



United States Department of the Treasury District of Columbia Pensions Program

Actuarial Valuation Report

Valuation Date: October 1, 2021
Measurement Date: September 30, 2021
Report Date: October 21, 2021

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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) 2021 (October 1, 2020 through September 30, 2021);
- 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 2022 (October 1, 2021 through September 30, 2022); 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, 2021	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
Actuarial Accrued Liability	\$ 7,778,784,800	\$ 276,422,364
Plan Assets	<u>(3,952,499,961)</u>	<u>(190,105,319)</u>
Unfunded Actuarial Accrued Liability	\$ 3,826,284,839	\$ 86,317,045
Normal Cost with Interest (including expected employee contributions)	N/A	\$ 6,200,000

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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	\$ (487,082)	\$ (1,040,427)
Inactive Mortality	(33,867,078)	3,137,968
Salary Increase	(3,210,340)	60,902
New Entrants	N/A	-
Cost-of-Living Adjustment (COLA) Different than Expected	(29,740,798)	(535,717)
(Gains)/Losses due to Census Changes:	22,465,508	27,377
(Gains)/Losses due to New Terminated Vested Plan Members:	1,946,540	N/A
(Gains) / Losses due to New Actives Due to Ongoing Data Management:	487,534	-
Total	\$ (42,405,716)	\$ 1,650,103

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 fewer retirements than expected for the Teachers. 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 and in greater number than expected in the past year. For the Judges' Plan there were four deaths since the prior year, which was less than expected, resulting in a loss. 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. The gain for the Police Officers and Firefighters' and Teachers' Plans is due in part to the fact that there was no collectively bargained pay increase.
- **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 did have one new entrant but the individual did not join with past service, therefore there is no (gain) or loss.
- **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 gain due to lower actual COLA percentages than expected. The Judges' Plan had a gain due to lower COLA than expected.
- **(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 \$22.5 million and includes the following:

- A \$20.1 million loss resulting from new beneficiaries following the death of plan members for whom the chosen form of payment was unknown.
- A \$4.2 million gain 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 \$3.9 million net loss resulting from ongoing data management, including unexpected changes to data fields such as hire date, salary, service, etc.
- A \$2.5 million loss resulting from data updates for continuing inactive plan members, primarily due to recalculation of benefit amounts in the census data.
- A \$0.2 million loss resulting from rehires.

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Highlights of the Actuarial Valuation

For the **Judges' Plan**, the total loss amount of \$27,000 includes the following:

- A \$127,000 net gain resulting from active plan members who retired or terminated within the past year, primarily due to benefits calculated at retirement different than previously estimated.
- A \$78,000 net loss resulting from ongoing data management, including unexpected changes to data fields such as hire date, salary, service, etc.
- A \$40,000 loss resulting from data updates for continuing inactive plan members, primarily due to recalculation of benefit amounts in the census data.
- A \$36,000 loss resulting from new beneficiaries following the death of plan members.

• **(Gains)/Losses due to New Terminated Vested Plan Members:** There were 39 new terminated vested plan members discovered as a result of a data clean-up initiative performed by the program. This caused a \$1.9 million loss to the Police Officers and Firefighters' and Teachers' Plans.

• **(Gains)/Losses due to New Actives as a Result of Ongoing Data Management:** There were 5 new active plan members discovered as a result of a data clean-up initiative performed by the program. This caused a \$488,000 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	\$ 3,870,858,529	\$ 182,824,303
Expected Return on Assets	29,480,387	5,104,936
Actual Return on Assets	<u>55,402,676</u>	<u>3,335,806</u>
Asset (Gain)/Loss	\$ (25,922,289)	\$ 1,769,130

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

	D.C. Federal Pension Fund	Judicial Retirement Fund
Assets	1.43%	1.81%

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 2.91% 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, 0.82%. The Judicial Retirement Fund experienced a lower-than-anticipated return of 1.81% on fund assets and the D.C. Federal Pension Fund experienced a higher-than-anticipated return of 1.43% 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	\$ 329,458,900	\$ 7,560,413
Other Economic Assumptions	(10,819,840)	3,741,122
Non-Economic Assumptions	(79,599,689)	(3,411,890)
Total	\$ 239,039,371	\$ 7,889,645

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

For the Police Officers and Firefighters' and Teachers' Plans, the cost-of-living adjustment (COLA) for annuitants was the only other economic assumption change; the review of the wage inflation assumption resulted in no change to the assumption for these plans. For Judges' Plan, the other economic assumption changes were the COLA for annuitants and the salary increase assumption for active plan members. 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 MP2020 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.

Executive Summary

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 2022 (excluding the reimbursement for expenses). The table below contains Government Contribution (excluding expenses) for FY 2021 and FY 2022.

Contribution Year	Government Contribution (excluding expenses)	
	D.C. Federal Pension Fund	Judiciary Retirement Fund
September 30, 2021	\$ 558,700,000	\$ 18,300,000
September 30, 2022	\$ 520,900,000	\$ 18,300,000

The increase/(decrease) in the Government Contribution amounts from FY2021 to FY2022 is explained in the table below.

	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan
Full amortization of the 10/1/2001 Assumption change gain/loss	\$ (40,100,000)	\$ (500,000)
Full amortization of the 10/1/2001 Plan Change gain/loss	\$ (16,000,000)	N/A
Full amortization of the 10/1/2011 Experience gain/loss	\$ 16,200,000	\$ (100,000)
New amortization base for the 10/1/2021 Experience gain/loss	(7,500,000)	400,000
New amortization base for the 10/1/2021 Assumption change gain/loss	9,600,000	400,000
Normal Cost change	-	(200,000)
Employee Contribution change	-	-
Total	\$ (37,800,000)	\$ -

Executive Summary

Actuarial Valuation Opinion

This report presents the results of the actuarial valuation of the Program as of October 1, 2021. 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, 2021 (plan data was projected to September 30, 2021 by adjusting for expected mortality for inactive plan members) and the estimated asset information projected by the Department of the Treasury to September 30, 2021 (provided on August 4, 2021).

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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Executive Summary

Summary of Results

Police Officers and Firefighters', and Teachers' Plans

	Valuation Date	
	October 1, 2021	October 1, 2020
Plan Member Counts		
Actives	803	1,024
Terminated Vested	269	244
Annuitants	<u>13,187</u>	<u>13,345</u>
Total	14,259	14,613
Contributions		
Federal Required Contribution	\$ 520,900,000	\$ 558,700,000
Present Value of Benefits (PVB)		
Active Plan Members		
Retirement Decrement	\$ 261,499,178	\$ 358,866,503
Termination Decrement	-	-
Disability Decrement	838,561	1,168,243
Death Decrement	<u>341,683</u>	<u>494,825</u>
Total	\$ 262,679,422	\$ 360,529,571
Inactive Plan Members		
Normal Retirees ¹	\$ 6,053,132,279	\$ 6,195,482,251
Terminated Vested	37,234,971	37,732,770
Disabled Retirees ¹	646,661,754	690,435,989
Beneficiaries	<u>779,076,374</u>	<u>766,366,380</u>
Total	\$ 7,516,105,378	\$ 7,690,017,390
Total PVB (inactive and active)	\$ 7,778,784,800	\$ 8,050,546,961
Unfunded Actuarial Accrued Liability (AAL)		
Active AAL	\$ 262,679,422	\$ 360,529,571
Inactive AAL	<u>7,516,105,378</u>	<u>7,690,017,390</u>
Total AAL	\$ 7,778,784,800	\$ 8,050,546,961
Asset Value as of Valuation Date	\$ (3,952,499,961)	\$ (3,870,858,529)
Unfunded AAL	\$ 3,826,284,839	\$ 4,179,688,432

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, 2021	October 1, 2020
Plan Member Counts		
Actives	57	61
Terminated Vested	-	-
Annuitants	<u>103</u>	<u>101</u>
Total	160	162
Contributions		
Government Contribution (excluding expenses)	\$ 18,300,000	\$ 18,300,000
Present Value of Benefits (PVB)		
Active Plan Members		
Retirement Decrement	\$ 137,957,809	\$ 136,533,697
Termination Decrement	-	-
Disability Decrement	-	-
Death Decrement	<u>727,995</u>	<u>733,431</u>
Total	\$ 138,685,804	\$ 137,267,128
Inactive Plan Members		
Normal Retirees ¹	\$ 181,812,743	\$ 173,986,119
Terminated Vested	-	-
Disabled Retirees ¹	2,099,448	2,052,526
Beneficiaries	<u>9,866,579</u>	<u>9,566,351</u>
Total	\$ 193,778,770	\$ 185,604,996
Total PVB (inactive and active)	\$ 332,464,574	\$ 322,872,124
Unfunded Actuarial Accrued Liability (AAL)		
Active AAL	\$ 82,643,594	\$ 82,271,955
Inactive AAL	<u>193,778,770</u>	<u>185,604,996</u>
Total AAL	\$ 276,422,364	\$ 267,876,951
Asset Value as of Valuation Date	\$ (190,105,319)	\$ (182,824,303)
Unfunded AAL	\$ 86,317,045	\$ 85,052,648
Total Normal Cost	\$ 6,200,000	\$ 6,400,000
Employee Contributions	<u>(600,000)</u>	<u>(600,000)</u>
Net Employer Normal Cost	\$ 5,600,000	\$ 5,800,000

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.

ODCP mitigates interest rate risk by attempting to match asset and liability cash flows. However, the inability to match cash flows due to the limited nature of the available durations of Treasury securities could introduce risk to the Funds.

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
9/30/2021	3.49%	42.65%
9/30/2020	4.69%	44.33%
9/30/2019	6.09%	47.15%
9/30/2018	6.75%	48.91%
9/30/2017	8.17%	50.92%
9/30/2016	9.63%	55.65%
9/30/2015	11.83%	57.09%
9/30/2014	12.71%	50.49%
9/30/2013	13.88%	51.73%
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

Year	Ratio of Active to Inactive Participant Headcount					Judges	Total
	Police	Fire	Teacher	Subtotal	Total		
5/1/2021	4.70%	12.98%	4.91%	5.97%	55.34%	6.34%	
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%	

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
5/1/2021	6,096	1,909	5,182	13,187	103	13,290
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

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
5/1/2021	3,410	1,047	1,603	6,060	103	6,163
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

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
5/1/2021	2,686	862	3,579	7,127	N/A	7,127
5/1/2020	2,561	821	3,598	6,980	N/A	6,980
5/1/2019	2,401	766	3,608	6,775	N/A	6,775
5/1/2018	2,273	722	3,585	6,580	N/A	6,580
5/1/2017	2,109	672	3,537	6,318	N/A	6,318
5/1/2016	1,925	622	3,499	6,046	N/A	6,046
5/31/2015	1,653	586	3,427	5,666	N/A	5,666
5/31/2014	1,480	559	3,339	5,378	N/A	5,378
5/31/2013	1,367	519	3,227	5,113	N/A	5,113
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 Net Assets Available for Benefits¹ (\$ millions) in each plan for the current and prior years.

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	Total
9/30/2021	\$3,952.5	\$190.1	\$4,142.6
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

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	Total
9/30/2021	\$7,778.8	\$276.4	\$8,055.2
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

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	Total
9/30/2021	\$3,826.3	\$86.3	\$3,912.6
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

Assessment of Risk

Funded Ratio

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

Year	Police Officers and Firefighters', and Teachers' Plans	Judges' Plan	Total
9/30/2021	50.8%	68.8%	51.4%
9/30/2020	48.1%	68.2%	48.7%
9/30/2019	46.7%	69.4%	47.4%
9/30/2018	46.8%	66.5%	47.4%
9/30/2017	45.4%	65.6%	46.0%
9/30/2016	45.1%	67.4%	45.7%
9/30/2015	45.6%	68.6%	46.1%
9/30/2014	43.9%	67.1%	44.5%
9/30/2013	43.8%	75.4%	44.4%
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	Total
FY 2021	\$520.9	\$18.3	\$539.2
FY 2020	\$558.7	\$18.3	\$577.0
FY 2019	\$520.3	\$15.5	\$535.8
FY 2018	\$477.6	\$16.1	\$493.7
FY 2017	\$451.8	\$15.6	\$467.4
FY 2016	\$452.2	\$15.6	\$467.8
FY 2015	\$460.9	\$14.2	\$475.1
FY 2014	\$487.5	\$14.2	\$501.7
FY 2013	\$467.3	\$10.5	\$477.8
FY 2012	\$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	Total
FY 2021	\$532.2	\$15.0	\$547.2
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

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 2021	1.4%	1.8%
FY 2020	1.8%	2.1%
FY 2019	1.8%	2.2%
FY 2018	1.5%	2.3%
FY 2017	1.4%	2.3%
FY 2016	1.0%	2.4%
FY 2015	0.8%	2.2%
FY 2014	1.3%	2.1%
FY 2013	1.3%	2.2%
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	Total
FY 2021	\$57.0	\$3.4	\$60.4
FY 2020	\$66.6	\$3.7	\$70.3
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

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 2021	0.8% - 3.3%	1.4%	0.8% - 3.3%	1.8%
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%

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.

Year	Police Officers and Firefighters', and Teachers' Plans			Judges Plan		
	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
9/30/2021	(\$25.9)	(\$42.4)	\$239.0	\$1.8	\$1.7	\$7.9
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

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 2021	1.7% - 1.8%	2.15% - 2.20%	2.3%	1.0%
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%

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, 2021
Initial Unfunded Accrued Liability	6	\$ 348,600,000	1,996,246,306
Assumption Change 10/1/2004	3	13,700,000	40,300,293
Assumption Change 10/1/2005	4	(6,300,000)	(24,515,028)
Assumption Change 10/1/2006	5	39,800,000	191,835,682
Assumption Change 10/1/2007	6	3,600,000	20,615,280
Assumption Change 10/1/2008	7	3,300,000	21,809,931
Assumption Change 10/1/2009	8	40,700,000	303,917,513
Assumption Change 10/1/2010	9	10,500,000	87,153,502
Assumption Change 10/1/2011	10	6,900,000	62,850,132
(Gain)/Loss 10/1/2012	1	500,000	496,032
Assumption Change 10/1/2012	11	32,500,000	321,504,709
(Gain)/Loss 10/1/2013	2	(9,900,000)	(19,541,752)
Assumption Change 10/1/2013	12	18,700,000	199,189,742
Funding Method Change 10/1/2013	12	(34,800,000)	(370,684,654)
(Gain)/Loss 10/1/2014	3	(6,900,000)	(20,297,228)
Assumption Change 10/1/2014	13	13,400,000	152,592,167
(Gain)/Loss 10/1/2015	4	(7,000,000)	(27,238,920)
Assumption Change 10/1/2015	14	(4,000,000)	(48,396,321)
(Gain)/Loss 10/1/2016	5	(10,000,000)	(48,199,920)
Assumption Change 10/1/2016	15	20,600,000	263,423,080
Method Change 10/1/2016	15	500,000	6,393,764
(Gain)/Loss 10/1/2017	6	1,500,000	8,589,700
Assumption Change 10/1/2017	16	5,000,000	67,269,175
(Gain)/Loss 10/1/2018	7	2,400,000	15,861,768
Assumption Change 10/1/2018	17	(1,600,000)	(22,556,939)
(Gain)/Loss 10/1/2019	8	(2,100,000)	(15,681,248)
Assumption Change 10/1/2019	18	26,300,000	387,175,509
(Gain)/Loss 10/1/2020	9	900,000	7,470,300
Assumption Change 10/1/2020	19	12,000,000	183,891,432
(Gain)/Loss 10/1/2021	10	(7,500,000)	(68,328,005)
Assumption Change 10/1/2021 ¹	20	9,600,000	153,138,837
Total Amortization		\$ 520,900,000	\$ 3,826,284,839
Total Normal Cost with Interest		\$ -	
Employee Contributions		-	
Net Employer Normal Cost		\$ -	
Total Required Government Contribution as of September 30, 2021²		\$ 520,900,000	

¹ Includes assumption change impact, \$239,039,371, as well as effect of discount rate change on prior amortization balances, (\$85,900,534).

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, 2021
Initial Unfunded Accrued Liability	6	\$ 2,100,000	\$ 11,509,259
Assumption Change 10/1/2004	3	200,000	569,551
Assumption Change 10/1/2006	5	600,000	2,775,501
Assumption Change 10/1/2008	7	200,000	1,262,659
Assumption Change 10/1/2009	8	(800,000)	(5,699,598)
Assumption Changes 10/1/2010	9	1,500,000	11,872,136
Assumption Changes 10/1/2011	10	100,000	868,461
(Gain)/Loss 10/1/2012	1	(400,000)	(389,674)
Assumption Changes 10/1/2012	11	600,000	5,660,759
(Gain)/Loss 10/1/2013	2	800,000	1,538,575
Assumption Changes 10/1/2013	12	400,000	4,066,088
Funding Method Change 10/1/2013	12	(1,000,000)	(10,165,220)
(Gain)/Loss 10/1/2014	3	2,900,000	8,258,485
Assumption Change 10/1/2014	13	200,000	2,175,396
(Gain)/Loss 10/1/2015	4	100,000	374,842
Assumption Change 10/1/2016	15	300,000	3,673,755
Method Change 10/1/2016	15	500,000	6,122,925
(Gain)/Loss 10/1/2017	6	400,000	2,192,240
Assumption Change 10/1/2017	16	800,000	10,323,117
(Gain)/Loss 10/1/2018	7	700,000	4,419,308
Assumption Change 10/1/2018	17	100,000	1,354,496
(Gain)/Loss 10/1/2019	8	700,000	4,987,149
Assumption Change 10/1/2019	18	(400,000)	(5,667,786)
(Gain)/Loss 10/1/2020	9	700,000	5,540,330
Assumption Change 10/1/2020	19	600,000	8,866,711
(Gain)/Loss 10/1/2021	10	400,000	3,419,233
Assumption Change 10/1/2021 ¹	20	400,000	6,408,347
Total Amortization		\$ 12,700,000	\$ 86,317,045
Total Normal Cost with Interest		\$ 6,200,000	
Employee Contributions		(600,000)	
Net Employer Normal Cost		\$ 5,600,000	
Total Required Government Contribution as of September 30, 2021²		\$ 18,300,000	

¹ Includes assumption change impact, \$7,889,645, as well as effect of discount rate change on prior amortization balances, (\$1,481,298).

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, 2020, before adjustments	\$	3,870,858,529	\$	182,824,303
As of October 1, 2020, after adjustments		3,868,116,180		182,748,496
Contributions:				
Employees ¹	\$	(233,079)	\$	625,531
Employer		577,850,550		18,739,089
Total		577,617,471		19,364,620
Benefits Paid		(532,228,165)		(14,980,321)
Expenses Paid		(19,150,550)		(439,089)
Income (including adjustments) ¹		55,402,676		3,335,806
Expected Income		29,480,387		5,104,936
Expected End of Year Value		3,926,577,672		191,874,449
October 1, 2021 (Projected) Value		3,952,499,961		190,105,319
Asset (Gain)/Loss	\$	(25,922,289)	\$	1,769,130
Liabilities				
October 1, 2020 AAL	\$	8,050,546,960	\$	267,876,951
Normal Cost:				
Employees		-		600,000
Employers		-		5,800,000
Total		-		6,400,000
Benefits Paid		(532,228,165)		(14,980,321)
Interest		63,832,350		7,585,986
Expected September 30, 2021 AAL		7,582,151,145		266,882,616
Actual September 30, 2021 AAL before assumption and method changes ²		7,539,745,429		268,532,719
Liability (Gain)/Loss		(42,405,716)		1,650,103
Total Experience (Gain)/Loss	\$	(68,328,005)	\$	3,419,233

Summary of Changes in Assumptions and Methods

(Gains)/Losses	Police Officers and Firefighters', and Teachers' Plans		Judges' Plan	
Change in Discount Rate		329,458,900		7,560,413
Change in Other Economic Assumptions ³		(10,819,840)		3,741,122
Change in Non-Economic Assumptions ⁴		(79,599,689)		(3,411,890)
Total Impact	\$	239,039,371	\$	7,889,645
Actual End of Year AAL after assumption and method changes	\$	7,778,784,800	\$	276,422,364

¹ Employee contributions include purchase of service installment payments. Actual income includes unexpended contributions expense adjustment.

² Liabilities as of October 1, 2021 for the Police Officers and Firefighters', and Teachers' Plans calculated for this purpose are based on 2021 spot rates implied by the 2020 spot rate yield curve. These spot rates used in gain/loss analysis were calculated by converting the 2020 spot rates to forward rates, removing the forward rate for FY 2021, and then converting the forward rates back to spot rates. See Appendix A: Actuarial Assumptions and Methods for an example of the rates.

³ Projected COLA.

⁴ 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, 2021, as provided by the Department of the Treasury on August 4, 2021.

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, 2020	\$ 3,870,858,529	\$ 182,824,303
Adjusted from estimate to actual	<u>(2,742,349)</u>	<u>(75,807)</u>
Actual net assets available as of October 1, 2020	\$ 3,868,116,180	\$ 182,748,496
Additions		
Unexpended contributions expense adjustment ¹	\$ 949,918	\$ -
Contributions:		
Government contributions (amortization payment)	577,850,550	18,739,089
Employee contributions	-	625,531
Purchase of service installment payments ¹	<u>(233,079)</u>	<u>-</u>
Total contributions	\$ 577,617,471	\$ 19,364,620
Investment income (including interest) ²	56,963,156	3,399,406
Miscellaneous additions	<u>231,951</u>	<u>12,208</u>
Total additions	\$ 635,762,496	\$ 22,776,233
Deductions		
Benefit payments:		
Annuities - Federal only	\$ (532,217,886)	\$ (14,980,321)
Refunds of contributions	<u>(10,279)</u>	<u>-</u>
Total benefit payments	\$ (532,228,165)	\$ (14,980,321)
Expenses and fees:		
Administrative expenses	\$ (20,346,803)	\$ (439,089)
Other expenses	<u>1,196,253</u>	<u>-</u>
Total expenses and fees	\$ (19,150,550)	\$ (439,089)
Total deductions	\$ (551,378,715)	\$ (15,419,410)
Net additions/(deductions)	\$ 84,383,781	\$ 7,356,824
Net assets available for benefits as of October 1, 2021	<u>\$ 3,952,499,961</u>	<u>\$ 190,105,319</u>

¹ The unexpended contributions expense adjustment is a District of Columbia Retirement Board (DCRB) expense liquidation and the purchase of service installment payments is a DCRB payable. Both are one time adjustments.

² The approximate rate of return on the Market Value of Assets is 1.43% for the Police Officers and Firefighters', and Teacher's Plans, and 1.81% 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
2022	\$ 531,203,113	2060	\$ 31,595,993
2023	524,712,333	2061	27,042,198
2024	516,655,684	2062	22,936,974
2025	507,270,540	2063	19,269,403
2026	496,565,761	2064	16,027,079
2027	484,565,016	2065	13,194,220
2028	471,521,195	2066	10,750,654
2029	457,510,188	2067	8,671,627
2030	442,556,888	2068	6,927,886
2031	426,716,347	2069	5,486,554
2032	410,143,533	2070	4,312,569
2033	392,835,720	2071	3,370,038
2034	374,905,741	2072	2,623,625
2035	356,466,002	2073	2,039,901
2036	337,634,344	2074	1,588,323
2037	318,534,952	2075	1,241,875
2038	299,310,403	2076	977,440
2039	280,102,351	2077	775,846
2040	261,059,932	2078	621,634
2041	242,334,181	2079	502,731
2042	224,072,745	2080	409,937
2043	206,413,469	2081	336,430
2044	189,478,044	2082	277,286
2045	173,366,376	2083	228,987
2046	158,152,590	2084	189,078
2047	143,882,463	2085	155,847
2048	130,573,794	2086	128,043
2049	118,218,499	2087	104,775
2050	106,786,688	2088	85,329
2051	96,232,045	2089	69,137
2052	86,497,869	2090	55,723
2053	77,523,013	2091	44,654
2054	69,246,553	2092	35,549
2055	61,611,548	2093	28,083
2056	54,567,919	2094	21,984
2057	48,073,703	2095	17,024
2058	42,095,783	2096	13,017
2059	36,609,351		

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
2022	\$ 255,487,967	2060	\$ 21,771,190
2023	254,406,759	2061	18,672,187
2024	252,604,836	2062	15,852,595
2025	250,134,438	2063	13,316,925
2026	246,964,773	2064	11,066,387
2027	243,098,285	2065	9,097,187
2028	238,660,186	2066	7,399,932
2029	233,665,745	2067	5,959,756
2030	228,134,173	2068	4,756,900
2031	222,047,125	2069	3,767,853
2032	215,455,117	2070	2,966,901
2033	208,397,404	2071	2,327,535
2034	200,882,699	2072	1,823,754
2035	192,949,629	2073	1,431,229
2036	184,648,580	2074	1,128,045
2037	176,034,870	2075	895,152
2038	167,172,141	2076	716,548
2039	158,130,137	2077	579,222
2040	148,985,709	2078	472,881
2041	139,820,951	2079	389,603
2042	130,720,162	2080	323,447
2043	121,765,932	2081	270,062
2044	113,035,164	2082	226,304
2045	104,595,413	2083	189,933
2046	96,501,350	2084	159,375
2047	88,792,573	2085	133,507
2048	81,493,013	2086	111,500
2049	74,611,421	2087	92,759
2050	68,143,081	2088	76,800
2051	62,072,622	2089	63,240
2052	56,377,603	2090	51,763
2053	51,032,274	2091	42,079
2054	46,010,840	2092	33,930
2055	41,290,330	2093	27,102
2056	36,852,658	2094	21,413
2057	32,685,427	2095	16,705
2058	28,782,480	2096	12,846
2059	25,143,274		

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
2022	\$ 92,548,673	2060	\$ 7,304,252
2023	91,845,000	2061	6,318,986
2024	90,662,020	2062	5,426,204
2025	89,148,132	2063	4,621,676
2026	87,341,809	2064	3,901,284
2027	85,283,421	2065	3,261,174
2028	83,020,263	2066	2,697,597
2029	80,587,567	2067	2,206,786
2030	77,996,032	2068	1,784,638
2031	75,275,475	2069	1,426,538
2032	72,441,877	2070	1,127,339
2033	69,514,584	2071	881,339
2034	66,515,916	2072	682,404
2035	63,466,380	2073	524,160
2036	60,388,582	2074	400,283
2037	57,304,900	2075	304,713
2038	54,236,154	2076	231,888
2039	51,200,949	2077	176,892
2040	48,215,397	2078	135,534
2041	45,292,751	2079	104,414
2042	42,443,252	2080	80,844
2043	39,674,442	2081	62,778
2044	36,991,490	2082	48,745
2045	34,397,685	2083	37,689
2046	31,895,162	2084	28,889
2047	29,485,457	2085	21,866
2048	27,169,857	2086	16,275
2049	24,949,721	2087	11,868
2050	22,826,737	2088	8,450
2051	20,802,917	2089	5,856
2052	18,880,505	2090	3,939
2053	17,061,813	2091	2,565
2054	15,348,895	2092	1,614
2055	13,743,081	2093	978
2056	12,244,826	2094	570
2057	10,853,674	2095	319
2058	9,568,191	2096	170
2059	8,386,083		

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
2022	\$ 183,166,473	2060	\$ 2,520,552
2023	178,460,574	2061	2,051,025
2024	173,388,828	2062	1,658,174
2025	167,987,969	2063	1,330,801
2026	162,259,179	2064	1,059,407
2027	156,183,310	2065	835,859
2028	149,840,746	2066	653,125
2029	143,256,877	2067	505,085
2030	136,426,684	2068	386,348
2031	129,393,747	2069	292,164
2032	122,246,539	2070	218,329
2033	114,923,731	2071	161,163
2034	107,507,126	2072	117,468
2035	100,049,994	2073	84,511
2036	92,597,183	2074	59,995
2037	85,195,182	2075	42,010
2038	77,902,108	2076	29,004
2039	70,771,265	2077	19,732
2040	63,858,826	2078	13,219
2041	57,220,479	2079	8,714
2042	50,909,331	2080	5,645
2043	44,973,095	2081	3,590
2044	39,451,389	2082	2,237
2045	34,373,277	2083	1,365
2046	29,756,078	2084	814
2047	25,604,433	2085	473
2048	21,910,925	2086	268
2049	18,657,357	2087	148
2050	15,816,870	2088	79
2051	13,356,506	2089	41
2052	11,239,761	2090	21
2053	9,428,926	2091	10
2054	7,886,817	2092	5
2055	6,578,137	2093	2
2056	5,470,435	2094	1
2057	4,534,602	2095	1
2058	3,745,112	2096	0
2059	3,079,994		

Benefit Payments and Funding Projections

Benefit Payment Projections

Judges' Plan (open group)

Fiscal Year Ending In	Expected Net Benefit Payments ¹
2022	\$ 15,482,923
2023	15,861,332
2024	16,076,566
2025	16,017,683
2026	16,112,566
2027	16,081,545
2028	16,163,935
2029	16,165,248
2030	16,456,262
2031	16,507,077
2032	16,503,037
2033	16,290,993
2034	16,144,055
2035	15,948,952
2036	15,742,888
2037	15,520,944
2038	15,486,314
2039	15,335,071
2040	15,138,545
2041	15,209,967
2042	14,988,832
2043	14,881,662
2044	14,739,180
2045	14,610,316
2046	14,496,407

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
2022	\$ 15,482,923	2060	\$ 4,064,300
2023	15,861,278	2061	3,705,362
2024	16,076,365	2062	3,366,898
2025	16,017,239	2063	3,048,059
2026	16,111,795	2064	2,747,917
2027	16,080,353	2065	2,465,880
2028	16,162,401	2066	2,201,345
2029	16,162,855	2067	1,953,987
2030	16,452,435	2068	1,723,813
2031	16,501,264	2069	1,510,662
2032	16,494,873	2070	1,314,370
2033	16,259,986	2071	1,134,786
2034	16,070,510	2072	971,687
2035	15,817,952	2073	824,628
2036	15,519,508	2074	693,182
2037	15,166,696	2075	576,727
2038	14,805,998	2076	474,567
2039	14,329,104	2077	385,970
2040	13,831,782	2078	310,010
2041	13,628,696	2079	245,634
2042	13,069,846	2080	191,780
2043	12,607,124	2081	147,401
2044	12,074,354	2082	111,398
2045	11,536,993	2083	82,689
2046	10,940,150	2084	60,215
2047	10,401,384	2085	42,970
2048	9,810,900	2086	30,014
2049	9,230,863	2087	20,496
2050	8,777,353	2088	13,667
2051	8,272,723	2089	8,889
2052	7,721,877	2090	5,634
2053	7,190,097	2091	3,476
2054	6,678,353	2092	2,087
2055	6,187,479	2093	1,222
2056	5,718,266	2094	695
2057	5,271,232	2095	384
2058	4,846,634	2096	206
2059	4,444,469		

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
2021	244.5

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
2022	0.80%	\$ 3,952,499,961	\$ 549,900,000	\$ (531,203,113)	\$ (29,000,000)	\$ 29,379,187	\$ 3,971,576,035
2023	1.04%	3,971,576,035	548,500,000	(524,712,333)	(28,100,000)	38,435,045	4,005,698,747
2024	1.46%	4,005,698,747	557,200,000	(516,655,684)	(26,900,000)	54,551,229	4,073,894,292
2025	1.90%	4,073,894,292	551,000,000	(507,270,540)	(27,500,000)	72,414,153	4,162,537,905
2026	2.25%	4,162,537,905	565,300,000	(496,565,761)	(28,500,000)	87,889,357	4,290,661,501
2027	2.45%	4,290,661,501	536,100,000	(484,565,016)	(29,100,000)	98,981,756	4,412,078,241
2028	2.70%	4,412,078,241	183,000,000	(471,521,195)	(29,700,000)	112,553,540	4,206,410,586
2029	2.84%	4,206,410,586	177,900,000	(457,510,188)	(30,300,000)	112,719,817	4,009,220,215
2030	3.02%	4,009,220,215	139,900,000	(442,556,888)	(30,900,000)	113,744,393	3,789,407,720
2031	3.05%	3,789,407,720	129,100,000	(426,716,347)	(31,500,000)	108,746,542	3,569,037,915
2032	3.14%	3,569,037,915	130,300,000	(410,143,533)	(32,100,000)	105,270,964	3,362,365,346
2033	3.20%	3,362,365,346	98,500,000	(392,835,720)	(32,800,000)	100,915,982	3,136,145,608
2034	3.23%	3,136,145,608	115,200,000	(374,905,741)	(33,400,000)	94,813,161	2,937,853,028
2035	3.37%	2,937,853,028	102,500,000	(356,466,002)	(34,100,000)	92,544,374	2,742,331,400
2036	3.36%	2,742,331,400	107,200,000	(337,634,344)	(34,800,000)	85,979,979	2,563,077,035

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
2022	0.80%	\$ 190,105,319	\$ 552,901	\$ 18,900,000	\$ (15,482,923)	\$ (600,000)	\$ 1,458,722	\$ 194,934,019
2023	1.04%	194,934,019	558,651	19,358,240	(15,861,332)	(600,000)	1,944,887	200,334,465
2024	1.46%	200,334,465	564,461	18,617,086	(16,076,566)	(600,000)	2,809,118	205,648,564
2025	1.90%	205,648,564	570,332	15,576,543	(16,017,683)	(600,000)	3,759,570	208,937,326
2026	2.25%	208,937,326	576,263	15,536,619	(16,112,566)	(600,000)	4,526,728	212,864,370
2027	2.45%	212,864,370	582,256	14,997,320	(16,081,545)	(600,000)	5,025,727	216,788,128
2028	2.70%	216,788,128	588,312	12,558,652	(16,163,935)	(600,000)	5,644,633	218,815,790
2029	2.84%	218,815,790	594,430	11,820,622	(16,165,248)	(700,000)	5,993,141	220,358,735
2030	3.02%	220,358,735	600,612	11,983,237	(16,456,262)	(700,000)	6,394,451	222,180,773
2031	3.05%	222,180,773	606,858	9,846,503	(16,507,077)	(700,000)	6,532,816	221,959,873
2032	3.14%	221,959,873	613,170	9,410,426	(16,503,037)	(700,000)	6,718,422	221,498,854
2033	3.20%	221,498,854	619,547	8,875,015	(16,290,993)	(700,000)	6,834,856	220,837,279
2034	3.23%	220,837,279	625,990	9,540,275	(16,144,055)	(700,000)	6,879,088	221,038,577
2035	3.37%	221,038,577	632,500	9,406,214	(15,948,952)	(700,000)	7,188,426	221,616,765
2036	3.36%	221,616,765	639,078	9,572,838	(15,742,888)	(800,000)	7,187,042	222,472,835

Basis for the Valuation

Plan Member Summary

Police Officers and Firefighters', and Teachers' Plans

	Police Officers	Firefighters	Teachers	Total
Date Of Census Data:	5/1/2021	5/1/2021	5/1/2021	5/1/2021
Plan Member Counts:				
Actives	288	249	266	803
Terminated Vested	26	10	233	269
Normal Retirees ¹ - Current Benefits	3,993	1,198	4,539	9,730
Normal Retirees - Deferred Benefits	5	0	0	5
Beneficiaries	1,341	454	425	2,220
Disabled Retirees - Current Benefits	688	245	205	1,138
Disabled Retirees - Deferred Benefits	<u>69</u>	<u>12</u>	<u>13</u>	<u>94</u>
Total	6,410	2,168	5,681	14,259
Active Plan Member Characteristics:				
Total Pay	\$ 34,375,190	\$ 29,328,963	\$ 30,720,888	\$ 94,425,041
Average Age	52.70	53.75	58.98	55.11
Average Service	28.54	28.55	30.59	29.22
Inactive Plan Member Characteristics:				
<u>Average Age:</u>				
Terminated Vested	54.69	54.10	61.41	60.49
Normal Retirees	67.92	69.67	77.85	72.78
Beneficiaries	75.24	77.91	80.21	76.74
Disabled Retirees	70.83	75.44	77.19	72.92
<u>Total Annual Federal Benefits - Current:</u>				
Normal Retirees	\$ 182,161,330	\$ 64,074,050	\$ 171,271,632	\$ 417,507,011
Beneficiaries	44,556,636	15,340,596	8,510,664	68,407,896
Disabled Retirees	29,601,330	13,036,692	5,580,864	48,218,886
<u>Total Annual Federal Benefits - Deferred:</u>				
Terminated Vested	\$ 328,704	\$ 110,232	\$ 1,354,716	\$ 1,793,652
Normal Retirees	103,092	-	-	103,092
Disabled Retirees	666,312	89,736	90,660	846,708

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
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Date of Census Data	5/1/2021
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Plan Member Counts:

Actives	57
Terminated Vested	0
Normal Retirees ¹	87
Beneficiaries	15
Disabled Retirees	1
Total	160

Active Plan Member Characteristics

Total Compensation for Covered Plan Members	\$ 12,553,600
Average Age	58.64
Average Service	12.02

Inactive Plan Member Characteristics

Average Age

Terminated Vested	N/A
Normal Retirees	77.02
Beneficiaries	83.27
Disabled Retirees	65.42

Total Annual Benefits

Terminated Vested	N/A
Normal Retirees	\$ 13,737,291
Beneficiaries	1,221,810
Disabled Retirees	140,745

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, 2020	1,024	244	9,856	2,186	1,303	14,613
New Plan Members	0	0	0	0	0	0
Rehires	2	(2)	0	0	0	0
Vested Terminations	0	1	(1)	0	0	0
Retirements	(222)	(11)	233	0	0	0
Deaths - Beneficiary	(2)	0	(114)	147	(26)	5
Deaths - No Beneficiary	(4)	0	(240)	(113)	(45)	(402)
Refund of Contributions	0	(1)	0	0	0	(1)
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	(6)	0	(6)
Data Corrections	5	38	1	6	0	50
Plan Members as of May 1, 2021	803	269	9,735	2,220	1,232	14,259

Police Officers

	Actives	Terminated Vested	Normal Retirees	Beneficiaries	Disabled Retirees	Totals
Plan Members as of May 1, 2020	424	30	3,955	1,313	798	6,520
New Plan Members	0	0	0	0	0	0
Rehires	1	(1)	0	0	0	0
Vested Terminations	0	0	0	0	0	0
Retirements	(134)	(3)	137	0	0	0
Deaths - Beneficiary	(2)	0	(57)	81	(17)	5
Deaths - No Beneficiary	(1)	0	(38)	(54)	(24)	(117)
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	0	0	1	6	0	7
Plan Members as of May 1, 2021	288	26	3,998	1,341	757	6,410

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, 2020	298	11	1,195	454	276	2,234
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	(49)	(1)	50	0	0	0
Deaths - Beneficiary	0	0	(26)	33	(7)	0
Deaths - No Beneficiary	0	0	(21)	(32)	(12)	(65)
Refund of Contributions	0	0	0	0	0	0
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	(1)	0	(1)
Data Corrections	0	0	0	0	0	0
Plan Members as of May 1, 2021	249	10	1,198	454	257	2,168

Teachers

	Actives	Terminated Vested	Normal Retirees	Beneficiaries	Disabled Retirees	Totals
Plan Members as of May 1, 2020	302	203	4,706	419	229	5,859
New Plan Members	0	0	0	0	0	0
Rehires	1	(1)	0	0	0	0
Vested Terminations	0	1	(1)	0	0	0
Retirements	(39)	(7)	46	0	0	0
Deaths - Beneficiary	0	0	(31)	33	(2)	0
Deaths - No Beneficiary	(3)	0	(181)	(27)	(9)	(220)
Refund of Contributions	0	(1)	0	0	0	(1)
Disabled	0	0	0	0	0	0
Payments Reinstated/Ceased	0	0	0	0	0	0
Data Corrections	5	38	0	0	0	43
Plan Members as of May 1, 2021	266	233	4,539	425	218	5,681

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, 2020	61	0	85	15	1	162
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	(4)	0	4	0	0	0
Deaths - Beneficiary	0	0	(2)	2	0	0
Deaths - No Beneficiary	0	0	0	(2)	0	(2)
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, 2021	57	0	87	15	1	160

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.	No.	Avg. Comp.	No.	Avg. Comp.	
0 - 39	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
40 - 44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45 - 49	-	-	20	111,825	56	121,273	4	112,285	-	-	-	-	80	118,461	
50 - 54	-	-	26	113,838	71	126,105	30	116,285	-	-	-	-	127	121,274	
55 - 59	-	-	4	113,877	12	115,135	47	118,337	3	118,171	-	-	66	117,477	
60 - 64	-	-	3	110,798	2	101,497	6	114,424	3	129,696	1	132,056	15	116,205	
65 - 69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
70+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
All Ages	-	\$ -	53	\$112,909	141	\$122,903	87	\$117,081	6	\$123,933	1	\$132,056	288	\$119,358	

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.	No.	Avg. Comp.	No.	Avg. Comp.	
0 - 39	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
40 - 44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45 - 49	-	-	1	104,930	35	117,000	12	110,906	-	-	-	-	48	115,225	
50 - 54	-	-	18	103,393	59	116,293	32	134,129	-	-	-	-	109	119,399	
55 - 59	-	-	10	95,205	41	109,610	19	140,762	3	185,764	-	-	73	118,874	
60 - 64	-	-	6	100,526	3	107,201	5	114,388	5	121,829	-	-	19	110,834	
65 - 69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
70+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
All Ages	-	\$ -	35	\$100,606	138	\$114,289	68	\$130,433	8	\$145,805	-	\$ -	249	\$117,787	

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.	No.	Avg. Comp.	No.	Avg. Comp.	
0 - 39	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	
40 - 44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45 - 49	-	-	1	110,179	10	115,006	-	-	-	-	-	-	11	114,567	
50 - 54	-	-	1	110,179	55	113,932	12	124,191	-	-	-	-	68	115,687	
55 - 59	-	-	3	113,402	28	112,418	41	116,003	7	114,230	-	-	79	114,476	
60 - 64	-	-	1	116,408	18	114,577	25	111,895	12	115,332	2	113,294	58	113,564	
65 - 69	-	-	-	-	5	132,259	16	117,019	10	114,371	3	127,044	34	119,366	
70+	-	-	-	-	5	115,163	5	108,097	4	139,007	2	116,409	16	119,071	
All Ages	-	\$ -	6	\$112,829	121	\$114,574	99	\$115,723	33	\$117,676	7	\$120,076	266	\$115,492	

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40 - 44	-	-	3	223,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	223,000	
45 - 49	-	-	2	218,600	2	218,600	1	218,600	-	-	-	-	-	-	-	-	-	-	5	218,600	
50 - 54	-	-	1	218,600	3	223,000	4	218,600	1	218,600	-	-	-	-	-	-	-	-	9	220,067	
55 - 59	-	-	4	218,600	3	223,000	2	218,600	1	218,600	-	-	-	-	-	-	-	-	10	219,920	
60 - 64	-	-	-	-	7	220,486	2	218,600	3	218,600	7	220,629	-	-	-	-	-	-	19	220,042	
65 - 69	-	-	-	-	1	218,600	2	218,600	3	223,000	1	218,600	1	218,600	-	-	-	-	8	220,250	
70+	-	-	-	-	-	-	-	-	-	-	2	225,200	-	-	1	218,600	-	-	3	223,000	
All Ages	#	\$0	10	\$219,920	16	\$221,075	11	\$218,600	8	\$220,250	10	\$221,340	1	\$218,600	1	\$218,600	-	-	57	\$220,239	

Basis for the Valuation

Federal Allocation by Plan

Police Officers and Firefighters', and Teachers' Plans

Active Plan Members	Police Officers		Firefighters		Teachers	
Number	288		249		266	
Average Age	52.70		53.75		58.98	
Average Service	28.54		28.55		30.59	
Average Pay	\$	119,358	\$	117,787	\$	115,492

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	1,731	2,262	453	745	1,201	3,338
Average Age	76.66	61.27	80.26	63.23	86.84	74.62
Average Federal Benefit	\$ 57,462	\$ 36,558	\$ 68,570	\$ 44,311	\$ 48,539	\$ 33,846
Average Total Benefit	\$ 57,462	\$ 80,603	\$ 68,570	\$ 89,174	\$ 48,539	\$ 55,981
Normal Retirees - Deferred Federal Benefit						
Number	N/A	5	N/A	0	N/A	0
Average Age	N/A	52.01	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	\$ 66,214	N/A	N/A	N/A	N/A
Beneficiaries - Current Federal Benefit¹						
Number	1,161	180	399	55	270	155
Average Age	77.96	57.74	80.63	58.14	84.10	73.44
Average Federal Benefit	\$ 34,640	\$ 24,109	\$ 35,063	\$ 24,554	\$ 23,600	\$ 13,798
Average Total Benefit	\$ 34,640	\$ 35,800	\$ 35,063	\$ 42,660	\$ 23,600	\$ 20,124
Disabled Retirees - Current Federal Benefit						
Number	518	170	195	50	132	73
Average Age	76.04	62.26	79.53	64.96	82.02	71.76
Average Federal Benefit	\$ 49,150	\$ 24,363	\$ 57,968	\$ 34,661	\$ 32,387	\$ 17,887
Average Total Benefit	\$ 49,150	\$ 47,145	\$ 57,968	\$ 54,730	\$ 32,387	\$ 37,857
Disabled Retirees - Deferred Federal Benefit						
Number	N/A	69	N/A	12	N/A	13
Average Age	N/A	52.87	N/A	52.40	N/A	58.73
Average Federal Benefit	N/A	\$ 9,657	N/A	\$ 7,478	N/A	\$ 6,974
Average Total Benefit	N/A	\$ 39,891	N/A	\$ 39,143	N/A	\$ 38,860
Terminated Vested - Deferred Federal Benefit						
Number		26		10		233
Average Age		54.69		54.10		61.41
Average Federal Benefit		\$ 12,642		\$ 11,023		\$ 5,814

¹ Includes child beneficiaries.

Basis for the Valuation

Plan Member Counts

Judges' Plan

Active Plan Members	
Number	57
Average Age	58.64
Average Service	12.02
Average Pay	\$ 220,239
Number Eligible to Retire	25

Inactive Plan Members	
Normal Retirees	
Number	87
Average Age	77.02
Average Benefit	\$ 157,900
Spouse Beneficiaries	
Number	14
Average Age	85.26
Average Benefit	\$ 86,710
Disabled Retirees	
Number	1
Average Age	65.42
Average Benefit	\$ 140,745
Child Beneficiaries	
Number	1
Average Age	55.38
Average Benefit	\$ 7,860

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	-	-	416	19,322	82,420
55-59	-	-	718	24,122	77,340
60-64	2	6,186	485	34,102	79,615
65-69	134	48,684	364	54,497	80,436
70-74	627	53,250	220	73,615	88,060
75-79	538	59,266	56	80,051	87,817
80-84	294	62,095	3	94,100	107,856
85-89	114	65,794	-	-	-
90-94	19	86,547	-	-	-
95-100	3	85,800	-	-	-
100 and over	-	-	-	-	-
Total	1,731	\$ 57,462	2,262	\$ 36,558	\$ 80,603

Beneficiaries	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	4	\$ 42,501	21	\$ 2,417	\$ 9,477
35-39	-	-	1	1,680	4,332
40-44	1	32,184	2	8,190	21,498
45-59	2	19,734	3	3,624	28,752
50-54	7	27,909	27	17,095	35,811
55-59	15	37,471	23	18,763	36,982
60-64	54	34,830	35	27,813	41,190
65-69	115	33,727	30	33,702	42,034
70-74	248	33,897	24	35,822	42,185
75-79	242	34,329	12	38,140	42,197
80-84	221	35,047	2	32,478	36,222
85-89	138	36,154	-	-	-
90-94	79	35,602	-	-	-
95-100	31	33,591	-	-	-
100 and over	4	39,021	-	-	-
Total	1,161	\$ 34,640	180	\$ 24,109	\$ 35,800

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	-	-	-	-	-
45-59	-	-	-	-	-
50-54	5	23,045	-	-	-
55-59	9	23,299	72	13,416	39,564
60-64	24	28,405	47	19,052	44,854
65-69	70	41,475	38	41,033	58,906
70-74	136	48,630	9	57,615	63,116
75-79	128	49,040	4	50,631	62,850
80-84	76	57,057	-	-	-
85-89	39	58,882	-	-	-
90-94	26	64,722	-	-	-
95-100	4	68,886	-	-	-
100 and over	1	67,896	-	-	-
Total	518	\$ 49,150	170	\$ 24,363	\$ 47,145

Inactive Police Officers - Deferred Benefits

Terminated Vested	Count	Average Federal Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-49	2	3,474
50-54	16	11,673
55-59	5	12,173
60-64	3	24,708
65-69	-	-
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-100	-	-
100 and over	-	-
Total	26	\$ 12,642

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	-	-	-
45-59	1	6,408	41,184
50-54	4	24,171	72,471
55-59	-	-	-
60-64	-	-	-
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-100	-	-	-
100 and over	-	-	-
Total	5	\$ 20,618	\$ 66,214

Disabled Retirees	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	\$ -
35-39	-	-	-
40-44	-	-	-
45-59	5	4,716	40,205
50-54	55	9,405	39,663
55-59	9	13,939	41,111
60-64	-	-	-
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-100	-	-	-
100 and over	-	-	-
Total	69	\$ 9,657	\$ 39,891

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	-	-	84	18,659	83,612
55-59	-	-	155	25,363	82,920
60-64	-	-	216	37,287	87,528
65-69	11	45,791	177	54,740	89,976
70-74	59	58,705	81	79,119	98,280
75-79	154	66,189	30	102,558	115,290
80-84	148	71,829	2	142,302	153,624
85-89	60	76,520	-	-	-
90-94	18	81,115	-	-	-
95-100	3	73,324	-	-	-
100 and over	-	-	-	-	-
Total	453	\$ 68,570	745	\$ 44,311	\$ 89,174

Beneficiaries	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	7	\$ 19,171	\$ 50,642
35-39	-	-	2	1,938	4,398
40-44	1	30,684	-	-	-
45-59	-	-	1	9,192	43,920
50-54	2	34,362	5	11,741	59,722
55-59	4	29,787	8	13,904	33,846
60-64	10	29,423	7	23,410	41,625
65-69	25	33,375	12	31,611	39,532
70-74	60	34,094	11	38,098	48,048
75-79	78	34,049	2	35,508	37,722
80-84	104	34,291	-	-	-
85-89	49	36,061	-	-	-
90-94	45	38,899	-	-	-
95-100	19	41,351	-	-	-
100 and over	2	36,042	-	-	-
Total	399	\$ 35,063	55	\$ 24,554	\$ 42,660

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	-	-	-	-	-
45-59	-	-	-	-	-
50-54	-	-	-	-	-
55-59	-	-	12	10,283	44,082
60-64	6	24,422	10	20,212	41,934
65-69	24	48,924	18	41,646	59,988
70-74	22	56,494	9	62,333	67,789
75-79	46	58,338	1	96,888	98,304
80-84	54	62,285	-	-	-
85-89	24	58,618	-	-	-
90-94	15	67,277	-	-	-
95-100	3	70,208	-	-	-
100 and over	1	66,564	-	-	-
Total	195	\$ 57,968	50	\$ 34,661	\$ 54,730

Inactive Firefighters - Deferred Benefits

Terminated Vested	Count	Average Federal Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-59	1	13,500
50-54	6	12,966
55-59	1	3,216
60-64	1	10,872
65-69	1	4,848
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-100	-	-
100 and over	-	-
Total	10	\$ 11,023

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	-	-	-
45-59	2	10,242	48,474
50-54	9	6,528	38,295
55-59	1	10,500	28,116
60-64	-	-	-
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-100	-	-	-
100 and over	-	-	-
Total	12	\$ 7,478	\$ 39,143

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	-	-	1	7,236	48,204
55-59	-	-	48	14,642	59,783
60-64	-	-	195	16,775	56,804
65-69	5	13,973	438	23,058	56,754
70-74	24	22,036	1,046	32,917	56,813
75-79	129	38,813	1034	39,970	55,664
80-84	300	52,416	443	39,940	53,972
85-89	390	51,602	108	38,584	50,975
90-94	235	47,611	23	52,139	65,732
95-100	91	47,191	2	38,208	50,688
100 and over	27	50,263	-	-	-
Total	1,201	\$ 48,539	3,338	\$ 33,846	\$ 55,981

Beneficiaries	100% Federal Count	100% Federal Average Benefit	Partial Federal Count	Partial Federal Average Benefit	Partial Federal Average Total Benefit
Under 35	-	\$ -	1	\$ 5,136	\$ 7,212
35-39	-	-	-	-	-
40-44	1	11,004	1	8,448	24,504
45-59	1	9,156	1	7,356	9,156
50-54	2	8,322	-	-	-
55-59	2	5,670	2	7,914	21,048
60-64	6	19,486	18	9,283	17,396
65-69	2	26,790	24	12,455	21,325
70-74	23	21,743	39	15,796	21,990
75-79	40	22,031	38	14,695	19,903
80-84	58	25,391	18	13,829	17,719
85-89	62	23,040	10	17,221	22,933
90-94	47	25,436	2	19,578	23,496
95-100	22	25,640	1	1,176	2,136
100 and over	4	27,816	-	-	-
Total	270	\$ 23,600	155	\$ 13,798	\$ 20,124

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	-	-	-	-	-
45-59	-	-	-	-	-
50-54	-	-	-	-	-
55-59	-	-	-	-	-
60-64	5	23,851	6	10,274	39,628
65-69	3	27,040	15	14,002	38,399
70-74	18	30,760	39	18,444	37,658
75-79	30	30,254	12	25,315	38,910
80-84	28	32,766	1	11,004	14,244
85-89	23	31,819	-	-	-
90-94	15	33,053	-	-	-
95-100	7	45,225	-	-	-
100 and over	3	50,584	-	-	-
Total	132	\$ 32,387	73	\$ 17,887	\$ 37,857

Inactive Teachers - Deferred Benefits

Terminated Vested	Count	Average Federal Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-59	6	1,720
50-54	55	3,731
55-59	52	6,283
60-64	48	6,664
65-69	28	8,288
70-74	29	4,166
75-79	14	9,415
80-84	1	7,932
85-89	-	-
90-94	-	-
95-100	-	-
100 and over	-	-
Total	233	\$ 5,814

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	-	-	-
45-59	-	-	-
50-54	2	3,390	33,930
55-59	6	6,352	42,160
60-64	5	9,154	36,871
65-69	-	-	-
70-74	-	-	-
75-79	-	-	-
80-84	-	-	-
85-89	-	-	-
90-94	-	-	-
95-100	-	-	-
100 and over	-	-	-
Total	13	\$ 6,974	\$ 38,860

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	3	137,690
65-69	12	173,899
70-74	22	149,723
75-79	22	155,101
80-84	14	173,560
85-89	7	160,216
90-94	7	139,992
95-100	-	-
100 and over	-	-
Total	87	\$ 157,900

Beneficiaries	Count	Average Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-59	-	-
50-54	-	-
55-59	1	7,860
60-64	-	-
65-69	-	-
70-74	1	109,586
75-79	2	105,660
80-84	6	79,677
85-89	1	90,723
90-94	3	77,701
95-100	1	91,156
100 and over	-	-
Total	15	\$ 81,454

Disabled Retirees	Count	Average Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-59	-	-
50-54	-	-
55-59	-	-
60-64	-	-
65-69	1	140,745
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-100	-	-
100 and over	-	-
Total	1	\$ 140,745

Terminated Vested	Count	Average Benefit
Under 35	-	\$ -
35-39	-	-
40-44	-	-
45-59	-	-
50-54	-	-
55-59	-	-
60-64	-	-
65-69	-	-
70-74	-	-
75-79	-	-
80-84	-	-
85-89	-	-
90-94	-	-
95-100	-	-
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, 2021 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 2021 spot rates implied by the 2020 spot rate yield curve. These spot rates used in gain/loss analysis were calculated by converting the 2020 spot rates to forward rates, removing the forward rate for FY 2021, and then converting the forward rates back to spot rates. See the table below for an example of the rates.

Fiscal Year	2020 Valuation Spot Rate Assumption	Forward Rate (rounded)	Implied 2021 Spot Rates used for (Gain)/Loss only
FY 2021	0.82%	0.82%	N/A
FY 2022	0.96%	1.10%	1.10%
FY 2023	1.17%	1.59%	1.34%
FY 2024	1.39%	2.05%	1.58%

Example: 1.58% adjusted FY 2024 spot rate = $(1.0110 \times 1.0159 \times 1.0205)^{(1/3)} - 1$

Asset Valuation Method

Net assets available for benefits, projected to September 30, 2021 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. Net assets available for benefits are the book value of total assets less non-pension liabilities. Total assets primarily consist of net investments in Treasury securities recorded at amortized cost.

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.

APPENDIX A

Actuarial Assumptions and Methods

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 recalculated each year using the new spot rates. For the Judges' Plan, the outstanding amortization bases are recalculated 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 inactives 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.

Models

Actuarial Standard of Practice No. 56 – Modeling requires disclosure of certain information regarding the actuary's use of models when issuing actuarial reports for work performed on or after October 1, 2020. For this valuation, the liability calculations were determined using industry-leading defined benefit valuation software developed and maintained by a third-party vendor. The model was designed specifically for the measurement of defined benefit pension and postretirement medical plan liabilities and the actuary has updated the applicable parameters for the specific plan provisions and assumptions selected for this valuation. The discount rate was determined using a model that calculates a supportable weighted-average discount rate with inputs of the selected yield curve and projected plan cash flows.

Method Changes Since Last Year

None.

APPENDIX A

Actuarial Assumptions and Methods

Assumptions

Interest Rates

The June 30, 2021 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	0.80%	25-26	2.92%	50-51	3.20%	75-76	3.29%
1-2	0.92%	26-27	2.95%	51-52	3.20%	76-77	3.29%
2-3	1.10%	27-28	2.97%	52-53	3.21%	77-78	3.29%
3-4	1.30%	28-29	2.99%	53-54	3.21%	78-79	3.30%
4-5	1.49%	29-30	3.00%	54-55	3.22%	79-80	3.30%
5-6	1.65%	30-31	3.02%	55-56	3.22%	80-81	3.30%
6-7	1.80%	31-32	3.03%	56-57	3.23%	81-82	3.30%
7-8	1.93%	32-33	3.05%	57-58	3.23%	82-83	3.30%
8-9	2.05%	33-34	3.06%	58-59	3.23%	83-84	3.31%
9-10	2.15%	34-35	3.07%	59-60	3.24%	84-85	3.31%
10-11	2.24%	35-36	3.08%	60-61	3.24%	85-86	3.31%
11-12	2.32%	36-37	3.09%	61-62	3.25%	86-87	3.31%
12-13	2.39%	37-38	3.10%	62-63	3.25%	87-88	3.31%
13-14	2.46%	38-39	3.11%	63-64	3.25%	88-89	3.32%
14-15	2.52%	39-40	3.12%	64-65	3.26%	89-90	3.32%
15-16	2.57%	40-41	3.13%	65-66	3.26%	90-91	3.32%
16-17	2.62%	41-42	3.14%	66-67	3.26%	91-92	3.32%
17-18	2.66%	42-43	3.15%	67-68	3.27%	92-93	3.32%
18-19	2.70%	43-44	3.15%	68-69	3.27%	93-94	3.32%
19-20	2.74%	44-45	3.16%	69-70	3.27%	94-95	3.32%
20-21	2.77%	45-46	3.17%	70-71	3.28%	95-96	3.33%
21-22	2.81%	46-47	3.17%	71-72	3.28%	96-97	3.33%
22-23	2.84%	47-48	3.18%	72-73	3.28%	97-98	3.33%
23-24	2.87%	48-49	3.19%	73-74	3.28%	98-99	3.33%
24-25	2.90%	49-50	3.19%	74-75	3.29%	99-100	3.33%

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	2.51%	2.50%	2.35%	2.65%

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 2020 EIR (2.91%) was used for this purpose. For Police, Fire and Teachers, the first spot rate from the 2020 spot rate curve (0.82%) was used for this purpose.

Economic Assumptions

	Police	Fire	Teachers	Judges
COLA ¹	1.75%	1.75%	1.68%	1.65%
Wage Inflation	2.15%	2.20%	2.30%	1.04%

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.

APPENDIX A

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%
		<p>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.</p> <p>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.</p>			
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 				

APPENDIX A

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	<p>Mortality tables are adjusted using generational projection from 2010 using Scale MP-2020.</p>
Mortality Adjustment from Census Date to Valuation Date	<p>The liabilities are adjusted to account for mortality during the 5 month period between the census collection date of May 1, 2021 and the valuation date of October 1, 2021. 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.</p>

APPENDIX A

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 \$218,600 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, 2021. The June 30, 2020 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 2.91%.

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%

COLA/Wage Inflation

	Police	Fire	Teachers	Judges
	<u>Prior Year</u>			
COLA	1.76%	1.76%	1.71%	1.52%
Wage Inflation	2.15%	2.20%	2.30%	0.94%

Longevity Improvement Projection Scale

The mortality projection scale for all plans was updated from Scale MP-2019 to Scale MP-2020.

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-2020 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>
Retirement Benefits	
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	<p>5 years of departmental service.</p>
Deferred Vested Benefit	<p>Optional Retirement Benefit beginning at age 55.</p>

APPENDIX C

Plan Provisions Summary Police Officers and Firefighters' Plan

Disability Benefits	
Service-Related Disability Benefit Eligibility	<p>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.</p>
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	<p>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.</p>
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

Death Benefits	
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; • \$4,404 (\$4,308 if hired on or after November 1, 1996) - Federal portion is \$1,548; or • \$13,212 (\$12,924 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.
Retirement Benefits	
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

Disability Benefits	
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.
Death Benefits	
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; • \$7,488 (if hired before January 1, 1980), \$7,212 (if hired between January 1, 1980 and October 31, 1996), or \$7,044 (if hired on or after November 1, 1996) per child; or • \$22,464 (if hired before January 1, 1980), \$21,636 (if hired between January 1, 1980 and October 31, 1996), or \$21,132 (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	Eligibility is the same as for the children's benefit when there is a surviving spouse. Benefit Amount Per child (payable until the children are no longer eligible), the smallest of: <ul style="list-style-type: none">• 75% of Average Pay divided by the number of eligible children;• \$9,156 (if hired before January 1, 1980), \$8,808 (if hired between January 1, 1980 and October 31, 1996), or \$8,532 (if hired on or after November 1, 1996) per child; or• \$27,468 (if hired before January 1, 1980), \$26,424 (if hired between January 1, 1980 and October 31, 1996), or \$25,596 (if hired on or after November 1, 1996) divided by the number of children. These amounts are increased annually based on cost-of-living adjustments.
Survivor Benefit - Surviving Parents Only	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.
Changes Since Prior Valuation	None of which we are aware.

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	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. Emerging inactive plan members not eligible for additional benefits will receive a refund of their contributions without interest.
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	Earlier of: <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	Basic salary at retirement times the ratio of Judicial Service to 30, plus An additional benefit for any Credited Service (non Judicial) as follows: <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 • \$6,548.88 (\$7,860.00 if no spouse benefits apply) as of 12/01/2020, increased annually • \$19,646.64 (\$23,580.00 if no spouse benefits apply) divided by the number of children as of 12/01/2020, increased annually.
Changes Since Prior Valuation	None of which we are aware.