of the termination of employment.

APPENDIX C

Plan Provisions Summary Teachers' Plan

<u>Disability Benefits</u>	
Disability Benefit Eligibility	5 years of school service and a physical or mental disability that prevents the plan member from performing the job.
Disability Benefit	Voluntary Retirement benefit, subject to a minimum of the lesser of 40% of Average Pay and the benefit that the plan member would receive, projecting service to age 60. If disabled after June 30, 1997 and not eligible for voluntary retirement, the Federal portion of this benefit is a deferred vested benefit payable upon attainment of age 62. Service after June 30, 1997 is excluded from this calculation.
<u>Death Benefits</u>	
Lump Sum Death Benefit - No Survivor	Teachers who die before retirement and before completing 18 months of school service or who die without an eligible spouse, child, or parent, will receive a lump sum death benefit. The benefit will be a refund of plan member contributions without interest.
Survivor Benefit - Spouse Only	Teachers who die before retirement and were married for at least two years or have a child by the marriage will provide their survivors a benefit. The benefit will be 55% of the Voluntary Retirement benefit subject to minimums.
Survivor Benefit - Spouse and Dependent Children	<p>Eligibility for the spouse is the same as Spouse Only benefit; for the children, unmarried and under 18 (22 if a full-time student); or any child dependent because of a disability incurred before age 18. Death does not have to occur before retirement for the children's benefits. The benefit will be:</p> <p>Spouse benefit as described above, plus a benefit per child (payable until the children are no longer eligible) equal to the smallest of:</p> <ul style="list-style-type: none"> • 60% of Average Pay divided by the number of eligible children; • \$7,380 (if hired before January 1, 1980), \$7,116 (if hired between January 1, 1980 and October 31, 1996), or \$6,948 (if hired on or after November 1, 1996) per child; or • \$22,140 (if hired before January 1, 1980), \$21,348 (if hired between January 1, 1980 and October 31, 1996), or \$20,844 (if hired on or after November 1, 1996) divided by the number of children. <p>These amounts are increased annually based on cost-of-living adjustments.</p>

APPENDIX C

Plan Provisions Summary Teachers' Plan

Survivor Benefit - Dependent Children Only	<p>Eligibility is the same as for the children's benefit when there is a surviving spouse.</p> <p>Benefit Amount</p> <p>Per child (payable until the children are no longer eligible), the smallest of:</p> <ul style="list-style-type: none">• 75% of Average Pay divided by the number of eligible children;• \$9,024 (if hired before January 1, 1980), \$8,688 (if hired between January 1, 1980 and October 31, 1996), or \$8,412 (if hired on or after November 1, 1996) per child; or• \$27,072 (if hired before January 1, 1980), \$26,064 (if hired between January 1, 1980 and October 31, 1996), or \$25,236 (if hired on or after November 1, 1996) divided by the number of children. <p>These amounts are increased annually based on cost-of-living adjustments.</p>
Survivor Benefit - Surviving Parents Only	<p>Eligible if death before retirement and no eligible spouse or children, and parents receive at least one-half of their total income from the plan member. The benefit will be the same as the Surviving Spouse benefit.</p>
Changes Since Prior Valuation	<p>None of which we are aware.</p>

APPENDIX C

Plan Provisions Summary Judges' Plan

Plan Year	October 1 - September 30
Eligibility for Participation	All Judges of the District of Columbia Court of Appeals or the Superior Court are members in the plan. The Executive Officer of the Court System is also eligible.
Contributions	<p>All Judges contribute 3.5% of their salaries to the Fund. Judges electing survivor coverage pay an additional 3.5% of annual salary (or retirement benefit if retired). Plan member contributions for survivor coverage do not end at retirement.</p> <p>Emerging inactive plan members not eligible for additional benefits will receive a refund of their contributions without interest.</p>
Judicial Service	A plan member receives credit for each full year and additional months of employment as a Judge with the District of Columbia Courts.
Credited Service	Service granted or purchased in addition to judicial service.
Cost-of-Living Adjustments	All pensioners will receive cost-of-living increases in line with those applicable to retirees in the Civil Service Retirement System. Cost-of-living adjustments are paid on January 1.
<u>Retirement Benefits</u>	
Regular Retirement Date	<p>Earlier of:</p> <ul style="list-style-type: none"> • Age 50 with 20 years of Judicial Service; or • Age 60 with 10 years of Judicial Service.
Regular Retirement Benefit	<p>Basic salary at retirement times the ratio of Judicial Service to 30, plus An additional benefit for any Credited Service (non Judicial) as follows:</p> <ul style="list-style-type: none"> • 1.50% of basic salary times Credited Service up to 5 years, plus • 1.75% of basic salary times Credited Service from 5 to 10 years, plus • 2.00% of basic salary times Credited Service in excess of 10 years. <p>The maximum total benefit is 80% of basic salary.</p>
Vesting	10 years of Judicial Service.

APPENDIX C

Plan Provisions Summary

Judges' Plan

Mandatory Retirement Date	Mandatory retirement is at age 74.
Early Retirement Eligibility	Age 55 with 10 years of Judicial Service.
Early Retirement Benefit	1/12% per month prior to age 60 reduction in Judicial Service benefit.
Deferred Vested Benefit	The deferred vested benefit is the same as the Early Retirement Benefit beginning at age 55 or the Regular Retirement Benefit beginning at age 60, but only reflecting service to the date of employment termination.
<u>Disability Benefits</u>	
Disability Benefit Eligibility	A plan member is eligible for disability retirement after 5 years of Judicial and Credited Service and becoming physically or mentally disabled to an extent that interferes with proper performance of judicial duties. No service requirement applies to involuntary disability retirement.
Disability Benefit	Regular Retirement Benefit, subject to a minimum of 50% of basic salary (if an involuntary disability retirement).
<u>Death Benefits</u>	
Survivor Benefit Eligibility	Judges who contribute an additional 3.5% of salary during their working career and during retirement will provide a survivor benefit to their surviving spouse and/or children. The judge must also have completed at least 5 years of Judicial and Credited Service, and have been married for 2 years or have a child by marriage. A refund of excess contributions, less benefits paid to the retiree, will be paid if there are no eligible survivors.
Survivor Benefit	<p>Spouse Benefit: If judge was retired, 55% of the benefit the judge was receiving. If judge was active, 55% of the benefit the judge would have received had the judge retired on the day prior to death, not less than 55% of the benefit that would be provided to a judge with 15 years of Judicial Service without adjustment for early retirement.</p> <p>Dependent Children Benefit: A benefit will be paid to the children under the age of 18 (22 if full time student), or to any unmarried child incapable of self-support due to a disability which occurred before age 18. Benefit per child is the smallest of:</p> <ul style="list-style-type: none"> • 50% of the spouse's annuity • \$6,464.88 (\$7,759.08 if no spouse benefits apply) as of 12/01/2019, increased annually • \$19,394.64 (\$23,277.24 if no spouse benefits apply) divided by the number of children as of 12/01/2019, increased annually.
Changes Since Prior Valuation	None of which we are aware.