

North Dakota Public Employees Retirement System

Actuarial Valuation as of July 1, 2023



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October 30, 2023

Board Members
North Dakota Public Employees Retirement System
Bismarck, North Dakota

Members of the Board:

We are pleased to provide our formal annual Actuarial Valuation Report as of July 1, 2023, for the North Dakota Public Employees Retirement System ("NDPERS"). The actuarial valuation was performed at the request of the Board and is intended for use by the Board and NDPERS and those designated by the Board and NDPERS. This report may be provided to parties other than the Board and NDPERS only in its entirety and only with the permission of the Board and NDPERS. GRS is not responsible for unauthorized use of this report.

The purposes of the actuarial valuation are to measure the funding progress of NDPERS and to determine the actuarial employer contribution rate for the NDPERS for the Plan Year commencing July 1, 2023, and ending on June 30, 2024. This actuarial valuation also provides information required by GASB Statement No. 67. Information required by GASB Statement No. 68 and the employer allocation of the Net Pension Liability are provided in a separate report. This report should not be relied on for any purpose other than the purpose described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

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

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

The actuarial valuation was based upon information furnished by the NDPERS Staff, concerning benefits provided by the North Dakota Public Employees Retirement System, financial transactions, plan provisions and census data for active members, terminated members, retirees and beneficiaries as of July 1, 2023. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the NDPERS Staff.

This report was prepared using actuarial assumptions adopted by the Board as authorized under North Dakota Administrative Code Section 71-02. Most actuarial assumptions used in the actuarial valuation as of July 1, 2023 were based on an experience review for the period from July 1, 2014 to July 1, 2019, and were adopted for first use commencing with the actuarial valuation as of July 1, 2020. In addition, the investment return assumption was decreased from 7.00 percent to 6.50 percent beginning with the July 1, 2022 actuarial valuation. All actuarial assumptions used in this report are reasonable for the purposes of this actuarial valuation. The combined effect of the assumptions is expected to have no significant bias (i.e., not significantly optimistic or pessimistic). All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice. Additional information about the actuarial assumptions is included in the Section E of this report.

There have been significant plan provision changes since the previous valuation, including the closure of the Main System to employees newly enrolled into the system on January 1, 2025 and later. Additional detail about this and other plan changes is included in Comments on the Actuarial Valuation in this report.

Contributions to PERS are currently based on fixed statutory contribution rates. Effective January 1, 2024, the Main System employer contribution rate increases by 1.00 percent of pay, from 7.12 percent of pay to 8.12 percent (plus an additional 1.14 percent of pay for members hired after 2019). The state employer contribution for 2026 and later was changed to be the amount sufficient to fund the Main System on an actuarial basis, with the amortization of the unfunded liability determined on a level percent of payroll basis over a closed period beginning on January 1, 2026 and ending June 30, 2056.

Statutory contributions to the Public Safety with prior Main System service have also increased. Effective January 1, 2024, the employer contribution rate increases by 1.59 percent of pay, from 9.81 percent of pay to 11.40 percent. Contribution rates are higher for BCI employers and peace officers employed by the State. When the future increases are reflected, the total statutory contribution rate is expected to amortize the unfunded liability in approximately 30 years.

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

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation, and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Bonita Wurst and Abra Hill are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein.

The signing actuaries are independent of the plan sponsor.

Gabriel, Roeder, Smith & Company will be pleased to review this actuarial valuation and report with the Board of Trustees and to answer any questions pertaining to the actuarial valuation.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



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SECTION A

ACTUARIAL VALUATION RESULTS

Comments on the Actuarial Valuation

Purpose

At your request, we have performed an actuarial valuation of the North Dakota Public Employees Retirement System as of July 1, 2023:

- To determine the funding status of the System as of the actuarial valuation date;
- To determine the actuarial employer contribution rate for the fiscal year beginning July 1, 2023; and
- To provide other data required by NDPERS.

Pension plan financial reporting under GASB Statement No. 67 is provided in Section D of this report. Employer financial reporting under GASB Statement No. 68 is provided in a separate report.

Membership Data

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

A total of 25,019 active members (including the Main System, Judges and Public Safety) were included in the actuarial valuation as of July 1, 2023. Between the 2022 and 2023 actuarial valuations, the number of active employees increased by 240 members, or 1.0 percent. The average annual actuarial valuation pay increased by 4.6 percent, from \$50,378 to \$52,691 between the 2022 and 2023 actuarial valuations. There were 6,011 active members who were eligible for retirement (normal, early or Rule of 85, 88 or 90) as of July 1, 2023.

The number of benefit recipients increased from 14,204 to 14,997, or 5.6 percent, since the last actuarial valuation. The average monthly benefit increased by 1.8 percent, from \$1,411 to \$1,436. During the year ending June 30, 2023, there were 1,114 members awarded a benefit.

There were 8,017 inactive members as of July 1, 2023, who were vested and elected to receive a deferred benefit. The average monthly deferred benefit is \$550. There were 9,585 inactive members as of July 1, 2023, who were not vested or elected to receive a refund of contributions.

Section C summarizes the membership data.

Plan Provisions

Main System

Effective January 1, 2025, the Main System is closed to new members. Employees newly enrolled into the system on January 1, 2025 and later will participate in a new Defined Contribution Plan. This change does not have an immediate impact on the valuation results as of July 1, 2023, because members currently enrolled in the Main Plan are not impacted by the future closure of the Plan. The closure of the Plan is reflected in the GASB projections.

State employees participating in the Main System on January 1, 2025 who are at least age 18 with 5 years or less of participation will be eligible to irrevocably elect to transfer to the existing DC Plan during a



Comments on the Actuarial Valuation

three-month election period ending March 31, 2025. For members who elect to transfer to the existing DC Plan, NDPERS will transfer a lump sum from the Main System to the DC Plan based on the actuarial present value of the accrued benefit as of January 1, 2025, plus interest from January 1, 2025 to the date of transfer. The state employer of an employee who elects to transfer to the existing DC Plan shall contribute an additional amount of \$3,333 annually for up to three years, provided the employee continues employment.

The liability released by members electing to transfer to the DC Plan is expected to be greater than the amount of assets transferred to the DC Plan. We estimated a savings of \$16.9 million in the actuarial accrued liability as of July 1, 2023. The estimate assumes that 50 percent of eligible current members would elect to transfer to the DC Plan in 2025. This is only an estimate; actual costs will depend on the members electing to transfer to the DC Plan in 2025 as well as their liabilities and lump sum transfer amounts.

Effective January 1, 2024, the employer contribution rate increases by 1.00 percent of pay, from 7.12 percent of pay to 8.12 percent (plus an additional 1.14 percent of pay for members hired after 2019). The state employer contribution for 2026 and later was changed to be the amount sufficient to fund the Main System on an actuarial basis, with the amortization of the unfunded liability determined on a level percent of payroll basis over a closed period beginning on January 1, 2026 and ending June 30, 2056.

Public Safety with Prior Main System Service

Legislation modified provisions of the Public Safety with Prior Main System service.

The Public Safety System was expanded to allow peace officers employed by the State to participate, effective August 1, 2023, with a 6.00 percent employee contribution rate. Prior to this legislation, peace officers employed by the State participated in the Main System.

The liability released from the Main System by transferring 181 members is expected to be greater than the amount of assets transferred from the Main System to the Public Safety System. We estimated a savings of \$9.0 million in the Main System actuarial accrued liability as of July 1, 2023.

The liability added to the Public Safety System by transferring members is expected to be greater than the amount of assets transferred from the Main System to the Public Safety System. We estimated a cost of \$12.6 million in the Public Safety with Prior Main System service actuarial accrued liability as of July 1, 2023.

The cost impacts are estimated; actual costs will depend on the members transferring to the Public Safety System as well as their liabilities and the asset transfer amount.

The initial employer contribution rate for this group is 12.75 percent of pay. Effective January 1, 2024, the rate increases to 14.34 percent of pay.

Effective August 1, 2023, for Bureau of Criminal Investigation (BCI) members who retire on or after August 1, 2023, the multiplier is 3.00 percent for the first twenty years and 1.75 percent for additional years. For BCI members hired on or after August 1, 2023, the vesting requirement is changed from 3 years to 10 years.



Comments on the Actuarial Valuation

The BCI benefit changes increased the Public Safety actuarial accrued liability as of July 1, 2023 by \$4.1 million.

Effective August 1, 2023, the BCI employer contribution rate increases from 9.81 percent of pay to 20.67 percent of pay, and effective January 1, 2024, the rate increases to 22.26 percent of pay.

Actuarial Assumptions and Methods

This report was prepared using actuarial assumptions adopted by the Board as authorized under North Dakota Administrative Code Section 71-02. Most of the actuarial assumptions used in the valuation were based on an experience review for the period from July 1, 2014 to July 1, 2019, and were adopted for first use commencing with the actuarial valuation as of July 1, 2020. In addition, the investment return assumption was decreased from 7.00 percent to 6.50 percent beginning with the July 1, 2022 actuarial valuation. All actuarial assumptions used in this report are reasonable for the purposes of this actuarial valuation.

Section E outlines the actuarial assumptions and methods used in the actuarial valuation.

The assumption for administrative expenses is equal to the prior years' administrative expenses, adjusted for inflation. In total, this amount has increased from \$2,392,924 to \$2,730,160.

The actuarial contribution rate is calculated using a 20-year open period, level percentage of payroll amortization method. The remaining amortization period will be reset to 20 years in each future actuarial valuation.

Plan Asset Return

On a market value basis, NDPERS assets had an investment return of approximately 7.83 percent (net of investment expenses). On an actuarial value of asset basis, NDPERS assets had an investment return of approximately 6.00 percent, which compares to the prior year assumed rate of return of 6.50 percent. The actuarial value of assets is currently 101.4 percent of the market value of assets. There are \$55,607,767 in net asset losses currently being deferred that will be phased into the actuarial value of assets over the next four years.

Gain/Loss Analysis

During the plan year ending June 30, 2023, the unfunded actuarial accrued liability ("UAAL") increased from \$1,783,219,509 as of July 1, 2022, to \$1,928,577,068 as of July 1, 2023, which is an increase of \$145,357,559. The key factors contributing to the increase in the UAAL were the difference between the statutory contributions and the actuarially determined contribution rate, recognition of asset losses, salary experience, unfavorable demographic experience, and the increase resulting from new entrants to the system. These losses were partially offset by savings due to changes in plan provisions. The unfunded actuarial accrued liability based on the market value of assets increased from \$1,897,807,273 to \$1,984,184,835.



Comments on the Actuarial Valuation

Funded Ratio

The funded ratio measures the portion of the actuarial accrued liability (calculated based on the actuarial assumptions disclosed in this report) that is currently funded. The total PERS funded ratio is 66.9 percent on an actuarial value of assets basis and 66.0 percent on a market value of assets basis as of July 1, 2023.

The funded ratio as of July 1, 2023 is 66.3 percent for the Main System, 112.5 percent for the Judges System, 68.6 percent for the Public Safety plan with prior Main System service, and 93.0 percent for the Public Safety plan without prior Main System service. The funded ratios based on the market value of assets are approximately 0.9 to 1.6 percentage points lower than the funded ratios based on the actuarial value of assets.

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

Employer Contributions

The actuarially determined contribution rate is calculated as the normal cost contribution (to fund benefits accruing during the year) plus a contribution to amortize the unfunded liability. The unfunded liability contribution rate is calculated using a 20-year open period, level percentage of payroll amortization method. The remaining amortization period will be reset to 20 years in each future actuarial valuation. If employers contributed the actuarial contribution rate, the contribution rate would be expected to gradually decrease using a 20-year open amortization period as the funded ratio gradually increased. An open amortization period is expected to gradually improve the funded ratio. However, the funded ratio is not expected to reach 100 percent under this method (assuming no actuarial gains or losses) because the remaining unfunded liability at each future actuarial valuation date is re-amortized over a new 20-year period.

The contributions currently made by employers are based on fixed contribution rates set by statute (and not based on the actuarially determined rate).

Main System

Effective January 1, 2024, the Main System employer contribution rate increases by 1.00 percent of pay, from 7.12 percent of pay to 8.12 percent (plus an additional 1.14 percent of pay for members hired after 2019). The state employer contribution for 2026 and later was changed to be the amount sufficient to fund the Main System on an actuarial basis, with the amortization of the unfunded liability determined on a level percent of payroll basis over a closed period beginning on January 1, 2026 and ending June 30, 2056.

The employer ADEC for the fiscal year beginning July 1, 2023 for the Main System is \$190.8 million, or 14.86 percent of pay (based on open 20-year amortization). If the employer ADEC was based on 30-year amortization, it would equal \$160.2 million (or 12.48 percent of pay). Actual employer contributions in the fiscal year ending June 30, 2023 were \$92.5 million.



Comments on the Actuarial Valuation

In August 2023, the plan received a one-time cash infusion equal to \$135 million. This contribution is not reflected in the assets as of June 30, 2023, but is reflected in the projection for GASB purposes. The Main System is also a potential recipient of future state contributions of \$65 million per biennium, contingent upon state tax revenues. This potential source of revenue has no immediate actuarial impact but will be reflected if and when received.

Judges

The statutory contribution rate is significantly higher than the actuarial contribution rate for Judges.

Public Safety with Prior Main System Service

Effective January 1, 2024, the employer contribution rate increases by 1.59 percent of pay, from 9.81 percent of pay to 11.40 percent. Contribution rates are higher for BCI employers and peace officers employed by the State. When the future increases are reflected, the total statutory contribution rate is expected to amortize the unfunded liability in approximately 30 years.

Public Safety without Prior Main System Service

Effective January 1, 2024, the employer contribution rate increases by 1.23 percent of pay, from 7.93 percent of pay to 9.16 percent. When this increase is factored in, the statutory contribution rate is slightly higher than the actuarial contribution rate.

Historical Trends

The funded ratio (based on the actuarial value of assets) for the total PERS increased over the past 9 years from a historical low of 64.5 percent in 2014, to the current funded ratio of 66.9 percent.

Risks Associated with Measuring the Accrued Liability and Contributions

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

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

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

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

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

Risk Measures

The statutory contribution may be considered as a minimum contribution that complies with State statute. The timely receipt of contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made in accordance with the funding policy do not necessarily guarantee benefit security.

Plan Maturity Measures

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

	2019	2020	2021	2022	2023
Ratio of the Market Value of Assets to Total Payroll	2.82	2.70	3.25	2.91	2.92
Ratio of Actuarial Accrued Liability to Payroll	3.89	4.04	4.11	4.43	4.42
Ratio of Actives to Retirees and Beneficiaries	1.93	1.89	1.81	1.74	1.67
Ratio of Net Cash Flow to Market Value of Assets	-1.07%	-1.38%	-1.25%	-1.59%	-1.92%

Ratio of Market Value of Assets to Payroll

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

Ratio of Actuarial Accrued Liability to Payroll

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

Ratio of Actives to Retirees and Beneficiaries

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

Risk Measures

Ratio of Net Cash Flow to Market Value of Assets

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

Additional Risk Assessment

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

Summary of Actuarial Valuation Results (Total PERS)

		July 1, 2022	July 1, 2023
		Results	Results
Membership Data			
	Active Members	24,779	25,019
	Inactive Vested and Non-Vested Members	16,283	17,602
	Retirees and Beneficiaries	14,204	14,997
	TOTAL	55,266	57,618
Plan Liabilities			
	Actuarial Accrued Liability:		
	Active Members	\$ 2,612,046,933	\$ 2,695,683,542
	Inactive Vested and Non-Vested Members	372,960,832	407,291,657
	Retirees and Beneficiaries	2,548,571,410	2,725,150,378
	TOTAL	\$ 5,533,579,175	\$ 5,828,125,577
	Actuarial Value of Assets at Valuation Date	\$ 3,750,359,666	\$ 3,899,548,509
	Unfunded (Overfunded) Actuarial Accrued Liability	\$ 1,783,219,509	\$ 1,928,577,068
	Funded Position of Plan's Actuarial Accrued Liability¹	67.8 %	66.9 %
Actuarial Contribution Requirement		Fiscal Year	Fiscal Year
		2023	2024
	Annual Normal Cost as of Valuation Date	\$ 161,356,346	\$ 169,457,318
	Normal Cost Expense Load	2,392,924	2,730,160
	Amortization Payment	119,066,661	128,771,715
	Total Actuarial Contribution Requirement	282,815,931	300,959,193
	Expected Employee Contributions	91,542,039	96,484,524
	Actuarial Employer Contribution Requirement	\$ 191,273,892	\$ 204,474,669
	Projected Annual Compensation	\$ 1,324,271,761	\$ 1,399,434,646
Actuarial Employer Contribution % of Projected Annual Compensation			
	Main System	14.70%	14.86%
	Judges	11.90%	11.26%
	Public Safety with prior Main System service	11.40%	12.37%
	Public Safety without prior Main System service	9.16%	9.14%
	Total PERS (Combined)	14.44%	14.61%
Statutory Employer Contribution % of Projected Annual Compensation³			
	Main System ²	7.35%	7.43%
	Judges	17.52%	17.52%
	Public Safety with prior Main System service	9.81%	9.81%
	Public Safety without prior Main System service	7.93%	7.93%
	Total PERS (Combined)	7.56%	7.66%

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

² Weighted average of 7.12 percent for members hired before 1/1/2020 and 8.26% for members hired on or after 1/1/2020.

³ Contribution deficits do not reflect the future statutory contribution increases of 1.00% of pay or the future ADEC contributions beginning in 2026 for the Main System, 1.59% of pay for the Public Safety with prior Main System service, and 1.23% of pay for the Public Safety without prior Main System service.



Summary of Actuarial Valuation Results

Main System

Main System Results		
	July 1, 2022	July 1, 2023
Membership Data		
Active Members	23,487	23,678
Inactive Vested and Non-Vested Members	15,711	16,914
Retirees and Beneficiaries	13,977	14,755
TOTAL	53,175	55,347
Plan Liabilities		
Actuarial Accrued Liability:		
Active Members	\$ 2,467,418,652	2,518,534,600
Inactive Vested and Non-Vested Members	359,787,361	391,856,248
Retirees and Beneficiaries	2,476,981,791	2,648,879,907
TOTAL	5,304,187,804	5,559,270,755
Actuarial Value of Assets at Valuation Date	\$ 3,553,539,588	3,683,545,963
Unfunded (Overfunded) Actuarial Accrued Liability	\$ 1,750,648,216	1,875,724,792
Funded Position of Plan's Actuarial Accrued Liability¹	66.99%	66.26%
Market Value of Assets at Valuation Date	\$ 3,444,965,426	3,631,018,404
Unfunded (Overfunded) Actuarial Accrued Liability based on Market Value of Assets	\$ 1,859,222,378	1,928,252,351
Funded Position of Plan's Actuarial Accrued Liability based on Market Value of Assets	64.95%	65.31%
Actuarial Contribution Requirement based on Actuarial Value of Assets		
	Fiscal Year	Fiscal Year
	2023	2024
Annual Normal Cost as of Valuation Date	\$ 147,785,020	\$ 152,758,636
Normal Cost Expense Load	2,300,675	2,610,437
Amortization Payment	116,910,319	125,263,078
Total Actuarial Contribution Requirement	266,996,014	280,632,151
Expected Employee Contributions	86,128,242	89,855,719
Actuarial Employer Contribution Requirement	\$ 180,867,772	\$ 190,776,432
Projected Annual Compensation ²	\$ 1,230,403,464	\$ 1,283,653,135
Actuarial Contribution Rate	14.70%	14.86%
Statutory Contribution Rate ³	7.35%	7.43%
Statutory Contribution Deficit/(Surplus)	7.35%	7.43%
Actuarial Contribution Requirement based on Market Value of Assets		
Actuarial Contribution Rate	15.29%	15.13%
Statutory Contribution Deficit/(Surplus)	7.94%	7.70%

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

² Projected annual compensation for Fiscal Year 2024 reflects the transfer of members to the Public Safety State Employees group.

³ Contribution deficits and amortization periods do not reflect the future statutory contribution increases of 1.00% of pay or the future ADEC contributions beginning in 2026.



Summary of Actuarial Valuation Results

Judges

Judges Results		
	July 1, 2022	July 1, 2023
Membership Data		
Active Members	57	57
Inactive Vested and Non-Vested Members	2	3
Retirees and Beneficiaries	64	66
TOTAL	123	126
Plan Liabilities		
Actuarial Accrued Liability:		
Active Members	\$ 26,103,968	26,582,203
Inactive Vested and Non-Vested Members	363,429	882,982
Retirees and Beneficiaries	31,382,600	32,099,873
TOTAL	57,849,997	59,565,058
Actuarial Value of Assets at Valuation Date	\$ 64,571,296	67,034,043
Unfunded (Overfunded) Actuarial Accrued Liability	\$ (6,721,299)	(7,468,985)
Funded Position of Plan's Actuarial Accrued Liability ¹	111.62%	112.54%
Market Value of Assets at Valuation Date	\$ 62,598,397	66,078,134
Unfunded (Overfunded) Actuarial Accrued Liability based on Market Value of Assets	\$ (4,748,400)	(6,513,076)
Funded Position of Plan's Actuarial Accrued Liability based on Market Value of Assets	108.21%	110.93%
Actuarial Contribution Requirement based on Actuarial Value of Assets		
	Fiscal Year 2023	Fiscal Year 2024
Annual Normal Cost as of Valuation Date	\$ 2,250,559	\$ 2,284,204
Normal Cost Expense Load	6,389	11,292
Amortization Payment	(467,663)	(519,687)
Total Actuarial Contribution Requirement	1,789,285	1,775,809
Expected Employee Contributions	719,300	737,871
Actuarial Employer Contribution Requirement	\$ 1,069,985	\$ 1,037,938
Projected Annual Compensation	\$ 8,991,253	\$ 9,223,390
Actuarial Contribution Rate	11.90%	11.26%
Statutory Contribution Rate	17.52%	17.52%
Statutory Contribution Deficit/(Surplus)	-5.62%	-6.26%
Actuarial Contribution Requirement based on Market Value of Assets		
Actuarial Contribution Rate	13.43%	11.98%
Statutory Contribution Deficit/(Surplus)	-4.09%	-5.54%

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

Summary of Actuarial Valuation Results

Public Safety with Prior Main System Service

Public Safety with Prior Main System Service System Results		
	July 1, 2022	July 1, 2023
Membership Data		
Active Members	990	1,044
Inactive Vested and Non-Vested Members	424	499
Retirees and Beneficiaries	148	158
TOTAL	1,562	1,701
Plan Liabilities		
Actuarial Accrued Liability:		
Active Members	\$ 103,665,261	133,792,363
Inactive Vested and Non-Vested Members	10,818,604	11,842,678
Retirees and Beneficiaries	38,438,954	41,390,463
TOTAL	152,922,819	187,025,504
Actuarial Value of Assets at Valuation Date	\$ 114,490,260	128,273,097
Unfunded (Overfunded) Actuarial Accrued Liability	\$ 38,432,559	58,752,407
Funded Position of Plan's Actuarial Accrued Liability¹	74.87%	68.59%
Market Value of Assets at Valuation Date	\$ 110,992,147	126,443,916
Unfunded (Overfunded) Actuarial Accrued Liability based on Market Value of Assets	\$ 41,930,672	60,581,588
Funded Position of Plan's Actuarial Accrued Liability based on Market Value of Assets	72.58%	67.61%
Actuarial Contribution Requirement based on Actuarial Value of Assets		
	Fiscal Year 2023	Fiscal Year 2024
Annual Normal Cost as of Valuation Date	\$ 9,173,980	\$ 12,179,130
Normal Cost Expense Load	66,791	84,273
Amortization Payment	2,566,571	3,923,554
Total Actuarial Contribution Requirement	11,807,342	16,186,957
Expected Employee Contributions	3,860,469	5,002,904
Actuarial Employer Contribution Requirement	\$ 7,946,873	\$ 11,184,053
Projected Annual Compensation ²	\$ 69,712,894	\$ 90,412,122
Actuarial Contribution Rate	11.40%	12.37%
Statutory Contribution Rate ³	9.81%	9.81%
Statutory Contribution Deficit/(Surplus)	1.59%	2.56%
Actuarial Contribution Requirement based on Market Value of Assets		
Actuarial Contribution Rate	11.74%	12.50%
Statutory Contribution Deficit/(Surplus)	1.93%	2.69%

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

² Projected annual compensation for Fiscal Year 2024 reflects the transfer of members to the Public Safety State Employees group.

³ Contribution deficits and amortization periods do not reflect the future statutory contribution increases of 1.59% of pay.



Summary of Actuarial Valuation Results

Public Safety without Prior Main System Service

Public Safety without Prior Main System Service System Results		
	July 1, 2022	July 1, 2023
Membership Data		
Active Members	245	240
Inactive Vested and Non-Vested Members	146	186
Retirees and Beneficiaries	15	18
TOTAL	406	444
Plan Liabilities		
Actuarial Accrued Liability:		
Active Members	\$ 14,859,052	16,774,376
Inactive Vested and Non-Vested Members	1,991,438	2,709,749
Retirees and Beneficiaries	1,768,065	2,780,135
TOTAL	18,618,555	22,264,260
Actuarial Value of Assets at Valuation Date	\$ 17,758,522	20,695,406
Unfunded (Overfunded) Actuarial Accrued Liability	\$ 860,033	1,568,854
Funded Position of Plan's Actuarial Accrued Liability ¹	95.38%	92.95%
Market Value of Assets at Valuation Date	\$ 17,215,932	20,400,288
Unfunded (Overfunded) Actuarial Accrued Liability based on Market Value of Assets	\$ 1,402,623	1,863,972
Funded Position of Plan's Actuarial Accrued Liability based on Market Value of Assets	92.47%	91.63%
Actuarial Contribution Requirement based on Actuarial Value of Assets		
	Fiscal Year 2023	Fiscal Year 2024
Annual Normal Cost as of Valuation Date	\$ 2,146,787	\$ 2,235,348
Normal Cost Expense Load	19,069	24,158
Amortization Payment	57,434	104,770
Total Actuarial Contribution Requirement	2,223,290	2,364,276
Expected Employee Contributions	834,028	888,030
Actuarial Employer Contribution Requirement	\$ 1,389,262	\$ 1,476,246
Projected Annual Compensation	\$ 15,164,150	\$ 16,145,998
Actuarial Contribution Rate	9.16%	9.14%
Statutory Contribution Rate ²	7.93%	7.93%
Statutory Contribution Deficit/(Surplus)	1.23%	1.21%
Actuarial Contribution Requirement based on Market Value of Assets		
Actuarial Contribution Rate	9.40%	9.26%
Statutory Contribution Deficit/(Surplus)	1.47%	1.33%

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

² Contribution deficits and amortization periods do not reflect the future statutory contribution increases of 1.23% of pay.



Actuarial Valuation Results

All PERS Plans

	Main System	%	Judges	%	Public Safety w/ Prior	%	Public Safety w/o Prior	%	Total	% of Payroll
Actuarial Valuation as of July 1, 2023										
Based on Actuarial Value of Assets										
Total Actuarial Accrued Liability	\$ 5,559,270,755		\$ 59,565,058		\$ 187,025,504		\$ 22,264,260		\$ 5,828,125,577	
Actuarial Value of Assets (AVA)	3,683,545,963		67,034,043		128,273,097		20,695,406		3,899,548,509	
Unfunded Actuarial Accrued Liability (UAAL)	1,875,724,792		(7,468,985)		58,752,407		1,568,854		1,928,577,068	
Funded Ratio (Actuarial Value of Assets)	66.3%		112.5%		68.6%		93.0%		66.9%	
Total Annual Gross Normal Cost	155,369,073	12.10%	2,295,496	24.89%	12,263,403	13.56%	2,259,506	13.99%	172,187,478	12.30%
Employee Contribution	89,855,719	7.00%	737,871	8.00%	5,002,904	5.53%	888,030	5.50%	96,484,524	6.89%
Annual Employer Normal Cost	65,513,354	5.10%	1,557,625	16.89%	7,260,499	8.03%	1,371,476	8.49%	75,702,954	5.41%
Amortization of Unfunded Liability ¹	125,263,078	9.76%	(519,687)	(5.63%)	3,923,554	4.34%	104,770	0.65%	128,771,715	9.20%
Actuarial Contribution	\$ 190,776,432	14.86%	\$ 1,037,938	11.26%	\$ 11,184,053	12.37%	\$ 1,476,246	9.14%	\$ 204,474,669	14.61%
Statutory Employer Contribution ²	95,375,428	7.43%	1,615,938	17.52%	8,869,429	9.81%	1,280,378	7.93%	107,141,173	7.66%
Statutory Contribution Deficit/(Surplus)	95,401,004	7.43%	(578,000)	(6.26%)	2,314,624	2.56%	195,868	1.21%	97,333,496	6.95%
Employer UAAL Contribution from Statutory Rate	29,862,074	2.33%	58,313	0.63%	1,608,930	1.78%	(91,098)	(0.56%)	31,438,219	2.25%
Amortization Period from Statutory Rate (Years)	100+		None		100+		100+		100+	
Based on Market Value of Assets										
Market Value of Assets (MVA)	\$ 3,631,018,404		\$ 66,078,134		\$ 126,443,916		\$ 20,400,288		\$ 3,843,940,742	
Unfunded Actuarial Accrued Liability (UAAL)	1,928,252,351		(6,513,076)		60,581,588		1,863,972		1,984,184,835	
Funded Ratio (Market Value of Assets)	65.3%		110.9%		67.6%		91.6%		66.0%	
Actuarial Contribution		15.13%		11.98%		12.50%		9.26%		14.88%
Amortization Period from Statutory Rate (Years)	100+		None		100+		100+		100+	
Actuarial Valuation as of July 1, 2022										
Based on Actuarial Value of Assets										
Total Actuarial Accrued Liability	\$ 5,304,187,804		\$ 57,849,997		\$ 152,922,819		\$ 18,618,555		\$ 5,533,579,175	
Actuarial Value of Assets (AVA)	3,553,539,588		64,571,296		114,490,260		17,758,522		3,750,359,666	
Unfunded Actuarial Accrued Liability (UAAL)	1,750,648,216		(6,721,299)		38,432,559		860,033		1,783,219,509	
Funded Ratio (Actuarial Value of Assets)	67.0%		111.6%		74.9%		95.4%		67.8%	
Total Annual Gross Normal Cost	150,085,695	12.20%	2,256,948	25.10%	9,240,771	13.26%	2,165,856	14.28%	163,749,270	12.37%
Employee Contribution	86,128,242	7.00%	719,300	8.00%	3,860,469	5.54%	834,028	5.50%	91,542,039	6.91%
Annual Employer Normal Cost	63,957,453	5.20%	1,537,648	17.10%	5,380,302	7.72%	1,331,828	8.78%	72,207,231	5.46%
Amortization of Unfunded Liability ¹	116,910,319	9.50%	(467,663)	(5.20%)	2,566,571	3.68%	57,434	0.38%	119,066,661	8.99%
Actuarial Contribution	\$ 180,867,772	14.70%	\$ 1,069,985	11.90%	\$ 7,946,873	11.40%	\$ 1,389,262	9.16%	\$ 191,273,892	14.44%
Statutory Employer Contribution	90,434,655	7.35%	1,575,268	17.52%	6,838,835	9.81%	1,202,517	7.93%	100,051,274	7.56%
Statutory Contribution Deficit/(Surplus)	90,433,117	7.35%	(505,283)	(5.62%)	1,108,038	1.59%	186,745	1.23%	91,222,618	6.88%
Employer UAAL Contribution from Statutory Rate	26,477,202	2.15%	37,620	0.42%	1,458,533	2.09%	(129,311)	(0.85%)	27,844,043	2.10%
Amortization Period from Statutory Rate (Years)	100+		None		50.8		100+		100+	
Based on Market Value of Assets										
Market Value of Assets (MVA)	\$ 3,444,965,426		\$ 62,598,397		\$ 110,992,147		\$ 17,215,932		\$ 3,635,771,902	
Unfunded Actuarial Accrued Liability (UAAL)	1,859,222,378		(4,748,400)		41,930,672		1,402,623		1,897,807,273	
Funded Ratio (Market Value of Assets)	64.9%		108.2%		72.6%		92.5%		65.7%	
Actuarial Contribution		15.29%		13.43%		11.74%		9.40%		15.02%
Amortization Period from Statutory Rate (Years)	100+		None		63.2		100+		100+	
Changes from Actuarial Valuation as of July 1, 2022 to July 1, 2023										
AVA Unfunded Actuarial Accrued Liability (UAAL)	\$ 125,076,576		\$ (747,686)		\$ 20,319,848		\$ 708,821		\$ 145,357,559	
MVA Unfunded Actuarial Accrued Liability (UAAL)	69,029,973		(1,764,676)		18,650,916		461,349		86,377,562	
AVA Funded Ratio	-0.7%		0.9%		-6.3%		-2.4%		-0.9%	
MVA Funded Ratio	0.4%		2.7%		-5.0%		-0.8%		0.3%	
Actuarial Contribution Rate (AVA)		0.16%		-0.64%		0.97%		-0.02%		0.17%
Actuarial Contribution Rate (MVA)		-0.16%		-1.45%		0.76%		-0.14%		-0.14%

¹ Amortization as a level percentage of payroll over a 20-year open period. Total payroll assumed to increase 3.00% annually for the Judges and 3.50% for the Main System and Public Safety groups.

² Contribution deficits and amortization periods do not reflect the future statutory contribution increases of 1.00% of pay or the future ADEC contributions beginning in 2026 for the Main System, 1.59% of pay for the Public Safety with prior Main System service, and 1.23% of pay for the Public Safety without prior Main System service.



Actuarial Valuation Results

All PERS Plans

Valuation as of July 1, 2023

July 1, 2022

	Main System	%	Judges	%	Public Safety w/ Prior	%	Public Safety w/o Prior	%	Total	% of Payroll	Total	% of Payroll
Active Members												
Number	23,678		57		1,044		240		25,019		24,779	
Average Age	45.8		56.0		36.7		37.8		45.4		45.7	
Average Years of Benefit Service	9.1		9.6		6.9		4.9		9.0		9.1	
Average Years of Vesting Service	9.2		15.8		8.0		6.4		9.1		9.3	
Total Payroll	\$ 1,222,870,520		\$ 8,954,748		\$ 71,555,079		\$ 14,895,770		\$ 1,318,276,116		\$ 1,248,307,560	
Projected Annual Compensation ⁴	\$ 1,283,653,135		\$ 9,223,390		\$ 90,412,122		\$ 16,145,998		\$ 1,399,434,646		\$ 1,324,271,761	
Inactive Vested and Non-Vested Members												
Number	16,914		3		499		186		17,602		16,283	
Total Annualized Benefits (Vested)	\$ 50,531,448		\$ 107,712		\$ 1,833,570		\$ 416,184		\$ 52,888,914		\$ 49,170,020	
Retired Members and Beneficiaries												
Number	14,755		66		158		18		14,997		14,204	
Total Annualized Benefits	\$ 250,681,557		\$ 3,921,734		\$ 3,535,545		\$ 228,899		\$ 258,367,734		\$ 240,526,769	
Total Membership	55,347		126		1,701		444		57,618		55,266	
Actuarial Accrued Liability												
Active Members	\$ 2,518,534,600		\$ 26,582,203		\$ 133,792,363		\$ 16,774,376		\$ 2,695,683,542		\$ 2,612,046,933	
Inactive Vested and Non-Vested Members	391,856,248		882,982		11,842,678		2,709,749		407,291,657		372,960,832	
Retired Members and Beneficiaries	2,648,879,907		32,099,873		41,390,463		2,780,135		2,725,150,378		2,548,571,410	
Total	5,559,270,755		59,565,058		187,025,504		22,264,260		5,828,125,577		5,533,579,175	
Actuarial Value of Assets	\$ 3,683,545,963		\$ 67,034,043		\$ 128,273,097		\$ 20,695,406		\$ 3,899,548,509		\$ 3,750,359,666	
Unfunded Actuarial Accrued Liability	\$ 1,875,724,792		\$ (7,468,985)		\$ 58,752,407		\$ 1,568,854		\$ 1,928,577,068		\$ 1,783,219,509	
Funded Ratio (Actuarial Value of Assets)	66.3%		112.5%		68.6%		93.0%		66.9%		67.8%	
Annual Gross Normal Cost												
Benefits	\$ 152,758,636	11.90%	\$ 2,284,204	24.77%	\$ 12,179,130	13.47%	\$ 2,235,348	13.84%	\$ 169,457,318	12.11%	\$ 161,356,346	12.18%
Expenses of Administration	2,610,437	0.20%	11,292	0.12%	84,273	0.09%	24,158	0.15%	2,730,160	0.19%	2,392,924	0.19%
Total	155,369,073	12.10%	2,295,496	24.89%	12,263,403	13.56% ²	2,259,506	13.99%	172,187,478	12.30%	163,749,270	12.37%
Amortization of Unfunded Liability ¹	\$ 125,263,078	9.76%	\$ (519,687)	(5.63%)	\$ 3,923,554	4.34%	\$ 104,770	0.65%	\$ 128,771,715	9.20%	\$ 119,066,661	8.99%
Actuarial Contribution Requirement												
Employer Portion	\$ 190,776,432	14.86%	\$ 1,037,938	11.26%	\$ 11,184,053	12.37%	\$ 1,476,246	9.14%	\$ 204,474,669	14.61%	\$ 191,273,892	14.44%
Employee Portion	89,855,719	7.00%	737,871	8.00%	5,002,904	5.53%	888,030	5.50%	96,484,524	6.89%	91,542,039	6.91%
Total	280,632,151	21.86%	1,775,809	19.26%	16,186,957	17.90%	2,364,276	14.64%	300,959,193	21.50%	282,815,931	21.36%
Actuarial Contribution	\$ 190,776,432	14.86%	\$ 1,037,938	11.26%	\$ 11,184,053	12.37%	\$ 1,476,246	9.14%	\$ 204,474,669	14.61%	\$ 191,273,892	14.44%
Statutory Employer Contribution ³	95,375,428	7.43%	1,615,938	17.52%	8,869,429	9.81%	1,280,378	7.93%	107,141,173	7.66%	98,905,957	7.56%
Statutory Contribution Deficit/(Surplus)	95,401,004	7.43%	(578,000)	(6.26%)	2,314,624	2.56%	195,868	1.21%	97,333,496	6.95%	92,367,935	6.88%

¹ Amortization as a level percentage of payroll over a 20-year open period. Total payroll assumed to increase 3.00% annually for the Judges and 3.50% for the Main System and Public Safety groups.

² Total Gross Normal Cost for the Bureau of Criminal Investigation (BCI) members is 20.98% of pay. When employee contributions of 6.00% of pay are reflected, the Employer Normal Cost for BCI members is 14.98% of pay.

³ Contribution deficits and amortization periods do not reflect the future statutory contribution increases of 1.00% of pay or the future ADEC contributions beginning in 2026 for the Main System, 1.59% of pay for the Public Safety with prior Main System service, and 1.23% of pay for the Public Safety without prior Main System service.

⁴ Projected annual compensation for Fiscal Year 2024 for the Main System and Public Safety with prior Main System service reflects the transfer of members to the Public Safety State Employees group.



Actuarial Valuation Results

Gain/Loss Analysis

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

	Main System	Judges	Public Safety with Prior Main System Service	Public Safety without Prior Main System Service	Total
Unfunded liability at previous valuation	\$ 1,750,648,216	\$ (6,721,299)	\$ 38,432,559	\$ 860,033	\$ 1,783,219,509
<u>Expected unfunded liability at current valuation</u>					
Normal cost for plan year	150,085,695	2,256,948	9,240,771	2,165,856	163,749,270
Interest on unfunded liability and normal cost	118,593,131	(364,688)	2,793,714	125,184	121,147,341
Contributions using actuarial rate with interest to current valuation date	<u>275,536,782</u>	<u>1,846,521</u>	<u>12,185,039</u>	<u>2,294,409</u>	<u>291,862,751</u>
Total expected change in unfunded liability at current valuation	(6,857,956)	45,739	(150,554)	(3,369)	(6,966,140)
Total expected unfunded liability at current valuation	1,743,790,260	(6,675,560)	38,282,005	856,664	1,776,253,369
Change due to:					
Amount of contributions (based on statutory rate) ¹	89,143,912	(496,948)	1,443,451	182,447	90,272,862
Amount of administrative expenses	260,391	4,803	16,128	4,704	286,026
Recognition of asset (gains)/losses	17,921,725	275,785	299,248	50,126	18,546,884
Salary experience	12,259,453	(169,857)	1,253,120	737,664	14,080,380
Retirement experience	8,953,123	(301,314)	(52,785)	32,420	8,631,444
Withdrawal experience	6,918,660	(934,504)	(106,751)	(373,899)	5,503,506
Disability experience	(226,228)	(14,250)	(10,886)	(9,055)	(260,419)
Death in Service experience	(848,236)	(13,158)	22,964	2,550	(835,880)
Death After Retirement experience	(5,242,288)	595,001	(656,299)	110,966	(5,192,620)
New entrants ²	23,192,141	84,100	2,011,112	206,865	25,494,218
Data changes and other experience	5,483,044	176,917	(491,139)	(232,598)	4,936,224
Change in actuarial assumptions	-	-	-	-	-
Changes in plan provisions	<u>(25,881,165)</u>	<u>-</u>	<u>16,742,239</u>	<u>-</u>	<u>(9,138,926)</u>
Total change	131,934,532	(793,425)	20,470,402	712,190	152,323,699
Unfunded liability at current valuation	\$ 1,875,724,792	\$ (7,468,985)	\$ 58,752,407	\$ 1,568,854	\$ 1,928,577,068

RECONCILIATION OF ACTUARIAL EMPLOYER CONTRIBUTION RATE

	Main System	Judges	Public Safety with Prior Main System Service	Public Safety without Prior Main System Service
FY 2023 Actuarial Employer Contribution Rate	14.70%	11.90%	11.40%	9.16%
Expected FY 2024 Actuarial Employer Contribution Rate ¹	14.34%	12.09%	11.26%	9.15%
Expected FY 2024 Actuarial Employer Contribution Rate with New Pay Base	14.05%	11.80%	10.85%	8.82%
Impact due to Pay Base	-0.29%	-0.29%	-0.41%	-0.33%
Change due to:				
Amount of contributions (based on statutory rate) ¹	0.46%	-0.38%	0.13%	0.07%
Amount of administrative expenses	0.02%	0.06%	0.02%	0.03%
Recognition of asset (gains)/losses	0.10%	0.21%	0.03%	0.02%
Salary experience	0.06%	-0.13%	0.11%	0.31%
Retirement experience	0.05%	-0.23%	0.00%	0.01%
Withdrawal experience	0.03%	-0.70%	-0.01%	-0.16%
Disability experience	0.00%	-0.01%	0.00%	0.00%
Death in Service experience	0.00%	-0.01%	0.00%	0.00%
Death After Retirement experience	-0.03%	0.45%	-0.06%	0.05%
New entrants ²	0.12%	0.06%	0.17%	0.09%
Data changes and other experience	0.03%	0.14%	-0.04%	-0.10%
Change in actuarial assumptions	0.00%	0.00%	0.00%	0.00%
Changes in plan provisions	<u>-0.03%</u>	<u>0.00%</u>	<u>1.17%</u>	<u>0.00%</u>
Total change	0.81%	-0.54%	1.52%	0.32%
FY 2024 Actuarial Employer Contribution Rate	14.86%	11.26%	12.37%	9.14%
FY 2024 Statutory Employer Contribution Rate	7.43%	17.52%	9.81%	7.93%

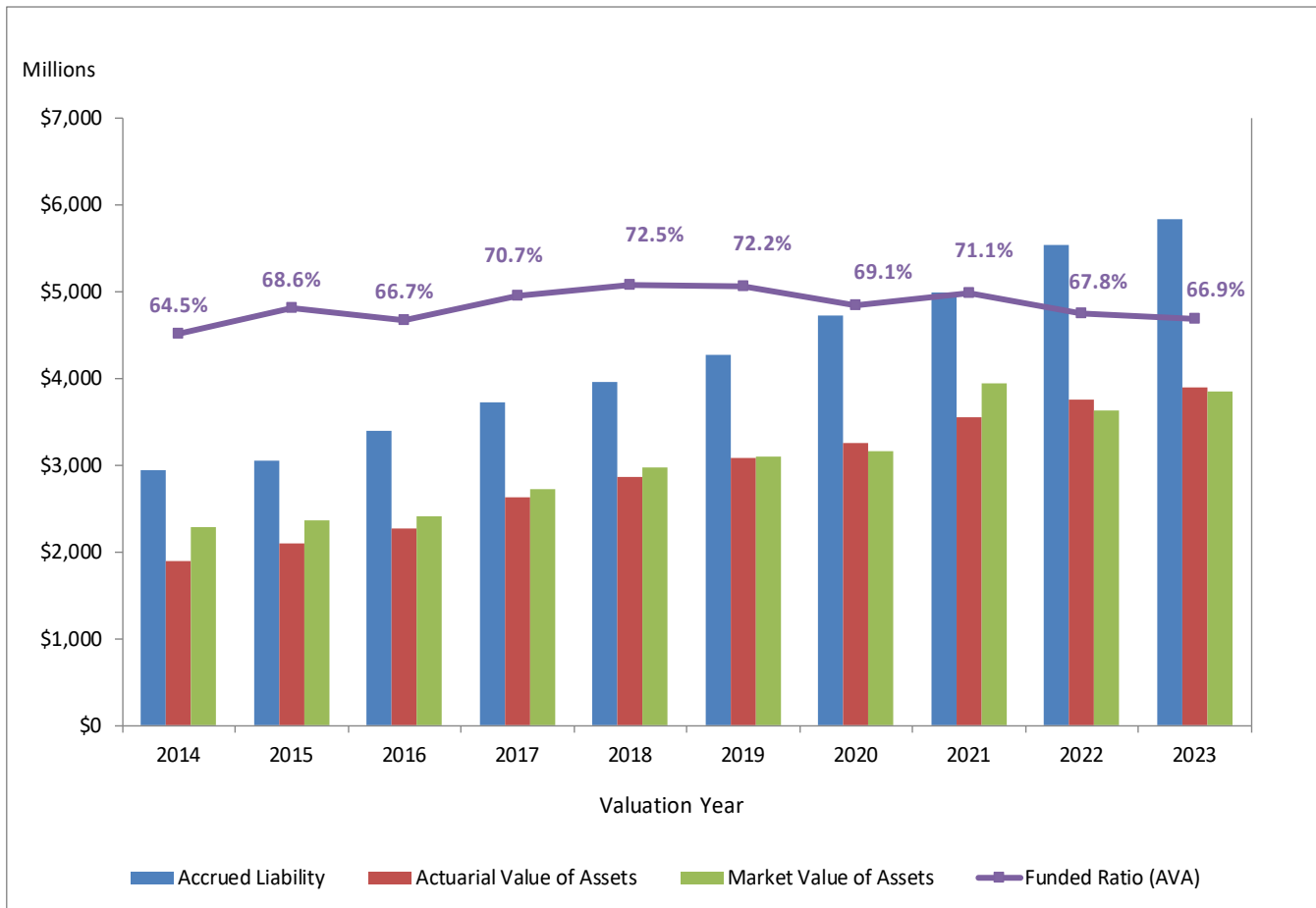
¹ Expected actuarial contribution rate is based on contributions using the actuarial rate. The change due to amount and timing of contributions is based on the statutory contributions that were made compared to the actuarial contributions.

² New entrants change includes the net impact of liability and asset transfers.

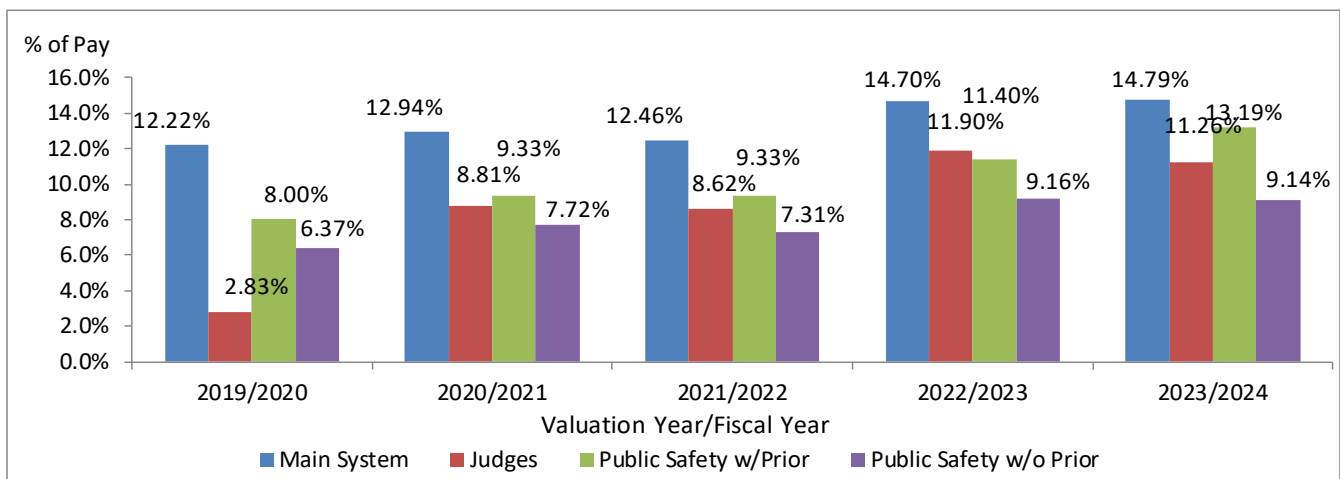


Historical Trends of Funded Ratio and Employer Contributions

Funded Ratio History



Actuarial Employer Contribution Rate History



Actuarial Valuation Results

All PERS Plans

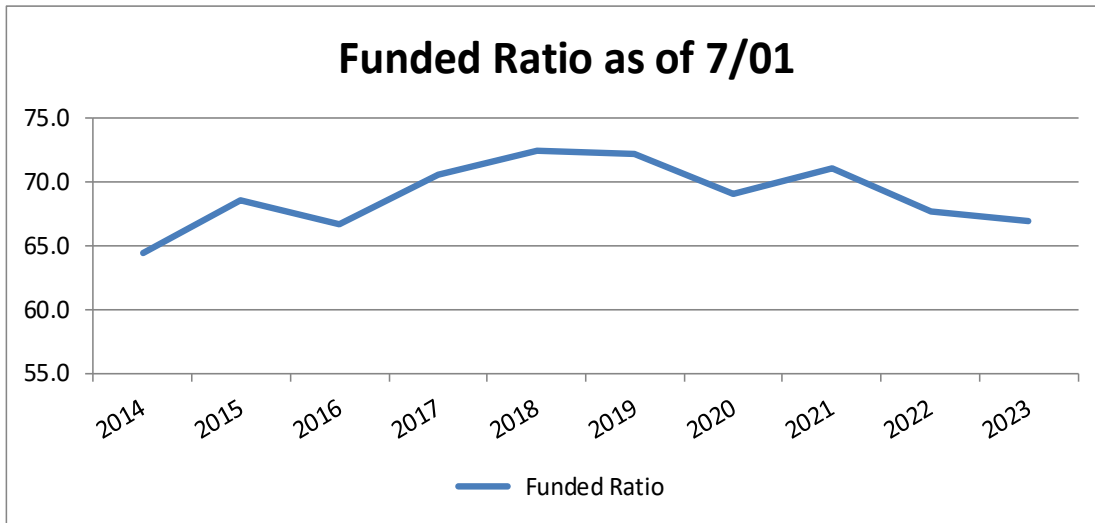
(\$ in Millions)

Valuation Date 7/1	Total Actuarial Accrued Liability	(1)	(2)	(3)	Actuarial Value of Assets	Portion (%) of Actuarial Accrued Liability		
		Active Member Contributions*	Retirees, Beneficiaries and Inactive Members	Active Members (Employer Financed Portion)		By Assets		
						(1)	(2)	(3)
2014	\$2,938.8	\$746.5	\$1,255.4	\$936.9	\$1,895.8	100%	92%	0%
2015	3,052.4	788.3	1,437.0	827.1	2,094.3	100%	91%	0%
2016	3,396.6	879.3	1,559.5	957.8	2,265.3	100%	89%	0%
2017	3,726.8	943.0	1,751.0	1,032.8	2,633.2	100%	97%	0%
2018	3,959.1	1,027.6	1,917.4	1,014.0	2,868.8	100%	96%	0%
2019	4,269.3	1,068.4	2,163.0	1,037.9	3,081.9	100%	93%	0%
2020	4,717.4	1,138.6	2,404.6	1,174.2	3,260.6	100%	88%	0%
2021	4,991.5	1,213.5	2,601.0	1,177.0	3,546.8	100%	90%	0%
2022	5,533.6	1,256.4	2,921.5	1,355.7	3,750.4	100%	85%	0%
2023	5,828.1	1,299.6	3,132.4	1,396.1	3,899.5	100%	83%	0%

*Includes vested employer contributions for members who have the Portability Enhancement Provision (PEP).

Funded Ratio History

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (a / b)
7/1/2014	\$ 1,895,837,700	\$ 2,938,752,200	\$ 1,042,914,500	64.5 %
7/1/2015	2,094,251,400	3,052,446,500	958,195,100	68.6
7/1/2016	2,265,277,641	3,396,565,467	1,131,287,826	66.7
7/1/2017	2,633,198,632	3,726,815,087	1,093,616,455	70.7
7/1/2018	2,868,788,729	3,959,094,976	1,090,306,247	72.5
7/1/2019	3,081,881,908	4,269,339,965	1,187,458,057	72.2
7/1/2020	3,260,582,816	4,717,407,497	1,456,824,681	69.1
7/1/2021	3,546,820,478	4,991,542,997	1,444,722,519	71.1
7/1/2022	3,750,359,666	5,533,579,175	1,783,219,509	67.8
7/1/2023	3,899,548,509	5,828,125,577	1,928,577,068	66.9



Schedule of Funding Progress

Valuation Year	Actuarial Accrued Liabilities	Valuation Assets	Unfunded Actuarial Accrued Liabilities	Ratio of Assets to AAL	Active Member Payroll	UAAL as Percent of Active Member Payroll
2014	\$ 2,938,752,200	\$ 1,895,837,700	\$ 1,042,914,500	64.5%	\$ 888,452,060	117.4%
2015	3,052,446,500	2,094,251,400	958,195,100	68.6%	973,536,402	98.4%
2016	3,396,565,467	2,265,277,641	1,131,287,826	66.7%	1,048,548,467	107.9%
2017	3,726,815,087	2,633,198,632	1,093,616,455	70.7%	1,063,371,798	102.8%
2018	3,959,094,976	2,868,788,729	1,090,306,247	72.5%	1,075,957,954	101.3%
2019	4,269,339,965	3,081,881,908	1,187,458,057	72.2%	1,098,416,146	108.1%
2020	4,717,407,497	3,260,582,816	1,456,824,681	69.1%	1,167,767,935	124.8%
2021	4,991,542,997	3,546,820,478	1,444,722,519	71.1%	1,213,675,937	119.0%
2022	5,533,579,175	3,750,359,666	1,783,219,509	67.8%	1,248,307,560	142.9%
2023	5,828,125,577	3,899,548,509	1,928,577,068	66.9%	1,318,276,116	146.3%

¹The active member payroll is approximated based on figures from the NDPERS Comprehensive Annual Financial Report.

Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a “Low-Default-Risk Obligation Measure (LDROM)” to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

- A. Low-Default-Risk Obligation Measure of benefits earned as of the measurement date:
\$7,139,548,554
- B. Discount rate used to calculate the LDROM: FTSE Pension Liability Index – Intermediate Single Equivalent Rate of 4.90 percent as of June 30, 2023
- C. Other significant assumptions that differ from those used for the funding valuation: none
- D. Actuarial cost method used to calculate the LDROM: Entry Age Actuarial Cost Method
- E. Valuation procedures to value any significant plan provisions that are difficult to measure using traditional valuation procedures, and that differ from the procedures used in the funding valuation: none
- F. Commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits: The LDROM is a market-based measurement of the pension obligation. It estimates the amount the plan would need to invest in low risk securities to provide the benefits with greater certainty. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation.

The difference between the two measures (Valuation and LDROM) is one illustration of the savings the sponsor anticipates by taking on the risk in a diversified portfolio.

SECTION B

ASSET EXHIBITS

Statement of Fiduciary Net Position (Total PERS)

	Fiscal Year Ending	
	June 30, 2022	June 30, 2023
Assets		
Cash	\$ 19,350,154	\$ 20,135,526
Receivables		
Contribution receivable	11,011,361	13,078,615
Interest receivable	8,369,490	7,983,009
Due from other fiduciary funds	-	-
Due from Uniform Group Insurance Plan	-	-
Due from other state agencies	-	-
Total receivables	19,380,851	21,061,624
Investments		
External Investment Pool	3,599,792,150	3,807,263,994
Equities	-	-
Fixed income	-	-
Real estate	-	-
Mutual funds	-	-
Annuities	-	-
Alternative investments	-	-
Invested cash	-	-
Total Investments	3,599,792,150	3,807,263,994
Prepaid expenses	-	-
Invested Securities Lending Collateral	23,022,445	26,778,457
Machinery & Equipment	-	4,459
Capital assets (net of depreciation/ amortization)	174,532	137,387
Total assets	3,661,720,132	3,875,381,447
Liabilities		
Salaries payable	119,901	159,382
Accounts payable	2,697,848	3,973,724
Due to Proprietary Funds	-	422,817
Due to Uniform Group Insurance Plan	-	-
Securities Lending Collateral	23,022,445	26,778,457
Due to other state agencies	14,068	15,084
Accrued compensated absences	93,968	91,241
Total liabilities	25,948,230	31,440,705
Net position restricted for pensions	<u>\$ 3,635,771,902</u>	<u>\$ 3,843,940,742</u>



Statement of Changes in Fiduciary Net Position (Total PERS)

	Fiscal Year Ending	
	June 30, 2022	June 30, 2023
Additions		
Contributions:		
From employer	\$ 96,630,783	\$ 101,933,327
From employee	89,633,939	93,407,915
Transfer from general fund	-	-
Transfers from other plans	-	-
Total contributions	186,264,722	195,341,242
Investment income:		
Net change in fair value of investments	(315,774,045)	235,395,847
Interest and dividends	68,878,159	56,987,131
Less investment expense	(9,307,158)	(10,704,698)
Net investment income	(256,203,044)	281,678,280
Securities Lending Income	130,680	171,284
Repurchase service credit	10,249,235	5,151,247
Miscellaneous income	14,125	10,885
Total additions	(59,544,282)	482,352,938
Deductions		
Benefits paid to participants	236,144,369	253,174,353
Refunds	15,758,175	18,023,294
Transfers to other plans	163,705	316,367
	252,066,249	271,514,014
Administrative expenses	2,340,267	2,670,084
Total deductions	254,406,516	274,184,098
Change in net position	(313,950,798)	208,168,840
Net position restricted for pensions		
Beginning of year	3,949,722,700	3,635,771,902
End of year	\$ 3,635,771,902	\$ 3,843,940,742



Market Value of Assets by Plan (Total PERS)

	Fiscal Year Ending									
	June 30, 2022					June 30, 2023				
	Main System	Judges	Public Safety with Prior Main System Service	Public Safety without Prior Main System Service	Total PERS	Main System	Judges	Public Safety with Prior Main System Service	Public Safety without Prior Main System Service	Total PERS
Additions										
Contributions:										
From employer	\$ 87,430,734	\$ 1,661,040	\$ 6,507,951	\$ 1,031,058	\$ 96,630,783	\$ 92,511,041	\$ 1,558,939	\$ 6,658,082	\$ 1,205,265	\$ 101,933,327
From employee	84,487,263	758,464	3,670,857	717,355	89,633,939	88,104,240	711,890	3,750,551	841,234	93,407,915
Transfer from general fund	-	-	-	-	-	-	-	-	-	-
Transfers from other plans	(226,926)	-	226,926	-	-	(204,027)	-	204,027	-	-
Total contributions	171,691,071	2,419,504	10,405,734	1,748,413	186,264,722	180,411,254	2,270,829	10,612,660	2,046,499	195,341,242
Investment income	(243,036,606)	(4,454,988)	(7,561,811)	(1,149,639)	(256,203,044)	266,359,318	4,893,127	9,017,377	1,408,458	281,678,280
Securities Lending Income	130,680	-	-	-	130,680	171,284	-	-	-	171,284
Repurchase service credit	10,069,185	-	106,004	74,046	10,249,235	5,033,602	-	98,918	18,727	5,151,247
Miscellaneous income	14,125	-	-	-	14,125	10,885	-	-	-	10,885
Total additions	(61,131,545)	(2,035,484)	2,949,927	672,820	(59,544,282)	451,986,343	7,163,956	19,728,955	3,473,684	482,352,938
Deductions										
Total Benefits, Refunds and Transfers	244,406,592	3,616,361	3,789,629	253,667	252,066,249	263,380,371	3,673,175	4,194,767	265,701	271,514,014
Administrative expenses	2,250,049	6,248	65,321	18,649	2,340,267	2,552,994	11,044	82,419	23,627	2,670,084
Total deductions	246,656,641	3,622,609	3,854,950	272,316	254,406,516	265,933,365	3,684,219	4,277,186	289,328	274,184,098
Change in net position	(307,788,186)	(5,658,093)	(905,023)	400,504	(313,950,798)	186,052,978	3,479,737	15,451,769	3,184,356	208,168,840
Net position restricted for pensions										
Beginning of year	3,752,753,612	68,256,490	111,897,170	16,815,428	3,949,722,700	3,444,965,426	62,598,397	110,992,147	17,215,932	3,635,771,902
End of year	\$ 3,444,965,426	\$ 62,598,397	\$ 110,992,147	\$ 17,215,932	\$ 3,635,771,902	\$ 3,631,018,404	\$ 66,078,134	\$ 126,443,916	\$ 20,400,288	\$ 3,843,940,742

Numbers may not add due to rounding.



Development of Actuarial Value of Assets (Total PERS)

Fiscal Year Ending	2022	2023	2024	2025	2026	2027
Beginning of Year:						
(1) Market Value of Assets	\$ 3,949,722,700	\$ 3,635,771,902				
(2) Actuarial Value of Assets ¹	3,546,820,478	3,750,359,666				
End of Year:						
(3) Market Value of Assets	3,635,771,902	3,843,940,742				
(4a) Contributions (Incl. repurchase svc credit)	196,528,082	200,503,374				
(4b) Net Disbursements	254,406,516	274,184,098				
(5) Total Investment Income	(256,072,364)	281,849,564				
= (3) - (1) - (4a) + (4b)						
(6) Projected Rate of Return	7.00%	6.50%				
(7) Projected Investment Income						
= (1) x (6) + [(1 + (6)) ⁵ - 1] x (4a - 4b)	274,489,105	233,968,247				
(8) Asset Adjustment	-	-				
(9) Investment Income in Excess of Projected Income	(530,561,469)	47,881,317				
(10) Excess Investment Income Recognized This Year (5-year recognition)						
(10a) From This Year	\$ (106,112,294)	\$ 9,576,263				
(10b) From One Year Ago	125,166,790	(106,112,294)	\$ 9,576,263			
(10c) From Two Years Ago	(25,909,518)	125,166,790	(106,112,294)	\$ 9,576,263		
(10d) From Three Years Ago	(13,819,919)	(25,909,518)	125,166,790	(106,112,294)	\$ 9,576,263	
(10e) From Four Years Ago	7,603,458	(13,819,921)	(25,909,519)	125,166,789	(106,112,293)	\$ 9,576,265
(10f) Total Recognized Investment Gain/(Loss)	(13,071,483)	(11,098,680)	2,721,240	28,630,758	(96,536,030)	9,576,265
(11) Change in Actuarial Value of Assets = (4a) - (4b) + (7) + (8) + (10f)	203,539,188	149,188,843				
End of Year:						
(3) Market Value of Assets	\$ 3,635,771,902	\$ 3,843,940,742				
(12) Final Actuarial Value of Assets as of 6/30 = (2) + (11)	\$ 3,750,359,666	\$ 3,899,548,509				
(13) Difference between Market & Actuarial Values	(114,587,764)	(55,607,767)				
(14) Estimated Market Value Rate of Return on Total Plan Assets	(6.53)%	7.83%				
(15) Actuarial Value Rate of Return	7.43%	6.00%				
(16) Ratio of Actuarial Value to Market Value	103.2%	101.4%				

¹Asset gains and losses in FY 2016 and prior were fully recognized as of July 1, 2017, and subsequent asset gains/losses are smoothed in over a five-year period.



Actuarial Value of Assets by Plan (Total PERS)

Valuation as of July 1, 2023					
	Main System	Judges	Public Safety with Prior	Public Safety without Prior	Total
Market Value of Assets	\$ 3,631,018,404	\$ 66,078,134	\$ 126,443,916	\$ 20,400,288	\$ 3,843,940,742
% of Total	94.46%	1.72%	3.29%	0.53%	100.00%
Actuarial Value of Assets	\$ 3,683,545,963	\$ 67,034,043	\$ 128,273,097	\$ 20,695,406	\$ 3,899,548,509
% of Total	94.46%	1.72%	3.29%	0.53%	100.00%
Ratio of Actuarial Value to Market Value	101.45%	101.45%	101.45%	101.45%	101.45%
Difference between Market Value and Actuarial Value	\$ (52,527,559)	\$ (955,909)	\$ (1,829,181)	\$ (295,118)	\$ (55,607,767)

Valuation as of July 1, 2022					
	Main System	Judges	Public Safety with Prior	Public Safety without Prior	Total
Market Value of Assets	\$ 3,444,965,426	\$ 62,598,397	\$ 110,992,147	\$ 17,215,932	\$ 3,635,771,902
% of Total	94.75%	1.72%	3.05%	0.47%	100.00%
Actuarial Value of Assets	\$ 3,553,539,588	\$ 64,571,296	\$ 114,490,260	\$ 17,758,522	\$ 3,750,359,666
% of Total	94.75%	1.72%	3.05%	0.47%	100.00%
Ratio of Actuarial Value to Market Value	103.15%	103.15%	103.15%	103.15%	103.15%
Difference between Market Value and Actuarial Value	\$ (108,574,162)	\$ (1,972,899)	\$ (3,498,113)	\$ (542,590)	\$ (114,587,764)

Market value of assets by plan provided by NDPERS Staff.

Actuarial value of assets by plan allocated based on the proportion of the market value of assets as of the actuarial valuation date.

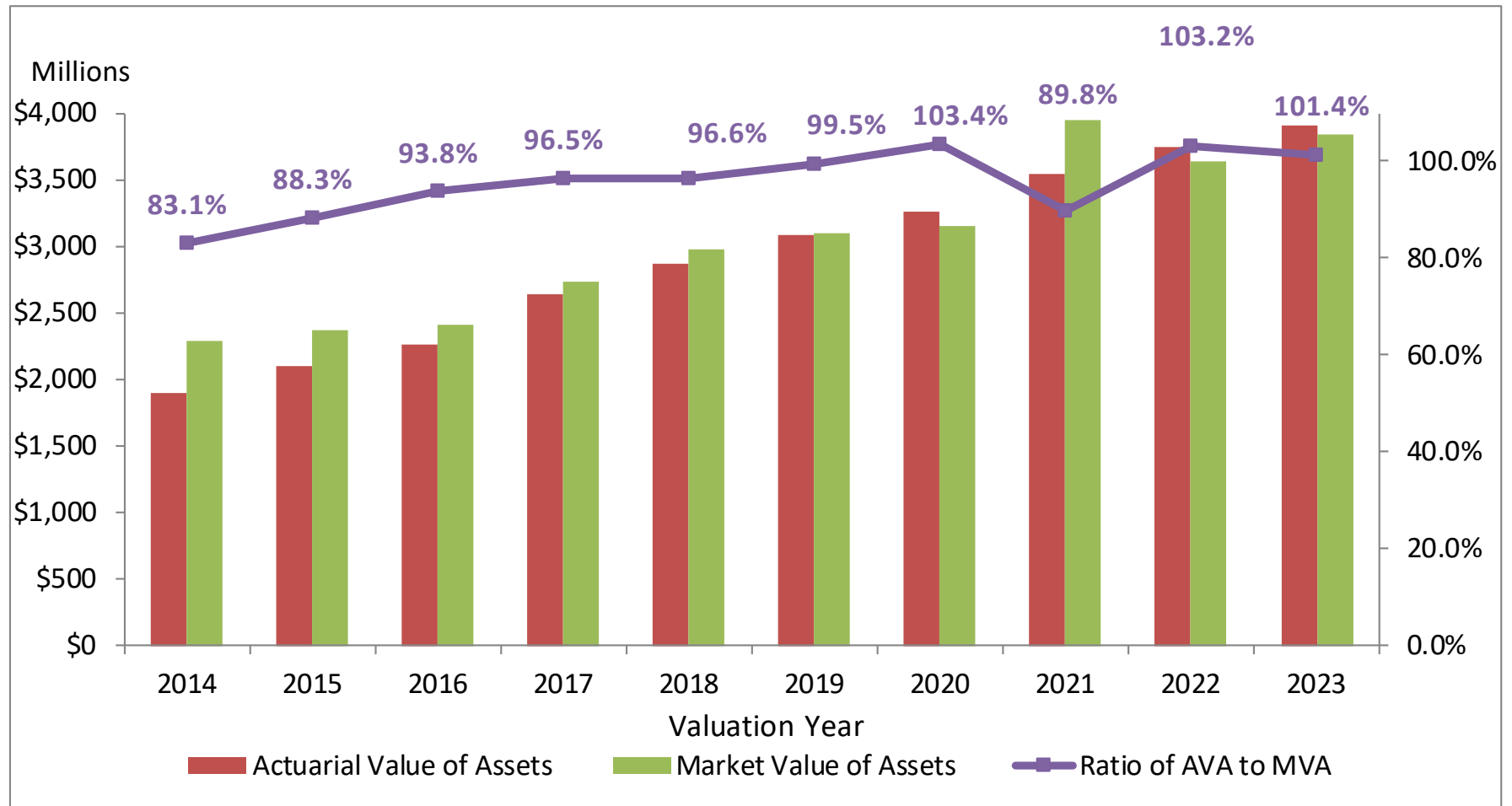
Changes in Actuarial Value of Assets (Total PERS)

Date	Employer Contributions	Member Contributions ¹	Transfers from/(to) Other Funds	Administrative Expenses	Benefit Payments and Refunds	Actuarial Value Investment Income	Actuarial Value of Assets at End of Year	Market Value of Assets at End of Year
7/1/2014	\$61,661,050	\$67,719,340	(\$347,783)	\$(2,158,712)	\$(119,538,541)	\$205,543,853	\$1,895,837,734	\$2,281,582,863
7/1/2015	70,842,535	75,043,940	(584,727)	(2,365,357)	(134,397,090)	189,874,321	2,094,251,356	2,371,710,809
7/1/2016	77,080,576	83,397,439	23,176,288	(2,537,799)	(149,265,492)	139,175,273	2,265,277,641	2,414,895,657
7/1/2017	78,933,571	87,812,526	(239,609)	(2,607,243)	(162,752,359)	366,774,105	2,633,198,632	2,727,835,589
7/1/2018	80,727,209	97,446,721	(190,727)	(2,472,761)	(182,330,936)	242,410,591	2,868,788,729	2,970,180,276
7/1/2019	81,588,318	85,427,636	(330,963)	(2,531,304)	(197,426,974)	246,366,466	3,081,881,908	3,096,731,081
7/1/2020	85,504,033	92,293,674	(118,721)	(2,729,759)	(218,435,167)	222,186,848	3,260,582,816	3,154,351,139
7/1/2021	91,265,640	93,042,302	(93,418)	(2,569,186)	(231,206,986)	335,799,310	3,546,820,478	3,949,722,700
7/1/2022	96,630,783	99,897,299	(163,705)	(2,340,267)	(251,902,544)	261,417,622	3,750,359,666	3,635,771,902
7/1/2023	101,933,327	98,570,047	(316,367)	(2,670,084)	(271,197,647)	222,869,567	3,899,548,509	3,843,940,742
10-Year Total	826,167,042	880,650,924	20,790,268	(24,982,472)	(1,918,453,736)	2,432,417,956		

¹ Includes repurchases of service credit and miscellaneous income.



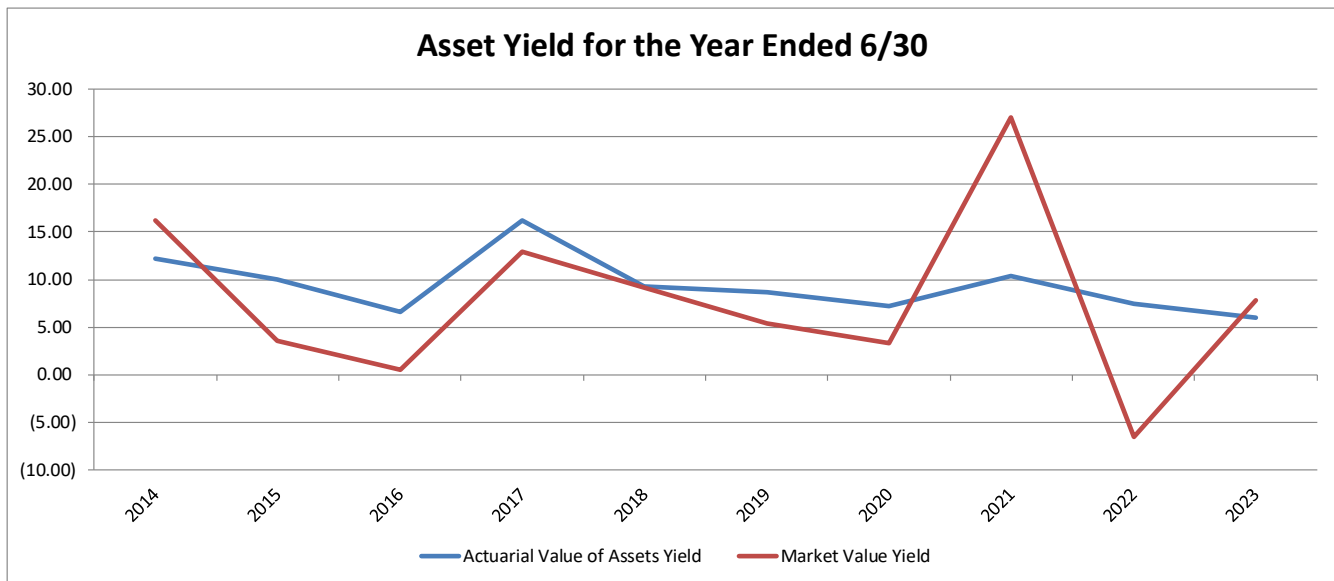
Historical Comparison of Actuarial Value of Assets to Market Value of Assets (Total PERS)



Values prior to July 1, 2016, were calculated by the prior actuary.

Historical Comparison of Total Investment Income (Total PERS)

Actuarial Valuation Date	Non-Investment Income Amount	Total Investment Income (Actuarial Assets Basis)			Total Investment Income (Market Assets Basis)		
		Amount	Yield	Actuarial Value of Assets	Amount	Yield	Market Value of Assets
7/1/2014	\$ 7,335,354	\$ 205,543,853	12.19 %	\$ 1,895,837,734	\$ 316,577,483	16.14 %	\$ 2,281,582,863
7/1/2015	8,539,301	189,874,321	9.99	2,094,251,356	81,588,645	3.57	2,371,710,809
7/1/2016	31,851,012	139,175,273	6.60	2,265,277,641	11,333,836	0.47	2,414,895,657
7/1/2017	1,146,886	366,774,105	16.19	2,633,198,632	311,793,046	12.91	2,727,835,589
7/1/2018	(6,820,494)	242,410,591	9.22	2,868,788,729	249,165,181	9.15	2,970,180,276
7/1/2019	(33,273,287)	246,366,466	8.64	3,081,881,908	159,824,092	5.41	3,096,731,081
7/1/2020	(43,485,940)	222,186,848	7.26	3,260,582,816	101,105,998	3.29	3,154,351,139
7/1/2021	(49,561,648)	335,799,310	10.38	3,546,820,478	844,933,209	27.00	3,949,722,700
7/1/2022	(57,878,434)	261,417,622	7.43	3,750,359,666	(256,072,364)	(6.53)	3,635,771,902
7/1/2023	(73,680,724)	222,869,567	6.00	3,899,548,509	281,849,564	7.83	3,843,940,742
10-Year Total	(215,827,974)	2,432,417,956	9.39		2,102,098,690	7.92	



Values prior to July 1, 2016, were calculated by the prior actuary.

SECTION C

ACTUARIAL VALUATION DATA

Summary of Participant Data (July 1, 2022, and July 1, 2023)

	Valuation as of July 1, 2023				
			Public Safety w/ Prior Main	Public Safety w/o Prior Main	
	Main System	Judges	System Service	System Service	Total
Active Members					
Number	23,678	57	1,044	240	25,019
Average Age	45.8	56.0	36.7	37.8	45.4
Average Vesting Service	9.2	15.8	8.0	6.4	9.1
Total Payroll	\$ 1,222,870,520	\$ 8,954,748	\$ 71,555,079	\$ 14,895,770	\$ 1,318,276,116
Inactive Members ¹					
Number	7,624	3	279	111	8,017
Total Benefits	\$ 50,531,448	\$ 107,712	\$ 1,833,570	\$ 416,184	\$ 52,888,914
Inactive Members Elected Refunds ¹					
Number	9,290	-	220	75	9,585
Total Account Balance	\$ 41,255,637	\$ -	\$ 1,400,621	\$ 234,082	\$ 42,890,340
Retired, Disabled and Beneficiary Members					
Number	14,755	66	158	18	14,997
Total Benefits	\$ 250,681,557	\$ 3,921,734	\$ 3,535,545	\$ 228,899	\$ 258,367,734
Total Membership	55,347	126	1,701	444	57,618

	Valuation as of July 1, 2022				
			Public Safety w/ Prior Main System Service	Public Safety w/o Prior Main System Service	Total
	Main System	Judges			
Active Members					
Number	23,487	57	990	245	24,779
Average Age	46.1	56.9	36.7	38.2	45.7
Average Vesting Service	9.3	16.0	7.9	6.3	9.3
Total Payroll	\$ 1,160,836,487	\$ 8,729,372	\$ 64,746,118	\$ 13,995,584	\$ 1,248,307,560
Inactive Members ¹					
Number	7,284	2	238	86	7,610
Total Benefits	\$ 47,230,786	\$ 55,333	\$ 1,587,054	\$ 296,847	\$ 49,170,020
Inactive Members Elected Refunds ¹					
Number	8,427	-	186	60	8,673
Total Account Balance	\$ 34,772,453	\$ -	\$ 1,174,144	\$ 183,948	\$ 36,130,545
Retired, Disabled and Beneficiary Members					
Number	13,977	64	148	15	14,204
Total Benefits	\$ 233,423,378	\$ 3,685,840	\$ 3,271,877	\$ 145,675	\$ 240,526,769
Total Membership	53,175	123	1,562	406	55,266

¹Includes transferred members.



Age/Service/Salary by Group as of July 1, 2023

Main System

Vesting Service as of Valuation Date										Contribution	
Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 and Over	Totals	Valuation Payroll	Account Balance *
Under 20	85	-	-	-	-	-	-	-	85	\$ 2,327,819	\$ 91,956
20-24	1,048	8	-	-	-	-	-	-	1,056	36,628,561	3,652,525
25-29	1,569	216	4	-	-	-	-	-	1,789	78,753,440	16,793,478
30-34	1,588	708	143	2	-	-	-	-	2,441	119,943,118	46,173,986
35-39	1,494	839	484	156	1	-	-	-	2,974	155,776,862	93,334,928
40-44	1,297	734	492	430	97	6	-	-	3,056	168,374,759	134,906,355
45-49	935	677	432	369	279	91	9	-	2,792	154,247,835	162,190,800
50-54	862	551	437	392	276	257	94	7	2,876	160,568,743	211,853,466
55-59	764	473	426	363	310	233	180	89	2,838	154,195,682	237,961,719
60-64	552	469	435	377	332	186	138	202	2,691	141,931,519	244,255,556
65-69	203	161	133	105	75	51	30	66	824	40,371,203	70,585,513
70-74	47	44	30	25	13	16	5	14	194	7,913,433	13,315,669
75 and Over	21	11	8	9	2	2	5	4	62	1,837,546	2,662,295
Total	10,465	4,891	3,024	2,228	1,385	842	461	382	23,678	\$ 1,222,870,520	\$ 1,237,778,245

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

Previous Valuation		Current Valuation		Change
Average Age:	46.1	Average Age:	45.8	(0.3)
Average Vesting Service:	9.3	Average Vesting Service:	9.2	(0.1)
Average Annual Pay:	\$49,425	Average Annual Pay:	\$51,646	\$2,221
Average Account Balance:	\$51,029	Average Account Balance:	\$52,275	\$1,246
Vested Participants	16,276	Vested Participants	16,260	(16)
Nonvested Participants	7,211	Nonvested Participants	7,418	207
Total Participants	23,487	Total Participants	23,678	191

Annualized Salary as of Valuation Date											Totals
Current Age	Less Than \$20,000	\$20,000-\$29,999	\$30,000-\$39,999	\$40,000-\$49,999	\$50,000-\$59,999	\$60,000-\$69,999	\$70,000-\$79,999	\$80,000-\$89,999	\$90,000-\$99,999	\$100,000 & Over	
Under 20	27	30	11	14	3	-	-	-	-	-	85
20-24	199	268	175	220	144	41	9	-	-	-	1,056
25-29	149	270	259	429	401	180	68	18	7	8	1,789
30-34	170	303	306	514	489	336	173	70	44	36	2,441
35-39	209	377	331	518	523	443	248	142	80	103	2,974
40-44	199	351	328	491	550	413	278	169	110	167	3,056
45-49	176	331	314	480	437	380	265	156	87	166	2,792
50-54	133	348	346	486	482	404	262	145	88	182	2,876
55-59	148	341	382	483	502	394	214	127	78	169	2,838
60-64	143	324	395	527	477	307	209	123	66	120	2,691
65-69	95	120	136	152	113	76	46	28	15	43	824
70-74	44	44	25	24	28	14	3	5	-	7	194
75 and Over	20	14	16	4	3	4	1	-	-	-	62
Total	1,712	3,121	3,024	4,342	4,152	2,992	1,776	983	575	1,001	23,678

*Contribution account balance includes Portability Enhancement Provision (PEP) balance.



Age/Service/Salary by Group as of July 1, 2023

Judges

Current Age	Vesting Service as of Valuation Date								Totals	Valuation Payroll	Contribution	
	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 and Over			Account Balance	
Under 20	-	-	-	-	-	-	-	-	0	\$ -	\$ -	-
20-24	-	-	-	-	-	-	-	-	0	-	-	-
25-29	-	-	-	-	-	-	-	-	0	-	-	-
30-34	-	-	-	-	-	-	-	-	0	-	-	-
35-39	-	1	-	-	-	-	-	-	1	155,219	23,921	-
40-44	2	3	3	-	-	-	-	-	8	1,245,103	470,806	-
45-49	-	4	1	3	-	-	-	-	8	1,260,106	831,833	-
50-54	1	1	1	2	3	1	1	-	10	1,556,602	1,677,246	-
55-59	1	1	1	2	3	-	-	-	8	1,260,485	1,099,520	-
60-64	-	1	1	1	2	1	1	1	8	1,268,179	1,549,480	-
65-69	-	2	1	5	1	-	1	1	11	1,743,395	3,031,820	-
70-74	-	1	2	-	-	-	-	-	3	465,658	436,392	-
75 and Over	-	-	-	-	-	-	-	-	0	-	-	-
Total	4	14	10	13	9	2	3	2	57	\$ 8,954,748	\$ 9,121,018	-

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

Previous Valuation		Current Valuation		Change
Average Age:	56.9	Average Age:	56.0	(0.9)
Average Vesting Service:	16.0	Average Vesting Service:	15.8	(0.2)
Average Annual Pay:	\$153,147	Average Annual Pay:	\$157,101	\$3,954
Average Account Balance:	\$169,139	Average Account Balance:	\$160,018	(\$9,121)
Vested Participants	55	Vested Participants	55	0
Nonvested Participants	2	Nonvested Participants	2	0
Total Participants	57	Total Participants	57	0

Current Age	Annualized Salary as of Valuation Date										Totals
	Less Than \$20,000	\$20,000-\$29,999	\$30,000-\$39,999	\$40,000-\$49,999	\$50,000-\$59,999	\$60,000-\$69,999	\$70,000-\$79,999	\$80,000-\$89,999	\$90,000-\$99,999	\$100,000 & Over	
Under 20	-	-	-	-	-	-	-	-	-	-	0
20-24	-	-	-	-	-	-	-	-	-	-	0
25-29	-	-	-	-	-	-	-	-	-	-	0
30-34	-	-	-	-	-	-	-	-	-	-	0
35-39	-	-	-	-	-	-	-	-	-	1	1
40-44	-	-	-	-	-	-	-	-	-	8	8
45-49	-	-	-	-	-	-	-	-	-	8	8
50-54	-	-	-	-	-	-	-	-	-	10	10
55-59	-	-	-	-	-	-	-	-	-	8	8
60-64	-	-	-	-	-	-	-	-	-	8	8
65-69	-	-	-	-	-	-	-	-	-	11	11
70-74	-	-	-	-	-	-	-	-	-	3	3
75 and Over	-	-	-	-	-	-	-	-	-	-	0
Total	0	0	0	0	0	0	0	0	0	57	57



Age/Service/Salary by Group as of July 1, 2023

Public Safety with Prior Main System Service

	Vesting Service as of Valuation Date										Contribution	
Current Age	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 and Over	Totals	Valuation Payroll	Account Balance *	
Under 20	9	-	-	-	-	-	-	-	9	\$ 320,252	\$ 7,564	
20-24	105	-	-	-	-	-	-	-	105	5,705,731	425,761	
25-29	116	61	-	-	-	-	-	-	177	10,852,280	2,521,869	
30-34	82	114	27	-	-	-	-	-	223	14,541,036	5,579,598	
35-39	38	66	65	14	1	-	-	-	184	13,597,274	8,181,057	
40-44	29	34	40	24	6	1	-	-	134	9,820,457	7,732,308	
45-49	14	16	9	21	18	5	-	-	83	6,608,175	6,543,727	
50-54	16	11	7	15	16	6	2	-	73	5,782,902	7,623,975	
55-59	10	5	3	10	4	1	6	-	39	2,939,306	3,730,083	
60-64	1	3	2	2	3	3	2	-	16	1,308,540	2,417,957	
65-69	-	-	-	1	-	-	-	-	1	79,127	83,668	
70-74	-	-	-	-	-	-	-	-	0	-	-	
75 and Over	-	-	-	-	-	-	-	-	0	-	-	
Total	420	310	153	87	48	16	10	0	1,044	\$ 71,555,079	\$ 44,847,567	

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

Previous Valuation		Current Valuation		Change
Average Age:	36.7	Average Age:	36.7	0.0
Average Vesting Service:	7.9	Average Vesting Service:	8.0	0.1
Average Annual Pay:	\$65,400	Average Annual Pay:	\$68,539	\$3,139
Average Account Balance:	\$40,836	Average Account Balance:	\$42,957	\$2,121
Vested Participants	752	Vested Participants	779	27
Nonvested Participants	238	Nonvested Participants	265	27
Total Participants	990	Total Participants	1,044	54

Current Age	Annualized Salary as of Valuation Date										Totals
	Less Than \$20,000	\$20,000-\$29,999	\$30,000-\$39,999	\$40,000-\$49,999	\$50,000-\$59,999	\$60,000-\$69,999	\$70,000-\$79,999	\$80,000-\$89,999	\$90,000-\$99,999	\$100,000 & Over	
Under 20	3	-	1	3	1	1	-	-	-	-	9
20-24	-	8	2	28	35	23	9	-	-	-	105
25-29	6	1	2	21	45	53	37	11	1	-	177
30-34	1	2	3	21	42	85	41	19	5	4	223
35-39	1	3	-	8	24	43	36	42	16	11	184
40-44	2	2	1	7	19	18	41	26	11	7	134
45-49	1	-	1	5	11	6	15	21	10	13	83
50-54	-	-	-	6	10	6	21	12	8	10	73
55-59	-	-	-	4	6	7	7	8	3	4	39
60-64	-	-	-	-	2	3	5	1	1	4	16
65-69	-	-	-	-	-	-	1	-	-	-	1
70-74	-	-	-	-	-	-	-	-	-	-	0
75 and Over	-	-	-	-	-	-	-	-	-	-	0
Total	14	16	10	103	195	245	213	140	55	53	1,044

*Contribution account balance includes Portability Enhancement Provision (PEP) balance.



Age/Service/Salary by Group as of July 1, 2023

Public Safety without Prior Main System Service

Current Age	Vesting Service as of Valuation Date								Totals	Valuation Payroll	Contribution Account Balance *
	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 and Over			
Under 20	3	-	-	-	-	-	-	-	3	\$ 123,134	\$ 1,691
20-24	32	-	-	-	-	-	-	-	32	1,583,310	115,316
25-29	30	7	-	-	-	-	-	-	37	1,950,286	240,378
30-34	26	9	2	-	-	-	-	-	37	2,160,769	476,071
35-39	14	11	3	2	-	-	-	-	30	1,887,935	830,160
40-44	18	12	6	5	1	-	-	-	42	2,809,993	1,450,696
45-49	9	4	3	3	1	-	-	-	20	1,467,463	603,918
50-54	4	1	7	3	1	1	-	-	17	1,127,493	1,179,013
55-59	3	1	5	2	1	-	1	-	13	1,010,842	1,536,737
60-64	2	2	1	3	-	-	-	-	8	694,932	1,011,125
65-69	-	-	-	-	-	1	-	-	1	79,615	400,196
70-74	-	-	-	-	-	-	-	-	0	-	-
75 and Over	-	-	-	-	-	-	-	-	0	-	-
Total	141	47	27	18	4	2	1	0	240	\$ 14,895,770	\$ 7,845,299

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

Previous Valuation		Current Valuation		Change
Average Age:	38.2	Average Age:	37.8	(0.4)
Average Vesting Service:	6.3	Average Vesting Service:	6.4	0.1
Average Annual Pay:	\$57,125	Average Annual Pay:	\$62,066	\$4,941
Average Account Balance:	\$32,024	Average Account Balance:	\$32,689	\$665
Vested Participants	164	Vested Participants	162	(2)
Nonvested Participants	81	Nonvested Participants	78	(3)
Total Participants	245	Total Participants	240	(5)

Current Age	Annualized Salary as of Valuation Date										Totals
	Less Than \$20,000	\$20,000-\$29,999	\$30,000-\$39,999	\$40,000-\$49,999	\$50,000-\$59,999	\$60,000-\$69,999	\$70,000-\$79,999	\$80,000-\$89,999	\$90,000-\$99,999	\$100,000 & Over	
Under 20	-	1	-	1	1	-	-	-	-	-	3
20-24	-	1	5	6	18	2	-	-	-	-	32
25-29	-	1	-	9	21	6	-	-	-	-	37
30-34	-	-	1	4	16	13	3	-	-	-	37
35-39	-	-	-	4	11	6	5	3	1	-	30
40-44	-	1	1	3	6	15	11	3	1	1	42
45-49	-	1	-	-	2	7	3	3	3	1	20
50-54	-	-	1	2	4	3	2	4	1	-	17
55-59	-	-	-	-	2	2	4	3	1	1	13
60-64	-	-	-	-	-	3	1	1	1	2	8
65-69	-	-	-	-	-	-	1	-	-	-	1
70-74	-	-	-	-	-	-	-	-	-	-	0
75 and Over	-	-	-	-	-	-	-	-	-	-	0
Total	0	5	8	29	81	57	30	17	8	5	240

*Contribution account balance includes Portability Enhancement Provision (PEP) balance.



Age/Service/Salary by Group as of July 1, 2023

Combined Main System, Judges and Public Safety

Current Age	Vesting Service as of Valuation Date								Totals	Valuation Payroll	Contribution Account Balance *
	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 and Over			
Under 20	97	-	-	-	-	-	-	-	97	\$ 2,771,205	\$ 101,211
20-24	1,185	8	-	-	-	-	-	-	1,193	43,917,602	4,193,601
25-29	1,715	284	4	-	-	-	-	-	2,003	91,556,005	19,555,724
30-34	1,696	831	172	2	-	-	-	-	2,701	136,644,923	52,229,656
35-39	1,546	917	552	172	2	-	-	-	3,189	171,417,290	102,370,066
40-44	1,346	783	541	459	104	7	-	-	3,240	182,250,312	144,560,165
45-49	958	701	445	396	298	96	9	-	2,903	163,583,579	170,170,277
50-54	883	564	452	412	296	265	97	7	2,976	169,035,740	222,333,699
55-59	778	480	435	377	318	234	187	89	2,898	159,406,314	244,328,058
60-64	555	475	439	383	337	190	141	203	2,723	145,203,170	249,234,118
65-69	203	163	134	111	76	52	31	67	837	42,273,339	74,101,197
70-74	47	45	32	25	13	16	5	14	197	8,379,091	13,752,061
75 and Over	21	11	8	9	2	2	5	4	62	1,837,546	2,662,295
Total	11,030	5,262	3,214	2,346	1,446	862	475	384	25,019	\$ 1,318,276,116	\$ 1,299,592,129

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

Previous Valuation		Current Valuation		Change
Average Age:	45.7	Average Age:	45.4	(0.3)
Average Vesting Service:	9.3	Average Vesting Service:	9.1	(0.2)
Average Annual Pay:	\$50,378	Average Annual Pay:	\$52,691	\$2,313
Average Account Balance:	\$50,706	Average Account Balance:	\$51,944	\$1,238
Vested Participants	17,247	Vested Participants	17,256	9
Nonvested Participants	7,532	Nonvested Participants	7,763	231
Total Participants	24,779	Total Participants	25,019	240

Current Age	Annualized Salary as of Valuation Date										Totals
	Less Than \$20,000	\$20,000-\$29,999	\$30,000-\$39,999	\$40,000-\$49,999	\$50,000-\$59,999	\$60,000-\$69,999	\$70,000-\$79,999	\$80,000-\$89,999	\$90,000-\$99,999	\$100,000 & Over	
Under 20	30	31	12	18	5	1	-	-	-	-	97
20-24	199	277	182	254	197	66	18	-	-	-	1,193
25-29	155	272	261	459	467	239	105	29	8	8	2,003
30-34	171	305	310	539	547	434	217	89	49	40	2,701
35-39	210	380	331	530	558	492	289	187	97	115	3,189
40-44	201	354	330	501	575	446	330	198	122	183	3,240
45-49	177	332	315	485	450	393	283	180	100	188	2,903
50-54	133	348	347	494	496	413	285	161	97	202	2,976
55-59	148	341	382	487	510	403	225	138	82	182	2,898
60-64	143	324	395	527	479	313	215	125	68	134	2,723
65-69	95	120	136	152	113	76	48	28	15	54	837
70-74	44	44	25	24	28	14	3	5	-	10	197
75 and Over	20	14	16	4	3	4	1	-	-	-	62
Total	1,726	3,142	3,042	4,474	4,428	3,294	2,019	1,140	638	1,116	25,019

*Contribution account balance includes Portability Enhancement Provision (PEP) balance.



Historical Schedule of Active Member Data through July 1, 2023

Valuation Date 7/1	Main System			
	Number	Annual Payroll (\$ in Millions)	Average Annual Pay ¹	% Increase in Avg Pay
2014	21,814	\$946.2	\$43,376	9.3%
2015	22,381	993.6	43,395	0.0%
2016	22,762	1,007.8	44,274	2.0%
2017	22,574	1,020.8	45,222	2.1%
2018	22,711	1,027.3	45,234	0.0%
2019	22,826	1,040.2	45,570	0.7%
2020	23,487	1,103.1	46,967	3.1%
2021	23,370	1,132.4	48,455	3.2%
2022	23,487	1,160.8	49,425	2.0%
2023	23,678	1,222.9	51,646	4.5%

Valuation Date 7/1	Judges			
	Number	Annual Payroll (\$ in Millions)	Average Annual Pay ¹	% Increase in Avg Pay
2014	50	\$7.0	\$139,290	3.4%
2015	51	7.3	142,636	2.4%
2016	56	7.9	141,733	(0.6)%
2017	54	7.9	145,668	2.8%
2018	55	8.0	145,615	(0.0)%
2019	56	8.2	145,791	0.1%
2020	57	8.4	148,047	1.5%
2021	57	8.7	151,836	2.6%
2022	57	8.7	153,147	0.9%
2023	57	9.0	157,101	2.6%

¹ Prior to the actuarial valuation as of July 1, 2016, annual payroll is based on projected annual compensation for the upcoming year. Beginning with the actuarial valuation as of July 1, 2016, annual payroll and average annual pay are based on annualized payroll as of the actuarial valuation date.

Values prior to July 1, 2016, were calculated by the prior actuary.

Historical Schedule of Active Member Data through July 1, 2023

Valuation Date 7/1	Public Safety with Prior Main System Service			
	Number	Annual Payroll (\$ in Millions)	Average Annual Pay ¹	% Increase in Avg Pay
2014	315	\$16.7	\$53,121	6.3%
2015	318	18.7	58,781	10.7%
2016	498	28.2	56,678	(3.6)%
2017	498	28.8	57,762	1.9%
2018	598	34.5	57,728	(0.1)%
2019	732	43.0	58,731	1.7%
2020	745	45.4	60,918	3.7%
2021	967	61.5	63,633	4.5%
2022	990	64.7	65,400	2.8%
2023	1,044	71.6	68,539	4.8%

Valuation Date 7/1	Public Safety without Prior Main System Service			
	Number	Annual Payroll (\$ in Millions)	Average Annual Pay ¹	% Increase in Avg Pay
2014	83	\$3.6	\$43,872	18.6%
2015	95	4.6	48,204	9.9%
2016	100	4.6	46,217	(4.1)%
2017	117	5.9	50,400	9.0%
2018	119	6.1	51,352	1.9%
2019	140	7.1	50,646	(1.4)%
2020	200	10.8	54,124	6.9%
2021	200	11.1	55,485	2.5%
2022	245	14.0	57,125	3.0%
2023	240	14.9	62,066	8.6%

¹Prior to the actuarial valuation as of July 1, 2016, annual payroll is based on projected annual compensation for the upcoming year. Beginning with the actuarial valuation as of July 1, 2016, annual payroll and average annual pay are based on annualized payroll as of the actuarial valuation date.

Values prior to July 1, 2016, were calculated by the prior actuary.

Summary of Active Member Data as of July 1, 2023

Active Members Eligible For:	Main System	Judges	Public Safety with Prior Main Service	Public Safety without Prior Main Service	Total
Retirement					
Normal	1,080	14	52	19	1,165
Rule of 85*	1,099	4	1	0	1,104
Early Retirement	<u>3,648</u>	<u>13</u>	<u>64</u>	<u>17</u>	<u>3,742</u>
Total Retirement	5,827	31	117	36	6,011
Deferred Retirement	<u>10,433</u>	<u>24</u>	<u>662</u>	<u>126</u>	<u>11,245</u>
Total Vested	16,260	55	779	162	17,256
Non-Vested	7,418	2	265	78	7,763
Grand Total	23,678	57	1,044	240	25,019

**Includes Rule of 85, Rule of 88 and Rule of 90.*

Five-Year Normal Retirement Eligibility Projection

Main System				
		Age 65	Rule of 85	Total
Currently Eligible as of:	June 30, 2023	1,080	1,099	2,179
Newly Eligible as of:	June 30, 2024	290	277	567
	June 30, 2025	355	265	620
	June 30, 2026	357	277	634
	June 30, 2027	345	301	646
	June 30, 2028	376	265	641
Grand Total		2,803	2,484	5,287

Judges				
		Age 65	Rule of 85	Total
Currently Eligible as of:	June 30, 2023	14	4	18
Newly Eligible as of:	June 30, 2024	0	1	1
	June 30, 2025	1	5	6
	June 30, 2026	1	1	2
	June 30, 2027	0	2	2
	June 30, 2028	0	1	1
Grand Total		16	14	30

No pre-retirement decrements are assumed.

Five-Year Normal Retirement Eligibility Projection

Public Safety with Prior Main System Service				
		Age 55	Rule of 85	Total
Currently Eligible as of:	June 30, 2023	52	1	53
Newly Eligible as of:	June 30, 2024	14	1	15
	June 30, 2025	10	0	10
	June 30, 2026	14	0	14
	June 30, 2027	18	2	20
	June 30, 2028	17	2	19
Grand Total		125	6	131

Public Safety without Prior Main System Service				
		Age 55	Rule of 85	Total
Currently Eligible as of:	June 30, 2023	19	0	19
Newly Eligible as of:	June 30, 2024	3	0	3
	June 30, 2025	5	1	6
	June 30, 2026	2	0	2
	June 30, 2027	5	0	5
	June 30, 2028	4	0	4
Grand Total		38	1	39

No pre-retirement decrements are assumed.

Schedule of Members in Pay Status as of July 1, 2023

Main System

Monthly Amount	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under \$200	774	501	1	52	229	1,557	1,328
\$200 - \$400	841	777	14	64	276	1,972	1,696
\$400 - \$600	722	635	29	64	209	1,659	1,450
\$600 - \$800	543	373	33	113	148	1,210	1,062
\$800 - \$1,000	466	214	21	231	94	1,026	932
\$1,000 - \$1,200	384	179	7	324	80	974	894
\$1,200 - \$1,400	286	93	2	368	62	811	749
\$1,400 - \$1,600	240	48	5	339	39	671	632
\$1,600 - \$1,800	194	30	4	366	33	627	594
\$1,800 - \$2,000	171	19	0	359	31	580	549
\$2,000 - \$2,200	121	8	0	309	18	456	438
\$2,200 - \$2,400	111	9	0	294	26	440	414
\$2,400 - \$2,600	88	5	1	278	11	383	372
\$2,600 - \$2,800	76	5	0	233	12	326	314
\$2,800 - \$3,000	55	4	0	202	10	271	261
\$3,000 and Over	436	9	0	1,288	59	1,792	1,733
Total	5,508	2,909	117	4,884	1,337	14,755	13,418
Payment Option	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Life	3,378	2,062	93	2,257	247	8,037	7,790
Life 1% Graduated Benefits	5	0	0	6	0	11	11
Life 2% Graduated Benefits	11	0	0	10	0	21	21
Level Social Security Payment	1	15	0	86	0	102	102
Joint & 100% Survivor	1,423	545	15	1,560	717	4,260	3,543
Joint & 100% Survivor 1% Graduated Benefits	1	0	0	3	0	4	4
Joint & 100% Survivor 2% Graduated Benefits	7	0	0	7	1	15	14
Joint & 50% Survivor	550	201	8	865	297	1,921	1,624
Joint & 50% Survivor 1% Graduated Benefits	4	0	0	3	1	8	7
Joint & 50% Survivor 2% Graduated Benefits	0	0	0	1	0	1	1
20 Year C & L	65	25	1	32	40	163	123
10 Year C & L	60	54	0	45	28	187	159
10 Year C & L 1% Graduated Benefits	0	0	0	1	0	1	1
5 Year C & L	3	7	0	8	6	24	18
Total	5,508	2,909	117	4,884	1,337	14,755	13,418
Age	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under 50	0	0	15	0	41	56	15
50 - 54	0	0	18	25	29	72	43
55 - 59	0	23	29	222	41	315	274
60 - 64	0	288	54	888	96	1,326	1,230
65 - 69	1,594	675	1	1,333	167	3,770	3,603
70 - 74	1,693	721	0	1,127	211	3,752	3,541
75 and Over	2,221	1,202	0	1,289	752	5,464	4,712
Total	5,508	2,909	117	4,884	1,337	14,755	13,418

	Previous Valuation	Current Valuation	Change
Average Age	73.1	73.3	0.2
Average Monthly Benefit	\$1,392	\$1,416	\$24
Total Members in Pay Status	13,977	14,755	778

* Includes Rule of 85, Rule of 88 and Rule of 90.

** Includes alternate payees.

*** Total excluding beneficiaries.



Schedule of Members in Pay Status as of July 1, 2023

Judges							
Monthly Amount	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under \$400	0	0	0	0	0	0	0
\$400 - \$800	0	0	0	0	1	1	0
\$800 - \$1,200	2	0	0	0	0	2	2
\$1,200 - \$1,600	0	0	0	2	1	3	2
\$1,600 - \$2,000	1	1	0	0	4	6	2
\$2,000 - \$2,400	0	0	0	0	0	0	0
\$2,400 - \$2,800	2	0	0	0	1	3	2
\$2,800 - \$3,200	2	0	0	0	3	5	2
\$3,200 - \$3,600	1	0	0	0	1	2	1
\$3,600 - \$4,000	2	1	0	0	0	3	3
\$4,000 - \$4,400	0	0	0	0	1	1	0
\$4,400 - \$4,800	5	0	0	2	1	8	7
\$4,800 - \$5,200	0	0	0	0	2	2	0
\$5,200 - \$5,600	2	0	0	2	0	4	4
\$5,600 - \$6,000	1	0	0	1	0	2	2
\$6,000 and Over	13	0	1	8	2	24	22
Total	31	2	1	15	17	66	49
Payment Option	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Life	2	0	0	1	4	7	3
Level Social Security Payment	0	0	0	0	0	0	0
Joint & 100% Survivor	21	1	0	8	10	40	30
Joint & 50% Survivor	7	1	1	6	3	18	15
10 Year C & L	0	0	0	0	0	0	0
5 Year C & L	0	0	0	0	0	0	0
Total	31	2	1	15	17	66	49
Age	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under 50	0	0	0	0	0	0	0
50 - 54	0	0	0	0	0	0	0
55 - 59	0	0	0	0	0	0	0
60 - 64	0	0	1	0	1	2	1
65 - 69	2	0	0	4	0	6	6
70 - 74	14	1	0	6	3	24	21
75 and Over	15	1	0	5	13	34	21
Total	31	2	1	15	17	66	49

	Previous Valuation	Current Valuation	Change
Average Age	76.4	77.1	0.7
Average Monthly Benefit	\$4,799	\$4,952	\$153
Total Members in Pay Status	64	66	2

* Includes Rule of 85, Rule of 88 and Rule of 90.

** Includes alternate payees.

*** Total excluding beneficiaries.



Schedule of Members in Pay Status as of July 1, 2023

Public Safety with prior Main System Service

Monthly Amount	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under \$200	6	0	0	0	3	9	6
\$200 - \$400	7	1	0	0	3	11	8
\$400 - \$600	14	2	0	0	1	17	16
\$600 - \$800	7	1	0	0	3	11	8
\$800 - \$1,000	8	0	0	0	1	9	8
\$1,000 - \$1,200	11	0	0	0	2	13	11
\$1,200 - \$1,400	7	0	0	0	0	7	7
\$1,400 - \$1,600	9	0	0	0	1	10	9
\$1,600 - \$1,800	6	0	0	0	0	6	6
\$1,800 - \$2,000	4	1	0	0	0	5	5
\$2,000 - \$2,200	6	0	0	1	3	10	7
\$2,200 - \$2,400	3	0	0	1	0	4	4
\$2,400 - \$2,600	2	2	0	0	0	4	4
\$2,600 - \$2,800	3	0	0	0	0	3	3
\$2,800 - \$3,000	2	0	0	1	0	3	3
\$3,000 and Over	29	1	0	6	0	36	36
Total	124	8	0	9	17	158	141
Payment Option	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Life	59	4	0	1	1	65	64
Level Social Security Payment	3	1	0	0	0	4	4
Joint & 100% Survivor	41	3	0	7	7	58	51
Joint & 100% Survivor 1% Graduated Benefits	0	0	0	0	0	0	0
Joint & 50% Survivor	19	0	0	1	3	23	20
20 Year C & L	1	0	0	0	6	7	1
10 Year C & L	0	0	0	0	0	0	0
5 Year C & L	0	0	0	0	0	0	0
20 Year Certain	0	0	0	0	0	0	0
Total	124	8	0	9	17	158	141
Age	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under 50	0	0	0	0	5	5	0
50 - 54	0	1	0	1	1	3	2
55 - 59	15	4	0	2	0	21	21
60 - 64	27	0	0	3	0	30	30
65 - 69	39	2	0	3	3	47	44
70 - 74	27	0	0	0	8	35	27
75 and Over	16	1	0	0	0	17	17
Total	124	8	0	9	17	158	141

	Previous Valuation	Current Valuation	Change
Average Age	65.7	66.4	0.7
Average Monthly Benefit	\$1,842	\$1,865	\$23
Total Members in Pay Status	148	158	10

* Includes Rule of 85, Rule of 88 and Rule of 90.

** Includes alternate payees.

*** Total excluding beneficiaries.



Schedule of Members in Pay Status as of July 1, 2023

Public Safety without Prior Main System Service

Monthly Amount	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under \$200	1	0	0	0	0	1	1
\$200 - \$400	1	0	0	0	0	1	1
\$400 - \$600	5	1	0	0	1	7	6
\$600 - \$800	1	0	0	0	0	1	1
\$800 - \$1,000	0	0	1	0	1	2	1
\$1,000 - \$1,200	0	0	0	0	1	1	0
\$1,200 - \$1,400	1	0	0	0	0	1	1
\$1,400 - \$1,600	0	0	0	0	1	1	0
\$1,600 - \$1,800	0	0	0	0	0	0	0
\$1,800 - \$2,000	0	0	0	0	0	0	0
\$2,000 - \$2,200	0	0	0	0	0	0	0
\$2,200 - \$2,400	1	0	0	0	0	1	1
\$2,400 - \$2,600	0	0	0	0	0	0	0
\$2,600 - \$2,800	0	0	0	0	0	0	0
\$2,800 - \$3,000	0	0	0	0	0	0	0
\$3,000 and Over	2	0	0	0	0	2	2
Total	12	1	1	0	4	18	14
Payment Option	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Life	4	0	1	0	1	6	5
Level Social Security Payment	0	0	0	0	0	0	0
Joint & 100% Survivor	6	1	0	0	3	10	7
Joint & 50% Survivor	2	0	0	0	0	2	2
10 Year C & L	0	0	0	0	0	0	0
5 Year C & L	0	0	0	0	0	0	0
Total	12	1	1	0	4	18	14
Age	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under 50	0	0	1	0	0	1	1
50 - 54	0	0	0	0	0	0	0
55 - 59	2	1	0	0	3	6	3
60 - 64	3	0	0	0	1	4	3
65 - 69	5	0	0	0	0	5	5
70 - 74	2	0	0	0	0	2	2
75 and Over	0	0	0	0	0	0	0
Total	12	1	1	0	4	18	14

	Previous Valuation	Current Valuation	Change
Average Age	61.6	62.4	0.8
Average Monthly Benefit	\$809	\$1,060	\$251
Total Members in Pay Status	15	18	3

* Includes Rule of 85, Rule of 88 and Rule of 90.

** Includes alternate payees.

*** Total excluding beneficiaries.



Schedule of New Pensions Awarded during the Year as of July 1, 2023

Main System, Judges, Public Safety

Monthly Amount	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under \$200	74	11	0	9	17	111	94
\$200 - \$400	78	21	0	4	17	120	103
\$400 - \$600	87	24	1	4	8	124	116
\$600 - \$800	59	13	2	4	8	86	78
\$800 - \$1,000	41	14	2	4	11	72	61
\$1,000 - \$1,200	45	14	0	4	9	72	63
\$1,200 - \$1,400	33	11	1	14	8	67	59
\$1,400 - \$1,600	27	4	2	12	3	48	45
\$1,600 - \$1,800	19	5	1	11	8	44	36
\$1,800 - \$2,000	10	1	0	18	2	31	29
\$2,000 - \$2,200	13	0	0	14	3	30	27
\$2,200 - \$2,400	13	1	0	12	4	30	26
\$2,400 - \$2,600	7	1	0	16	4	28	24
\$2,600 - \$2,800	5	0	0	14	2	21	19
\$2,800 - \$3,000	5	0	0	18	1	24	23
\$3,000 and Over	65	5	0	128	8	206	198
Total	581	125	9	286	113	1,114	1,001
Payment Option	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Life	298	75	7	105	16	501	485
Life 1% Graduated Benefits	0	0	0	1	0	1	1
Life 2% Graduated Benefits	0	0	0	0	0	0	0
Level Social Security Payment	0	0	0	0	0	0	0
Joint & 100% Survivor	203	35	1	115	63	417	354
Joint & 100% Survivor 1% Graduated Benefits	0	0	0	0	0	0	0
Joint & 100% Survivor 2% Graduated Benefits	0	0	0	0	0	0	0
Joint & 50% Survivor	67	11	1	59	28	166	138
Joint & 50% Survivor 1% Graduated Benefits	0	0	0	0	0	0	0
Joint & 50% Survivor 2% Graduated Benefits	0	0	0	0	0	0	0
20 Year C & L	8	3	0	5	5	21	16
10 Year C & L	5	1	0	1	1	8	7
10-Year C & L 1% Graduated Benefits	0	0	0	0	0	0	0
Total	581	125	9	286	113	1,114	1,001
Age	Normal	Early	Disability	Service*	Beneficiary**	Total	Total***
Under 50	0	0	2	0	9	11	2
50 - 54	0	1	2	18	2	23	21
55 - 59	3	10	1	64	8	86	78
60 - 64	5	98	4	168	14	289	275
65 - 69	452	15	0	33	16	516	500
70 - 74	88	1	0	3	16	108	92
75 and Over	33	0	0	0	48	81	33
Total	581	125	9	286	113	1,114	1,001

	Previous Valuation	Current Valuation	Change
New Pensions Awarded	1,054	1,114	60
Average Age	65.9	65.9	0.0
Average Monthly Benefit	\$1,819	\$1,646	(\$173)

- * Includes Rule of 85, Rule of 88 and Rule of 90.
 ** Includes alternate payees.
 *** Total excluding beneficiaries.



Schedule of Average Benefit Payments as of July 1, 2023

Main System		Years of Vesting Service						Total
		<10	10-14	15-19	20-24	25-29	>=30	
2019	Number of Retirees	2,175	1,627	1,440	1,540	1,712	2,588	11,082
	Average Monthly Benefit	\$273	\$523	\$780	\$1,274	\$1,773	\$2,735	\$1,321
	Average Years of Service	6.26	12.31	17.30	22.56	27.33	35.53	20.94
2020	Number of Retirees	2,322	1,689	1,481	1,618	1,778	2,752	11,640
	Average Monthly Benefit	\$282	\$550	\$814	\$1,316	\$1,812	\$2,823	\$1,367
	Average Years of Service	6.26	12.30	17.31	22.57	27.34	35.60	20.96
2021	Number of Retirees	2,467	1,746	1,545	1,708	1,824	2,882	12,172
	Average Monthly Benefit	\$288	\$570	\$844	\$1,353	\$1,845	\$2,885	\$1,397
	Average Years of Service	6.25	12.32	17.34	22.56	27.35	35.64	20.94
2022	Number of Retirees	2,568	1,814	1,615	1,772	1,892	3,054	12,715
	Average Monthly Benefit	\$293	\$600	\$884	\$1,393	\$1,898	\$2,969	\$1,447
	Average Years of Service	6.26	12.32	17.33	22.55	27.35	35.69	21.01
2023	Number of Retirees	2,761	1,911	1,717	1,853	1,969	3,207	13,418
	Average Monthly Benefit	\$299	\$623	\$909	\$1,429	\$1,943	\$3,017	\$1,470
	Average Years of Service	6.25	12.33	17.31	22.56	27.34	35.73	20.92
Judges		<10	10-14	15-19	20-24	25-29	>=30	Total
2019	Number of Retirees	4	3	6	11	7	11	42
	Average Monthly Benefit	\$2,274	\$3,588	\$4,123	\$5,452	\$4,891	\$6,276	\$4,949
	Average Years of Service	6.29	11.92	17.81	23.17	26.80	35.44	23.81
2020	Number of Retirees	4	3	6	11	7	13	44
	Average Monthly Benefit	\$2,274	\$3,588	\$4,123	\$5,452	\$4,891	\$6,589	\$5,102
	Average Years of Service	6.29	11.92	17.81	23.17	26.80	35.58	24.38
2021	Number of Retirees	4	3	6	11	8	15	47
	Average Monthly Benefit	\$2,274	\$3,643	\$4,123	\$5,452	\$5,261	\$6,808	\$5,297
	Average Years of Service	6.29	11.92	17.81	23.17	26.70	35.27	24.79
2022	Number of Retirees	5	3	6	11	8	15	48
	Average Monthly Benefit	\$2,482	\$3,643	\$4,123	\$5,452	\$5,261	\$6,855	\$5,270
	Average Years of Service	6.67	11.92	17.81	23.17	26.70	35.27	24.45
2023	Number of Retirees	6	2	6	11	8	16	49
	Average Monthly Benefit	\$2,671	\$4,521	\$4,681	\$5,452	\$5,261	\$7,231	\$5,529
	Average Years of Service	6.56	12.34	17.60	23.17	26.70	37.38	25.23

Includes retired and disabled members.



Schedule of Average Benefit Payments as of July 1, 2023

Public Safety with Main Service		Years of Vesting Service						Total
		<10	10-14	15-19	20-24	25-29	>=30	
2018	Number of Retirees	15	11	10	18	17	23	94
	Average Monthly Benefit	\$481	\$915	\$1,452	\$1,839	\$2,180	\$3,317	\$1,896
	Average Years of Service	6.18	12.47	17.25	22.19	27.38	33.29	21.63
2019	Number of Retirees	20	13	11	20	15	25	104
	Average Monthly Benefit	\$630	\$947	\$1,466	\$1,733	\$2,018	\$3,464	\$1,852
	Average Years of Service	6.27	12.27	17.05	22.12	27.49	33.24	20.75
2020	Number of Retirees	24	14	12	19	16	28	113
	Average Monthly Benefit	\$596	\$815	\$1,491	\$1,703	\$2,138	\$3,452	\$1,830
	Average Years of Service	5.99	12.26	17.27	22.15	27.44	33.19	20.46
2021	Number of Retirees	29	15	12	17	19	31	123
	Average Monthly Benefit	\$627	\$851	\$1,491	\$1,865	\$2,266	\$3,554	\$1,900
	Average Years of Service	5.99	12.37	17.27	22.23	27.28	33.40	20.31
2022	Number of Retirees	30	15	14	18	21	34	132
	Average Monthly Benefit	\$619	\$908	\$1,570	\$1,834	\$2,222	\$3,694	\$1,965
	Average Years of Service	5.96	12.33	17.25	22.13	27.32	33.80	20.65
2023	Number of Retirees	32	16	14	20	21	38	141
	Average Monthly Benefit	\$570	\$947	\$1,555	\$1,909	\$2,222	\$3,669	\$1,981
	Average Years of Service	5.86	12.45	17.33	22.15	27.32	33.95	20.82
Public Safety without Main Service		<10	10-14	15-19	20-24	25-29	>=30	Total
2018	Number of Retirees	5	1	0	0	1	0	7
	Average Monthly Benefit	\$401	\$1,204	\$0	\$0	\$3,126	\$0	\$905
	Average Years of Service	4.01	12.58	0.00	0.00	26.17	0.00	8.40
2019	Number of Retirees	7	1	0	0	1	0	9
	Average Monthly Benefit	\$410	\$1,204	\$0	\$0	\$3,126	\$0	\$800
	Average Years of Service	4.44	12.58	0.00	0.00	26.17	0.00	7.76
2020	Number of Retirees	8	1	0	0	2	0	11
	Average Monthly Benefit	\$421	\$1,204	\$0	\$0	\$2,345	\$0	\$842
	Average Years of Service	4.79	12.58	0.00	0.00	27.05	0.00	9.54
2021	Number of Retirees	10	1	0	0	2	0	13
	Average Monthly Benefit	\$456	\$1,204	\$0	\$0	\$2,345	\$0	\$805
	Average Years of Service	5.06	12.58	0.00	0.00	27.05	0.00	9.02
2022	Number of Retirees	9	1	1	0	1	0	12
	Average Monthly Benefit	\$457	\$1,204	\$497	\$0	\$3,126	\$0	\$745
	Average Years of Service	5.22	12.58	16.58	0.00	26.17	0.00	8.53
2023	Number of Retirees	9	1	2	1	1	0	14
	Average Monthly Benefit	\$457	\$1,204	\$1,430	\$3,759	\$3,126	\$0	\$1,076
	Average Years of Service	5.22	12.58	17.13	23.33	26.17	0.00	10.24

Includes retired and disabled members.



Schedule of Retirees and Beneficiaries Added to and Removed from the Rolls

Main System

Plan Year	Beg. of Year		Added to Rolls		Removed from Rolls		End of Year Balance		Average Annual Benefit	% Increase in Annual Benefits
	No.	Ann. Benefits*	No.	Ann. Benefits*	No.	Ann. Benefits*	No.**	Ann. Benefits*		
	Retirement									
2014	8,666	\$ 102.2	855	\$ 13.2	(291)	\$ (2.4)	9,230	\$ 113.0	\$ 12,243	10.6%
2015	9,230	113.0	992	19.3	(243)	(2.4)	9,979	129.9	13,017	15.0%
2016	9,979	129.9	703	12.3	(288)	(2.6)	10,394	139.6	13,435	7.5%
2017	10,394	139.6	870	16.1	(307)	(3.0)	10,957	152.8	13,943	9.4%
2018	10,957	152.8	953	19.7	(372)	(3.6)	11,538	169.0	14,645	10.6%
2019	11,538	169.0	913	18.8	(334)	(3.0)	12,117	184.9	15,257	9.4%
2020	12,117	184.9	1,032	20.5	(401)	(4.3)	12,748	201.1	15,772	8.8%
2021	12,748	201.1	1,025	18.6	(412)	(4.3)	13,361	215.3	16,116	7.1%
2022	13,361	215.3	1,036	22.8	(420)	(4.7)	13,977	233.4	16,701	8.4%
2023	13,977	233.4	1,094	21.5	(316)	(4.2)	14,755	250.7	16,990	7.4%

* \$ in millions.

** Excludes 24 pensioners as of June 30, 2014, 28 pensioners as of June 30, 2015, 35 pensioners as of June 30, 2016, 41 pensioners as of June 30, 2017, 37 pensioners as of June 30, 2018, 37 pensioners as of June 30, 2019, 42 pensioners as of June 30, 2020, 35 pensioners as of June 30, 2021, 32 pensioners as of June 30, 2022, and 37 pensioners as of June 30, 2023 in suspended status.

Judges

Plan Year	Beg. of Year		Added to Rolls		Removed from Rolls		End of Year Balance		Average	% Increase
	No.	Ann. Benefits	No.	Ann. Benefits	No.	Ann. Benefits	No.	Ann. Benefits	Annual Benefit	in Annual Benefits
	Retirement									
2014	36	\$ 1,530,765	2	\$ 190,156	0	\$ 0	38	\$ 1,720,921	\$ 45,287	12.4%
2015	38	1,720,921	6	462,888	0	0	44	2,183,809	49,632	26.9%
2016	44	2,183,809	2	85,597	(3)	(147,638)	43	2,121,768	49,343	-2.8%
2017	43	2,121,768	10	674,619	(3)	(156,433)	50	2,639,954	52,799	24.4%
2018	50	2,639,954	7	331,377	(2)	(68,572)	55	2,902,760	52,777	10.0%
2019	55	2,902,760	3	241,678	0	0	58	3,144,438	54,214	8.3%
2020	58	3,144,438	3	293,611	(1)	(94,084)	60	3,343,965	55,733	6.3%
2021	60	3,343,965	3	293,778	0	0	63	3,637,743	57,742	8.8%
2022	63	3,637,743	1	48,097	0	0	64	3,685,840	57,591	1.3%
2023	64	3,685,840	4	299,379	(2)	(63,485)	66	3,921,734	59,420	6.4%

Values prior to July 1, 2016, were calculated by the prior actuary.

Totals may not add due to rounding.



Schedule of Retirees and Beneficiaries Added to and Removed from the Rolls

Public Safety with prior Main System Service

Plan Year									Average Annual Benefit	% Increase in Annual Benefits	
	Beg of Year		Added to Rolls		Removed from Rolls		End of Year Balance				
	No.	Ann. Benefits	No.	Ann. Benefits	No.	Ann. Benefits	No.	Ann. Benefits			
Retirement											
2014	56	\$ 1,075,702	7	\$ 83,168	(1)	(\$57,253)	62	\$ 1,101,617	\$ 17,768	2.4%	
2015	62	1,101,617	11	301,041	0	0	73	1,402,658	19,215	27.3%	
2016	73	1,402,658	7	53,522	(1)	(10,529)	79	1,445,651	18,299	3.1%	
2017	79	1,445,651	11	390,805	0	0	90	1,836,456	20,405	27.0%	
2018	90	1,836,456	15	371,954	(2)	(22,510)	103	2,185,900	21,222	19.0%	
2019	103	2,185,900	15	309,766	(3)	(87,471)	115	2,408,195	20,941	10.2%	
2020	115	2,408,195	12	223,956	(2)	(38,955)	125	2,593,195	20,746	7.7%	
2021	125	2,593,195	15	399,735	(3)	(44,015)	137	2,948,915	21,525	13.7%	
2022	137	2,948,915	14	341,750	(3)	(18,787)	148	3,271,877	22,107	11.0%	
2023	148	3,271,877	13	345,199	(3)	(81,531)	158	3,535,545	22,377	8.1%	

Public Safety without prior Main System Service

Plan Year									Average Annual Benefit	% Increase in Annual Benefits
	Beg of Year		Added to Rolls		Removed from Rolls		End of Year Balance			
	No.	Ann. Benefits	No.	Ann. Benefits	No.	Ann. Benefits	No.	Ann. Benefits		
Retirement										
2013	0	\$ 0	1	\$ 9,792	0	\$ 0	1	\$ 9,792	\$ 9,792	100.0%
2014	1	9,792	0	0	0	0	1	9,792	9,792	0.0%
2015	1	9,792	0	0	0	0	1	9,792	9,792	0.0%
2016	1	9,792	1	3,264	0	0	2	13,056	6,528	33.3%
2017	2	13,056	4	57,609	0	0	6	70,665	11,778	441.2%
2018	6	70,665	2	19,573	0	0	8	90,238	11,280	27.7%
2019	8	90,238	2	10,405	0	0	10	100,643	10,064	11.5%
2020	10	100,643	2	24,715	0	0	12	125,358	10,447	24.6%
2021	12	125,358	2	14,349	0	0	14	139,708	9,979	11.4%
2022	14	139,708	3	30,110	(2)	(24,143)	15	145,675	9,712	4.3%
2023	15	145,675	3	83,224	0	0	18	228,899	12,717	57.1%

Values prior to July 1, 2016, were calculated by the prior actuary.

Totals may not add due to rounding.



SECTION D

GASB STATEMENT No. 67 SCHEDULES

Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain non-actuarial information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position, net pension liability and the pension plan's fiduciary net position as a percentage of the total pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

GASB Statement No. 67

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Timing of the Actuarial Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2023, and a measurement date of June 30, 2023.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) a tax-exempt municipal bond rate based on an index of 20-year mixed maturity general obligation bonds with an average Standard & Poor's Corp.'s AA credit rating (which is published by Fidelity) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this actuarial valuation, the expected rate of return on pension plan investments is 6.50%; the municipal bond rate is 3.86% (based on the most recent date available on or before the measurement date of the "20-year Municipal GO Index" from Fidelity); and the resulting Single Discount Rate is 6.50%.



GASB Statement No. 67

Executive Summary as of June 30, 2023

	Main System	Judges	Public Safety with Prior Main Service	Public Safety without Prior Main Service	Total
Actuarial Valuation Date	7/1/2023	7/1/2023	7/1/2023	7/1/2023	7/1/2023
Measurement Date of the Net Pension Liability	7/1/2023	7/1/2023	7/1/2023	7/1/2023	7/1/2023
Plan's Fiscal Year Ending Date (Reporting Date) for GASB 67	6/30/2023	6/30/2023	6/30/2023	6/30/2023	6/30/2023

Membership

Number of					
- Retirees and Beneficiaries	14,755	66	158	18	14,997
- Inactive, Nonretired Members	16,914	3	499	186	17,602
- Active Members	23,678	57	1,044	240	25,019
- Total	55,347	126	1,701	444	57,618
Covered Payroll	\$ 1,222,870,520	\$ 8,954,748	\$ 71,555,079	\$ 14,895,770	\$ 1,318,276,116

Net Pension Liability

Total Pension Liability	\$ 5,559,270,755	\$ 59,565,058	\$ 187,025,504	\$ 22,264,260	\$ 5,828,125,577
Plan Fiduciary Net Position	3,631,018,404	66,078,134	126,443,916	20,400,288	3,843,940,742
Net Pension Liability	\$ 1,928,252,351	\$ (6,513,076)	\$ 60,581,588	\$ 1,863,972	\$ 1,984,184,835
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	65.31 %	110.93 %	67.61 %	91.63 %	65.96 %
Net Pension Liability as a Percentage of Covered Payroll	157.68 %	(72.73)%	84.66 %	12.51 %	150.51 %

Development of the Single Discount Rate

Single Discount Rate	6.50 %	6.50 %	6.50 %	6.50 %	6.50 %
Long-Term Expected Rate of Investment Return	6.50 %	6.50 %	6.50 %	6.50 %	6.50 %
Long-Term Municipal Bond Rate*	3.86 %	3.86 %	3.86 %	3.86 %	3.86 %
Last year ending June 30 in the 2024 to 2123 projection period for which projected benefit payments are fully funded	2123	2123	2123	2123	2123

*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 30, 2023. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.



GASB Statement No. 67

Schedules of Required Supplementary Information Schedule of Net Pension Liability and Related Ratios Multiyear

Last 10 Fiscal Years (which may be built prospectively)

FY Ending 30-Jun	System	Total Pension Liability ¹	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll ²	Net Pension Liability as a % of Covered Payroll
2014	Main	\$ 2,846,579,777	\$ 2,211,858,402	\$ 634,721,375	77.70 %	\$ 865,868,265	73.30 %
2014	Judges	38,989,792	42,713,635	(3,723,843)	109.55 %	6,598,981	(56.43)%
2014	Public Safety with prior Main System service	30,791,599	24,806,508	5,985,091	80.56 %	13,394,927	44.68 %
2014	Public Safety without prior Main System service	2,190,975	2,204,318	(13,343)	100.61 %	2,589,887	(0.52)%
2014	Total PERS	2,918,552,143	2,281,582,863	636,969,280	78.18 %	888,452,060	71.69 %
2015	Main	\$ 2,976,071,808	\$ 2,296,088,880	\$ 679,982,928	77.15 %	\$ 946,197,522	71.86 %
2015	Judges	39,381,443	44,137,412	(4,755,969)	112.08 %	6,964,502	(68.29)%
2015	Public Safety with prior Main System service	34,317,782	28,691,976	5,625,806	83.61 %	16,732,974	33.62 %
2015	Public Safety without prior Main System service	2,675,506	2,792,541	(117,035)	104.37 %	3,641,404	(3.21)%
2015	Total PERS	3,052,446,539	2,371,710,809	680,735,730	77.70 %	973,536,402	69.92 %
2016	Main	\$ 3,299,381,100	\$ 2,324,783,623	\$ 974,597,477	70.46 %	\$ 1,007,764,043	96.71 %
2016	Judges	39,819,443	44,269,616	(4,450,173)	111.18 %	7,937,062	(56.07)%
2016	Public Safety with prior Main System service	53,865,148	42,406,694	11,458,454	78.73 %	28,225,868	40.60 %
2016	Public Safety without prior Main System service	3,499,776	3,435,724	64,052	98.17 %	4,621,494	1.39 %
2016	Total PERS	3,396,565,467	2,414,895,657	981,669,810	71.10 %	1,048,548,467	93.62 %
2017	Main	\$ 4,227,873,933	\$ 2,620,545,753	\$ 1,607,328,180	61.98 %	\$ 1,020,843,253	157.45 %
2017	Judges	45,789,468	49,576,578	(3,787,110)	108.27 %	7,866,090	(48.14)%
2017	Public Safety with prior Main System service	73,040,417	51,024,228	22,016,189	69.86 %	28,765,678	76.54 %
2017	Public Safety without prior Main System service	7,667,872	6,689,031	978,841	87.23 %	5,896,777	16.60 %
2017	Total PERS	4,354,371,690	2,727,835,589	1,626,536,101	62.65 %	1,063,371,798	152.96 %
2018	Main	\$ 4,536,928,161	\$ 2,849,319,075	\$ 1,687,609,086	62.80 %	\$ 1,027,317,202	164.27 %
2018	Judges	47,011,600	53,493,730	(6,482,130)	113.79 %	8,008,841	(80.94)%
2018	Public Safety with prior Main System service	82,162,213	58,857,977	23,304,236	71.64 %	34,521,069	67.51 %
2018	Public Safety without prior Main System service	9,479,781	8,509,494	970,287	89.76 %	6,110,843	15.88 %
2018	Total PERS	4,675,581,755	2,970,180,276	1,705,401,479	63.53 %	1,075,957,954	158.50 %
2019	Main	\$ 4,136,252,987	\$ 2,964,180,628	\$ 1,172,072,359	71.66 %	\$ 1,040,170,174	112.68 %
2019	Judges	44,558,881	55,455,075	(10,896,194)	124.45 %	8,164,306	(133.46)%
2019	Public Safety with prior Main System service	79,501,182	67,134,798	12,366,384	84.45 %	42,991,270	28.76 %
2019	Public Safety without prior Main System service	9,026,915	9,960,580	(933,665)	110.34 %	7,090,395	(13.17)%
2019	Total PERS	4,269,339,965	3,096,731,081	1,172,608,884	72.53 %	1,098,416,146	106.75 %
2020	Main	\$ 6,157,520,698	\$ 3,011,499,294	\$ 3,146,021,404	48.91 %	\$ 1,103,120,694	285.19 %
2020	Judges	63,768,454	56,273,160	7,495,294	88.25 %	8,438,678	88.82 %
2020	Public Safety with prior Main System service	139,828,360	74,280,460	65,547,900	53.12 %	45,383,846	144.43 %
2020	Public Safety without prior Main System service	18,682,804	12,298,225	6,384,579	65.83 %	10,824,717	58.98 %
2020	Total PERS	6,379,800,316	3,154,351,139	3,225,449,177	49.44 %	1,167,767,935	276.21 %
2021	Main	\$ 4,795,054,158	\$ 3,752,753,612	\$ 1,042,300,546	78.26 %	\$ 1,132,390,738	92.04 %
2021	Judges	53,424,304	68,256,490	(14,832,186)	127.76 %	8,654,665	(171.38)%
2021	Public Safety with prior Main System service	128,468,679	111,897,170	16,571,509	87.10 %	61,533,502	26.93 %
2021	Public Safety without prior Main System service	14,595,856	16,815,428	(2,219,572)	115.21 %	11,097,033	(20.00)%
2021	Total PERS	4,991,542,997	3,949,722,700	1,041,820,297	79.13 %	1,213,675,937	85.84 %
2022	Main	6,325,032,015	3,444,965,426	2,880,066,589	54.47 %	1,160,836,487	248.10 %
2022	Judges	65,819,245	62,598,397	3,220,848	95.11 %	8,729,372	36.90 %
2022	Public Safety with prior Main System service	193,089,067	110,992,147	82,096,920	57.48 %	64,746,118	126.80 %
2022	Public Safety without prior Main System service	23,528,893	17,215,932	6,312,961	73.17 %	13,995,584	45.11 %
2022	Total PERS	6,607,469,220	3,635,771,902	2,971,697,318	55.03 %	1,248,307,560	238.06 %
2023	Main	\$ 5,559,270,755	\$ 3,631,018,404	\$ 1,928,252,351	65.31 %	\$ 1,222,870,520	157.68 %
2023	Judges	59,565,058	66,078,134	(6,513,076)	110.93 %	8,954,748	(72.73)%
2023	Public Safety with prior Main System service	187,025,504	126,443,916	60,581,588	67.61 %	71,555,079	84.66 %
2023	Public Safety without prior Main System service	22,264,260	20,400,288	1,863,972	91.63 %	14,895,770	12.51 %
2023	Total PERS	5,828,125,577	3,843,940,742	1,984,184,835	65.96 %	1,318,276,116	150.51 %

¹ The total pension liability is based on a single discount rate of 8.00% for fiscal years prior to 2017, 6.44% for fiscal year 2017, 6.32% for fiscal year 2018, 7.50% for fiscal year 2019, 4.64% for fiscal year 2020, 7.00% for fiscal year 2021, 5.10% for fiscal year 2022, and 6.50% for fiscal year 2023.

² Prior to the actuarial valuation as of July 1, 2016, annual payroll is based on projected annual compensation for the upcoming year. Beginning with the actuarial valuation as of July 1, 2016, annual payroll and average annual pay are based on annualized payroll as of the actuarial valuation date.

Values prior to July 1, 2016, were calculated by the prior actuary.



GASB Statement No. 67

Schedule of Changes in Net Pension Liability and Related Ratios Current Report Period Fiscal Year Ended June 30, 2023

	Main System	Judges	Public Safety		Total PERS
			with Prior Main System Service	without Prior Main System Service	
Total pension liability					
Service cost	\$ 205,855,880	\$ 2,915,587	\$ 13,069,595	\$ 2,944,020	\$ 224,785,082
Interest on the total pension liability	321,127,999	3,337,703	10,071,036	1,267,421	335,804,159
Changes of benefit terms	(25,881,166)	-	16,742,239	-	(9,138,927)
Difference between expected and actual experience ¹	69,611,818	(543,589)	3,059,160	595,527	72,722,916
Changes of assumptions ²	(1,073,095,420)	(8,290,713)	(44,810,826)	(5,805,900)	(1,132,002,859)
Benefit payments and refunds	(263,380,371)	(3,673,175)	(4,194,767)	(265,701)	(271,514,014)
Net change in total pension liability	(765,761,260)	(6,254,187)	(6,063,563)	(1,264,633)	(779,343,643)
Total pension liability - beginning³	6,325,032,015	65,819,245	193,089,067	23,528,893	6,607,469,220
Total pension liability - ending (a)³	\$ 5,559,270,755	\$ 59,565,058	\$ 187,025,504	\$ 22,264,260	\$ 5,828,125,577
Plan fiduciary net position					
Contributions - Employer	\$ 92,511,041	\$ 1,558,939	\$ 6,658,082	\$ 1,205,265	\$ 101,933,327
Contributions - Employee	88,104,240	711,890	3,750,551	841,234	93,407,915
Contributions - Service credit repurchases	5,033,602	-	98,918	18,727	5,151,247
Pension plan net investment income	266,530,602	4,893,127	9,017,377	1,408,458	281,849,564
Benefit payments and refunds	(263,380,371)	(3,673,175)	(4,194,767)	(265,701)	(271,514,014)
Pension plan administrative expense	(2,552,994)	(11,044)	(82,419)	(23,627)	(2,670,084)
Transfers and Other Income	(193,142)	-	204,027	-	10,885
Net change in plan fiduciary net position	186,052,978	3,479,737	15,451,769	3,184,356	208,168,840
Plan fiduciary net position - beginning	3,444,965,426	62,598,397	110,992,147	17,215,932	3,635,771,902
Plan fiduciary net position - ending (b)	\$ 3,631,018,404	\$ 66,078,134	\$ 126,443,916	\$ 20,400,288	\$ 3,843,940,742
Net pension liability - ending (a) - (b)	\$ 1,928,252,351	\$ (6,513,076)	\$ 60,581,588	\$ 1,863,972	\$ 1,984,184,835
Plan fiduciary net position as a percentage of total pension liability	65.31 %	110.93 %	67.61 %	91.63 %	65.96 %
Covered-employee payroll	\$ 1,222,870,520	\$ 8,954,748	\$ 71,555,079	\$ 14,895,770	\$ 1,318,276,116
Net pension liability as a percentage of covered-employee payroll	157.68 %	(72.73)%	84.66 %	12.51 %	150.51 %

¹ Includes liability attributable to transfer of members and service credit repurchases.

² Includes difference in liability due to changes in the single discount rate assumption.

³ The total pension liability is based on a single discount rate of 5.10% for the beginning of the fiscal year and 6.50% for the end of the fiscal year.



Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

The following presents the net pension liability/(asset) of the PERS, calculated using the current single discount rate of 6.50%, as well as what the PERS' net pension liability/(asset) would be if it were calculated using a discount rate that is 1-percentage point lower (5.50%) or is 1-percentage point higher (7.50%) than the current rate.

System	1% Decrease	Current Single Discount	1% Increase
	5.50%	Rate Assumption 6.50%	7.50%
Main System	\$2,658,596,730	\$1,928,252,351	\$1,322,375,035
Judges	(781,847)	(6,513,076)	(11,432,570)
Public Safety			
With Main System Service	93,545,306	60,581,588	35,370,785
Without Main System Service	5,814,572	1,863,972	(1,266,038)
Total PERS	2,757,174,761	1,984,184,835	1,345,047,212

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System Asset Allocation

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return	Allocation-Weighted Long-Term Expected Real Rate of Return
Domestic Equities	30.90 %	6.25 %	1.93 %
International Equities	20.10 %	6.95 %	1.40 %
Private Equity	7.00 %	9.45 %	0.66 %
Domestic Fixed Income	23.00 %	2.51 %	0.58 %
Global Real Assets	19.00 %	4.33 %	0.82 %
Cash Equivalents	0.00 %	0.00 %	0.00 %
Total	100.00 %		5.39 %

Asset allocation and long-term expected arithmetic returns were provided by RIO and are net of inflation of 2.50%.

The discount rate used to measure the total pension liability of the total PERS plan was 6.50%. The projection of cash flows used to determine the discount rate assumed plan member and statutory/Board approved employer contributions will be made at the statutory rates described in this report. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the Total PERS pension plan's fiduciary net position was projected to be sufficient to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all projected benefit payments.

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Schedule of Contributions Multiyear

FY Ending 30-Jun	System	Actuarially Determined Contribution ¹	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll ²	Actual Contribution as a % of Covered Payroll
2014	Main	\$ 105,092,504	\$ 58,872,974	\$ 46,219,530	\$ 865,868,265	6.80%
2014	Judges	1,099,249	1,159,604	(60,355)	6,598,981	17.57%
2014	Public Safety with prior Main System service	1,449,458	1,385,958	63,500	13,394,927	10.35%
2014	Public Safety without prior Main System service	210,115	242,514	(32,399)	2,589,887	9.36%
2014	Total PERS	107,851,326	61,661,050	46,190,276	888,452,060	6.94%
2015	Main	\$ 104,636,238	\$ 67,669,374	\$ 36,966,864	\$ 946,197,522	7.15%
2015	Judges	1,030,705	1,225,358	(194,653)	6,964,502	17.59%
2015	Public Safety with prior Main System service	1,577,004	1,638,384	(61,380)	16,732,974	9.79%
2015	Public Safety without prior Main System service	270,026	309,419	(39,393)	3,641,404	8.50%
2015	Total PERS	107,513,973	70,842,535	36,671,438	973,536,402	7.28%
2016	Main	\$ 121,358,455	\$ 72,960,487	\$ 48,397,968	\$ 1,007,764,043	7.24%
2016	Judges	781,713	1,364,327	(582,614)	7,937,062	17.19%
2016	Public Safety with prior Main System service	1,828,196	2,384,097	(555,901)	28,225,868	8.45%
2016	Public Safety without prior Main System service	367,803	371,664	(3,861)	4,621,494	8.04%
2016	Total PERS	124,336,167	77,080,576	47,255,591	1,048,548,467	7.35%
2017	Main	\$ 112,981,892	\$ 74,023,555	\$ 38,958,337	\$ 1,020,843,253	7.25%
2017	Judges	734,399	1,407,326	(672,927)	7,866,090	17.89%
2017	Public Safety with prior Main System service	2,514,672	3,005,338	(490,666)	28,765,678	10.45%
2017	Public Safety without prior Main System service	333,237	497,352	(164,115)	5,896,777	8.43%
2017	Total PERS	116,564,200	78,933,571	37,630,629	1,063,371,798	7.42%
2018	Main	\$ 122,272,212	\$ 75,666,300	\$ 46,605,912	\$ 1,027,317,202	7.37%
2018	Judges	393,904	1,413,703	(1,019,799)	8,008,841	17.65%
2018	Public Safety with prior Main System service	2,602,245	3,175,608	(573,363)	34,521,069	9.20%
2018	Public Safety without prior Main System service	445,737	471,598	(25,861)	6,110,843	7.72%
2018	Total PERS	125,714,098	80,727,209	44,986,889	1,075,957,954	7.50%
2019	Main	123,630,789	75,730,260	47,900,529	1,040,170,174	7.28%
2019	Judges	168,596	1,425,454	(1,256,858)	8,164,306	17.46%
2019	Public Safety with prior Main System service	2,911,194	3,762,300	(851,106)	42,991,270	8.75%
2019	Public Safety without prior Main System service	418,346	670,304	(251,958)	7,090,395	9.45%
2019	Total PERS	127,128,925	81,588,318	45,540,607	1,098,416,146	7.43%
2020	Main	135,980,074	78,110,561	57,869,513	1,103,120,694	7.08%
2020	Judges	240,210	1,570,506	(1,330,296)	8,438,678	18.61%
2020	Public Safety with prior Main System service	3,817,846	4,845,254	(1,027,408)	45,383,846	10.68%
2020	Public Safety without prior Main System service	499,195	977,712	(478,517)	10,824,717	9.03%
2020	Total PERS	140,537,325	85,504,033	55,033,292	1,167,767,935	7.32%
2021	Main	151,280,352	83,508,849	67,771,503	1,132,390,738	7.37%
2021	Judges	765,599	1,389,483	(623,884)	8,654,665	16.05%
2021	Public Safety with prior Main System service	4,581,035	5,470,675	(889,640)	61,533,502	8.89%
2021	Public Safety without prior Main System service	916,045	896,633	19,412	11,097,033	8.08%
2021	Total PERS	157,543,031	91,265,640	66,277,391	1,213,675,937	7.52%
2022	Main	149,553,767	87,430,734	62,123,033	1,160,836,487	7.53%
2022	Judges	768,657	1,661,040	(892,383)	8,729,372	19.03%
2022	Public Safety with prior Main System service	6,185,915	6,507,951	(322,036)	64,746,118	10.05%
2022	Public Safety without prior Main System service	881,328	1,031,058	(149,730)	13,995,584	7.37%
2022	Total PERS	157,389,667	96,630,783	60,758,884	1,248,307,560	7.74%
2023	Main	\$ 180,867,772	\$ 92,511,041	\$ 88,356,731	\$ 1,222,870,520	7.57%
2023	Judges	1,069,985	1,558,939	(488,954)	8,954,748	17.41%
2023	Public Safety with prior Main System service	7,946,873	6,658,082	1,288,791	71,555,079	9.30%
2023	Public Safety without prior Main System service	1,389,262	1,205,265	183,997	14,895,770	8.09%
2023	Total PERS	191,273,892	101,933,327	89,340,565	1,318,276,116	7.73%

¹ The actuarially determined contribution was based on an investment return assumption of 8.00% and a payroll growth assumption of 4.50% (4.00% for Judges) for fiscal years ending 2014 through 2017, an investment return assumption of 7.75% and a payroll growth assumption of 3.75% (3.25% for Judges) for fiscal year ending 2018, an investment return assumption of 7.50% and a payroll growth assumption of 3.75% (3.25% for Judges) for fiscal year ending 2019, an investment return assumption of 7.00% and a payroll growth assumption of 3.50% (3.00% for Judges) for fiscal years ending 2020, 2021, 2022, and an investment return assumption of 6.50% and a payroll growth assumption of 3.50% (3.00% for Judges) for fiscal year ending 2023.

² Prior to the actuarial valuation as of July 1, 2016, annual payroll is based on projected annual compensation for the upcoming year. Beginning with the actuarial valuation as of July 1, 2016, annual payroll and average annual pay are based on annualized payroll as of the actuarial valuation date. Values prior to July 1, 2016, were calculated by the prior actuary.



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Notes The actuarially determined contribution amount is calculated as of June 30, 12 months prior to the end of the fiscal year in which the contributions are reported.

Methods and Assumptions Used to Determine Actuarially Determined Contribution Rates:

Valuation Date	July 1, 2022
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Open Period
	Assumed annual payroll growth of 3.50% (3.00% for Judges)
Remaining Amortization Period	20 years
Asset Valuation Method	5-Year smoothed market
Inflation	2.25%
Salary Increases	3.50% to 17.75% including inflation
Investment Rate of Return	6.50%
Retirement Age	Age-based table of rates that are specific to the type of eligibility condition.
Mortality	Sex-distinct Pub-2010 tables for General Employees, with scaling based on actual experience. Respective corresponding tables were used for healthy retirees, disabled retirees, and active members. Mortality rates are projected from 2010 using the MP-2019 scale.

Other Information:

Notes

The benefit accrual rate for members first enrolled on or after January 1, 2020 in the Main and Public Safety Systems is 1.75% (compared to 2.00% for members enrolled before January 1, 2020).

The investment return assumption was updated from 7.00% to 6.50% beginning with the actuarial valuation as of July 1, 2022. All other actuarial assumptions used in the actuarial valuation as of July 1, 2022 were based on an experience review for the period from July 1, 2014 to July 1, 2019, and were adopted for first use commencing with the actuarial valuation as of July 1, 2020.

The employer rates to the System are the statutory/Board approved contribution rates of 7.12% of payroll for the Main System (8.26% for members enrolled on or after January 1, 2020), 17.52% for the Judges System, 9.81% for Public Safety with prior Main System service System and 7.93% for Public Safety without prior Main System service System.

Methods and Assumptions Used to Determine GASB 67/68 Net Pension Liability:

Valuation Date	July 1, 2023
Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	Plan Fiduciary Net Position (Market value of assets, no asset smoothing)
Inflation	2.25%
Salary Increases	3.50% to 17.75% including inflation
Single Discount Rate	6.50% (Based on an investment return assumption of 6.50% and a municipal bond rate of 3.86%)
Retirement Age	Age-based table of rates that are specific to the type of eligibility condition.
Mortality	Sex-distinct Pub-2010 tables for General Employees, with scaling based on actual experience. Respective corresponding tables were used for healthy retirees, disabled retirees, and active members. Mortality rates are projected from 2010 using the MP-2019 scale.

Other Information:

Notes

The current employer rates to the System are the statutory/Board approved contribution rates of 7.12% of payroll for the Main System (8.26% for members enrolled on or after January 1, 2020), 17.52% for the Judges System, 9.81% for Public Safety with prior Main System service System and 7.93% for Public Safety without prior Main System service System.

The benefit accrual rate for members first enrolled on or after January 1, 2020 in the Main and Public Safety Systems is 1.75% (compared to 2.00% for members enrolled before January 1, 2020).

The investment return assumption was updated from 7.00% to 6.50% beginning with the actuarial valuation as of July 1, 2022. All other actuarial assumptions used in the actuarial valuation as of July 1, 2022 were based on an experience review for the period from July 1, 2014 to July 1, 2019, and were adopted for first use commencing with the actuarial valuation as of July 1, 2020.

In 2023, House Bill 1040 was passed, which closes the Main System to employees newly enrolled into the system on January 1, 2025 and later. The state employer contribution for 2026 and later was changed to be the amount sufficient to fund the Main System on actuarial basis, with the amortization of the unfunded liability determined on a level percent of payroll basis over a closed period beginning on January 1, 2026 and ending June 30, 2056.

Legislation was passed relating to the Public Safety with Prior Service System. The Public Safety with Prior Service System was expanded to allow peace officers employed by the State to participate. The provisions are similar to the Public Safety with Prior Service System, but with a 6.00 percent employee contribution rate. The benefit multiplier and the vesting requirements for the Bureau of Criminal Investigation group were changed.



SECTION E

ACTUARIAL VALUATION PROCEDURES

Actuarial Assumptions in the Actuarial Valuation Process

Normal cost and the allocation of benefit values between service rendered before and after the actuarial valuation date were determined using the **Entry Age Normal** Actuarial Cost Method. Under this Method, a Normal Cost is developed by spreading the actuarial value of benefits expected to be received by each active participant over the total working lifetime of that participant, from date of hire to termination, as a level percentage of pay.

Financing of Unfunded Actuarial Accrued Liabilities. The unfunded actuarial accrued liability is amortized using 20-year open level-percentage of pay amortization of the unfunded liability as of the actuarial valuation date for purposes of calculating the actuarial contribution rate.

Actuarial Value of Pension Plan Assets. The calculated value is determined by adjusting the market value of assets to reflect the investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last five years at the rate of 20 percent per year. This asset smoothing method was adopted by the Board for use beginning with the July, 1 2017 actuarial valuation. Net deferred asset gains attributable to fiscal years 2016 and prior were fully recognized as of July 1, 2017.

Actuarial Valuation Assumptions. The contribution and benefit values of the System are calculated by applying actuarial assumptions to the benefit provisions and census information furnished, using the actuarial cost method described above.

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

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

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

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

Actuarial Assumptions in the Actuarial Valuation Process

From time-to-time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). Thus, an experience review of the North Dakota Public Employees Retirement System for the period July 1, 2014 to July 1, 2019, was performed to compare the demographic and economic experience against the actuarial assumptions used in the actuarial valuations. Most of the actuarial assumptions described in this section were adopted by the Board for use beginning with the July 1, 2020 actuarial valuation.

All actuarial assumptions are expectations of future experience, not current market measures.

The actuarial assumptions were provided by, and are the responsibility of, the NDPERS Board.

Actuarial Valuation Assumptions

Current Actuarial Valuation Assumptions and Methods

The assumed rate of investment return used is 6.50 percent, net of investment expenses, annually. This assumption was adopted by the Board for use beginning with the July 1, 2022 actuarial valuation.

The assumed rate of price inflation is 2.25 percent. This assumption was adopted by the Board for use beginning with the July 1, 2020 actuarial valuation.

No Cost of Living Adjustments (COLA) are provided to benefit recipients. Therefore, there is no COLA assumption for this actuarial valuation.

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

Service At Beginning of Year	Main System		Public Safety	Judges
	State Employee	Non-State Employee		
0	10.75%	13.25%	17.75%	
1	7.50%	8.00%	15.00%	
2	5.75%	7.25%	12.75%	
3			7.25%	
4			7.25%	
Age*				
Under 30	5.75%	7.25%	6.75%	3.00%
30-34	5.75%	6.75%	6.75%	3.00%
35-39	5.75%	6.75%	6.25%	3.00%
40-44	5.25%	6.25%	6.25%	3.00%
45-49	5.25%	6.25%	5.25%	3.00%
50-54	4.75%	5.75%	5.25%	3.00%
55-59	4.50%	5.50%	5.25%	3.00%
60-64	4.00%	4.75%	5.25%	3.00%
65-69	4.00%	4.75%	4.50%	3.00%
70+	3.50%	4.50%	4.25%	3.00%

**Age-based salary increase rates apply for employees with three or more years of service in the Main System, five or more years of service in the Public Safety Systems and for all employees in the Judges System.*

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

Main System and Public Safety: 3.50 percent

Judges: 3.00 percent

This assumption was adopted by the Board for use beginning with the July 1, 2020 actuarial valuation.



Actuarial Valuation Assumptions

The mortality assumptions are as follows:

Type	Assumption	Male Scaling Factor	Female Scaling Factor
Post-Retirement Non-Disabled	Pub-2010 Healthy Retiree Mortality Table (for General Employees), sex distinct	103%	101%
Post-Retirement Disabled	Pub-2010 Disabled Retiree Mortality Table (for General Employees), sex distinct	117%	112%
Pre-Retirement	Pub-2010 Employee Mortality Table (for General Employees), sex distinct	92%	92%

Mortality is projected from 2010 with generational mortality improvement using the MP-2019 two-dimensional mortality improvement scales.

Following is a table with the life expectancies by age as of the actuarial valuation date.

Age	Healthy Mortality		Disabled Mortality	
	Future Life		Future Life	
	Expectancy (years) in 2023		Expectancy (years) in 2023	
	Male	Female	Male	Female
20	67.30	70.75	49.93	54.52
25	61.92	65.35	45.20	49.38
30	56.55	59.95	40.42	44.28
35	51.22	54.58	36.00	39.57
40	45.94	49.23	31.88	35.26
45	40.68	43.91	27.94	31.23
50	35.56	38.71	24.28	27.53
55	30.67	33.72	21.02	24.23
60	25.95	28.84	18.11	21.18
65	21.45	24.09	15.40	18.09
70	17.17	19.52	12.77	14.86
75	13.23	15.25	10.18	11.70
80	9.75	11.40	7.78	8.87
85	6.90	8.14	5.73	6.59
90	4.80	5.65	4.09	4.90
95	3.38	3.94	2.95	3.56
100	2.41	2.76	2.11	2.48
105	1.82	2.02	1.56	1.79

Actuarial Valuation Assumptions

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

	Service and Age-Based Rates for First Five Years of Service					
Service Beginning of Year	Main System			Public Safety		
	Age					
	Under 30	30-39	40+	Under 30	30-39	40+
0	28.00%	20.00%	17.00%	27.00%	19.00%	16.00%
1	24.00%	17.00%	14.00%	25.00%	19.00%	16.00%
2	18.00%	14.00%	12.00%	20.00%	16.00%	14.00%
3	16.00%	13.00%	12.00%	17.00%	14.00%	14.00%
4	13.00%	11.00%	11.00%	17.00%	10.00%	10.00%
Age	Age-Based Rates Only after First Five Years of Service					
	Main System			Public Safety		
20-24	11.00%			10.00%		
25-29	10.00%			10.00%		
30-34	6.50%			7.50%		
35-39	5.50%			7.50%		
40-44	4.50%			5.00%		
45-49	4.20%			5.00%		
50-54	3.90%			5.00%		
55-59	3.60%			5.00%		
60+	3.30%			5.00%		

No pre-retirement termination is assumed for Judges.

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

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

Withdrawal rates end upon eligibility for early retirement.

Early retirement eligibility is as follows:

Main System: Earlier of (i) age 55 and 3 years of service, and (ii) eligibility for Rule of 85. For members hired on or after 1/1/2016, earlier of (i) age 60 and 3 years of service, and (ii) eligibility for Rule of 90.

Public Safety: Age 50 and 3 years of service.

Account Balance Due to Vested Employer Contribution (PEP): Participation Under Chapter 54-52.2: If not elected: None. If elected: 100% of active members of the Main System and Public Safety. Contribution: Maximum allowed, based on service at the beginning of the Plan year.



Actuarial Valuation Assumptions

Rates of disability:

Before age 65: Males: 15.00% of OASDI disability incidence rates.
Females: 8.50% of OASDI disability incidence rates.

Age 65 and later: 0.15% per year.

Rates of disability were as follows:

Age	All Plans	
	Male	Female
20	0.0090%	0.0051%
25	0.0128%	0.0073%
30	0.0165%	0.0094%
35	0.0221%	0.0125%
40	0.0330%	0.0187%
45	0.0539%	0.0306%
50	0.0909%	0.0515%
55	0.1513%	0.0858%
60	0.2440%	0.1383%
65	0.1500%	0.1500%

Social Security Disability (for Judges' disability benefit offset):

Eligibility: 50%
Consumer Price Index Increases: 2.25% per annum
Wage Base Increases: 3.00% per annum

Workers' Compensation (for Judges' disability benefit offset):

None assumed.

Actuarial Valuation Assumptions

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

Age	Main System			Public Safety		Judges	
	Reduced	Unreduced - Rule of 85	Unreduced - Not Rule of 85	Rule of 85	Not Rule of 85	Rule of 85	Not Rule of 85
50		50%		25%	4%		
51		20%		25%	4%		
52		20%		25%	4%		
53		20%		25%	4%		
54		20%		25%	4%		
55	1%	8%		25%	10%	10%	2%
56	1%	8%		25%	10%	10%	2%
57	1%	8%		25%	10%	10%	2%
58	1%	9%		25%	10%	10%	2%
59	2%	9%		25%	10%	10%	2%
60	2%	9%		25%	10%	10%	2%
61	4%	15%		25%	10%	10%	2%
62	8%	20%		50%	25%	10%	2%
63	8%	20%		50%	25%	10%	2%
64	8%	20%		50%	25%	10%	2%
65		35%	20%	50%	50%	100%	10%
66		35%	20%	50%	50%	100%	10%
67		20%	15%	50%	50%	100%	10%
68		20%	15%	50%	50%	100%	10%
69		20%	15%	50%	50%	100%	10%
70		20%	15%	100%	50%	100%	20%
71		20%	15%	100%	50%	100%	20%
72		20%	15%	100%	50%	100%	20%
73		20%	15%	100%	50%	100%	20%
74		20%	15%	100%	50%	100%	20%
75		50%	50%	100%	100%	100%	100%
76		50%	50%				
77		50%	50%				
78		50%	50%				
79		50%	50%				
80+		100%	100%				

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

Age	Main System			Public Safety		Judges	
	Reduced	Unreduced - Rule of 85	Unreduced - Not Rule of 85	Rule of 85	Not Rule of 85	Rule of 85	Not Rule of 85
50		70%		25%	10%		
51		70%		25%	10%		
52		70%		25%	10%		
53		70%		25%	10%		
54		70%		25%	10%		
55	1%	70%		25%	10%	10%	2%
56	1%	70%		25%	10%	10%	2%
57	1%	70%		25%	10%	10%	2%
58	1%	70%		25%	10%	10%	2%
59	2%	70%		25%	10%	10%	2%
60	2%	70%		25%	25%	10%	2%
61	4%	70%		25%	25%	10%	2%
62	8%	70%		50%	25%	10%	2%
63	8%	70%		50%	25%	10%	2%
64	8%	70%		50%	25%	10%	2%
65		70%	25%	50%	50%	100%	10%
66		70%	25%	50%	50%	100%	10%
67		70%	25%	50%	50%	100%	10%
68		70%	25%	50%	50%	100%	10%
69		70%	25%	50%	50%	100%	10%
70		70%	25%	100%	50%	100%	20%
71		70%	25%	100%	50%	100%	20%
72		70%	25%	100%	50%	100%	20%
73		70%	25%	100%	50%	100%	20%
74		70%	25%	100%	50%	100%	20%
75		70%	50%	100%	100%	100%	100%
76		70%	50%				
77		70%	50%				
78		70%	50%				
79		70%	50%				
80+		100%	100%				

Actuarial Valuation Assumptions

Assumed Service

Credit:

All active members (full time and part time) are assumed to earn one full year of service for each assumed future year of service.

Marital Status:

It is assumed that 75 percent of participants in the Main System and Public Safety and 100 percent of Judges have an eligible spouse at the time of retirement or pre-retirement death. The male spouse is assumed to be three years older than the female spouse.

Spouses are assumed to be the opposite sex of the employees and retirees. The relatively low rate of same-sex spouses does not have a material actuarial impact on the actuarial valuation results.

Form of Payment Election Assumption:	Main System and Public Safety		
	Form of Payment	Public Safety	Judges
	Life Annuity	50%	0%
	50% Joint and Survivor	45%	100%
	Refund of Member Contributions	5%	0%

Benefit Service:

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

Decrement Timing:

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

Decrement Operation:

Turnover decrements do not operate after the member reaches retirement eligibility (early or normal).

Eligibility Testing:

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

Pay Increase Timing:

Beginning of (fiscal) year.

Actuarial Valuation Assumptions

Expenses: Assumed administrative expenses were added to the Normal Cost and are based on the prior year's expenses, adjusted for inflation. The assumed amount added to the Normal Cost is:

Expenses	Main System	Judges	Public Safety		Total
			With Prior	Without Prior	
Assumed FY 2023	\$ 2,300,675	\$ 6,389	\$ 66,791	\$ 19,069	\$ 2,392,924
Actual FY 2023	2,552,995	11,044	82,419	23,627	2,670,085
Assumed FY 2024	2,610,437	11,292	84,273	24,158	2,730,160

Assumptions for Missing or Incomplete Data: Pay was annualized for active members who have an entry date after the last actuarial valuation date of July 1, 2022. Pay was annualized by dividing the provided pay by the maximum of one month and calculated service (based on entry date). A minimum pay amount of \$10,000 was assumed for all members. Active members in the Main System with \$0 pay provided were assumed to have pay of \$37,667, the average of non-zero annualized salary of newly hired members. Active members in the Judges System with \$0 pay provided were assumed to have pay of \$156,622, the average of non-zero annualized salary of newly hired members. Active members in the Public Safety with Prior Service System with \$0 pay provided were assumed to have pay of \$50,465, the average of non-zero annualized salary of newly hired members. Active members in the Public Safety Without Prior Service System with \$0 pay provided were assumed to have pay of \$45,413, the average of non-zero annualized salary of newly hired members.

Changes in Actuarial Valuation Assumptions and Methods since the Previous Actuarial Valuation

There have been no changes in actuarial assumptions since the previous actuarial valuation as of June 30, 2022.

SECTION F

BENEFIT PROVISIONS

Brief Summary of Plan Provisions

This Section summarizes the major benefit provisions of the North Dakota Public Employees Retirement System as included in the actuarial valuation. It is not intended to be, nor should it be, interpreted as a complete statement of all plan provisions.

Effective January 1, 2025, the Main System is closed to new members. Employees newly enrolled into the system on January 1, 2025 and later will participate in a new Defined Contribution Plan.

1. Normal Service Retirement:

➤ Eligibility:

Main System:

Attainment of age 65, or at any age with age plus service equal to at least 85 (Rule of 85).

For members enrolled after December 31, 2015, into the Main System, attainment of age 65, or at age 60 with age plus service equal to at least 90 (Rule of 90).

Judges:

Attainment of age 65, or at any age with age plus service equal to at least 85 (Rule of 85).

Public Safety:

Attainment of age 55 and three consecutive years of service (10 years for BCI members hired on or after August 1, 2023), or if not former National Guard, at any age with age plus service equal to at least 85 (Rule of 85). Former National Guard is eligible for Rule of 85 on August 1, 2015.

➤ Benefit:

Main System and Public Safety:

2.00% of final average salary multiplied by service (1.75% for members hired on or after January 1, 2020).

For BCI members who retire on or after August 1, 2023, 3.00% of final average salary for the first twenty years plus 1.75% of final average salary for additional years.

Judges:

3.50% of final average salary for each of the first ten years of service, 2.80% for each of the next 10 years of service and 1.25% for service in excess of 20 years.

Brief Summary of Plan Provisions

2. Early Retirement:

➤ Eligibility:

Main System:

Attainment of age 55 with three years of service.

Judges:

Attainment of age 55 with five years of service.

Public Safety:

Attainment of age 50 with three years of service (10 years for BCI members hired on or after August 1, 2023).

➤ Benefit:

Main System:

The Normal Service Retirement Benefit as determined in the preceding section. A benefit that begins before age 65 (or Rule of 85, if earlier) is reduced by one-half of one percent for each month before the earlier of age 65 or the age at which the Rule of 85 is met.

For members enrolled after December 31, 2015, into the Main System, a benefit that begins before age 65 (or Rule of 90 with minimum age of 60, if earlier) is reduced by 2/3% of one percent for each month before the earlier of age 65 or the age at which the Rule of 90 with minimum age of 60 is met.

Judges:

The Normal Service Retirement Benefit as determined in the preceding section. A benefit that begins before age 65 (or Rule of 85, if earlier) is reduced by one-half of one percent for each month before age 65 or the age at which the Rule of 85 is met.

Public Safety:

The Normal Service Retirement Benefit as determined in the preceding section. A benefit that begins before age 55 (or Rule of 85, if earlier) is reduced by one-half of one percent for each month before age 55 or the age at which the Rule of 85 is met.

Brief Summary of Plan Provisions

3. Disability Benefit:

➤ Eligibility:

Six months of service and inability to engage in any substantial gainful activity.

➤ Benefit:

Main System and Public Safety:

25% of the member's final average salary at disability minus workers' compensation benefits, with a minimum of \$100 per month.

Judges:

70% of the member's final average salary at disability minus Social Security and Workers' Compensation benefits paid.

4. Deferred Vested Retirement:

➤ Eligibility:

Main System and Public Safety:

Three years of service (10 years for BCI members hired on or after August 1, 2023).

Judges:

Five years of service.

➤ Benefit:

Main System and Judges:

The Normal Service Retirement Benefit payable at age 65 or the Rule of 85 (Rule of 90 minimum age of 60 for members first enrolled in the Main System after December 31, 2015), if earlier. Reduced early retirement benefits can be elected upon attainment of age 55.

Public Safety:

The Normal Service Retirement Benefit payable at age 55 or the Rule of 85, if earlier. Reduced early retirement benefit can be selected upon attainment of age 50.

Brief Summary of Plan Provisions

5. Pre-Retirement Death Benefits:

(a) Vested participants with a surviving spouse

➤ Eligibility:

Main System and Public Safety:

Three years of service (10 years for BCI members hired on or after August 1, 2023).

Judges:

Five years of service.

➤ Benefit:

Main System and Public Safety:

One of the following options:

- Lump sum payment of member's accumulated contributions with interest.
- 50% of the member's accrued benefit (not reduced on account of age) payable for the surviving spouse's lifetime.
- Continuation portion of 100% joint and survivor annuity (only if participant was eligible for normal retirement).

Judges:

One of the following options:

- Lump sum payment of member's accumulated contributions with interest.
- 100% of the member's accrued benefit (not reduced on account of age) payable for the spouse's lifetime.

(b) Non-vested members or vested members without a surviving spouse

➤ Eligibility:

Main System, Judges and Public Safety:

Non-vested or no surviving spouse.

Brief Summary of Plan Provisions

➤ Benefit:

Main System, Judges and Public Safety:

Lump sum payment of member's accumulated contributions with interest.

6. Refund of Member Contributions:

Paid to terminated non-vested members and terminated vested members who choose a refund of employee contributions in lieu of a monthly retirement benefit.

7. Accumulated Member Contributions:

Member contributions accumulate with interest at the following rates:

<u>Time Period</u>	<u>Per Annum Interest Rate</u>
Through June 30, 1981	5.0%
July 1, 1981 to June 30, 1986	6.0%
Effective June 30, 1986	7.50% (0.5% less than the actuarial interest rate assumption)
Effective January 1, 2018	7.25% (0.5% less than the actuarial interest rate assumption)
Effective January 1, 2020	7.00% (0.5% less than the actuarial interest rate assumption)
Effective January 1, 2021	6.50% (0.5% less than the actuarial interest rate assumption)
Effective January 1, 2023	6.00% (0.5% less than the actuarial interest rate assumption)

8. Standard and Optional Forms of Payment:

Standard form of payment:

Main System and Public Safety:

Monthly benefit for life with a refund to beneficiary at death of the remaining balance (if any) of accumulated member contributions.

Judges:

Monthly benefit for life, with 50% payable to an eligible survivor.

Optional forms of payment:

- Life annuity (for Judges).
- 50% joint and survivor annuity with pop-up (for Main System and Public Safety).



Brief Summary of Plan Provisions

- 100% joint and survivor annuity with pop-up.
- 20-year certain and life annuity.
- 10-year certain and life annuity.
- A partial lump sum payment in addition to one of the annuity options above.
- An actuarially equivalent graduated benefit option with either a one percent or two percent increase to be applied the first day of January of each year. Not available for disability or early retirements or in combination with a partial lump sum option, a deferred normal retirement option or a Social Security level income annuity.

9. Final Average Salary:

For members who terminate after December 31, 2019, final average salary is the higher of the final average salary calculated on December 31, 2019 or the average salary earned in the three highest periods of twelve consecutive months employed during the last 180 months of employment.

10. Contributions:

Contribution rates specified in the Century Code (except employer rate for Public Safety); differ between permanent employees and temporary employees. Rates are as follows:

Rates Set by Statute

	Member	Employer			
		Before 2024	2024-2025	2026 and Later	
				State	Political Subdivision
Main System Permanent Employees					
- Hired before 2020	7.00%	7.12%	8.12%	ADEC*	8.12%
- Hired after 2019	7.00%	8.26%	9.26%	ADEC*	9.26%
Main System Temporary Employees					
- Hired before 2020	14.12%	0.00%	0.00%	0.00%	0.00%
- Hired after 2019	15.26%	0.00%	0.00%	0.00%	0.00%
Judges	8.00%	17.52%	17.52%	17.52%	17.52%

* *Actuarially Determined Employer Contribution. The 2026 and 2027 contribution will be based on the ADEC from the July 1, 2024 valuation with the amortization of the unfunded liability determined on a level percent of payroll basis over a closed period beginning on January 1, 2026 and ending June 30, 2056*

Brief Summary of Plan Provisions

Rates Determined by the Board of Retirement

	Member	Employer	
		Before 2024	2024 and Later
Public Safety with prior Main System service	5.50%	9.81%	11.40%
- National Guard Members	5.50%	9.81%	11.40%
Public Safety without prior Main System service	5.50%	7.93%	9.16%

	Member			Employer		
	Before 2024	2024	2025 and Later	Before 8/1/2023	8/1/2023 to 12/31/2023	2024 and Later
Public Safety with prior Main System service						
- BCI Employees	6.00%	7.00%	8.00%	9.81%	20.67%	22.26%
- State Public Safety Employees	6.00%	6.00%	6.00%	N/A	12.75%	14.34%

11. Portability Enhancement Provision:

Effective January 1, 2000, a member's account balance includes vested employer contributions equal to the member's contributions to the deferred compensation Plan under chapter 54-52.2. The vested employer contribution may not exceed:

1. For months one through 12 of service credit, \$25 or 1% of the member's monthly salary, whichever is greater.
2. For months 13 through 24 of service credit, \$25 or 2% of the member's monthly salary, whichever is greater.
3. For months 25 through 36 of service credit, \$25 or 3% of the member's monthly salary, whichever is greater.
4. For service exceeding 36 months, \$25 or 4% of the member's monthly salary, whichever is greater.

Vested employer contributions are credited monthly to the member's account balance.



Brief Summary of Plan Provisions

12. Rollovers:

The fund may accept rollovers from other qualified plans under rules adopted by the Board for the purchase of additional service credit.

13. Special Election to Transfer to DC Plan:

State employees participating in the Main System on January 1, 2025 who are at least age 18 with 5 years or less of participation will be eligible to irrevocably elect to transfer to the existing DC Plan during a three-month election period ending March 31, 2025. For members who elect to transfer to the existing DC Plan, NDPERS will transfer a lump sum from the Main System to the DC Plan based on the actuarial present value of the accrued benefit as of January 1, 2025, plus interest from January 1, 2025 to the date of transfer. The state employer of an employee who elects to transfer to the existing DC Plan shall contribute an additional amount of \$3,333 annually for up to three years, provided the employee continues employment.

Changes in Plan Provisions since the Previous Actuarial Valuation

Effective January 1, 2025, the Main System is closed to new members. Employees newly enrolled into the system on January 1, 2025 and later will participate in a new Defined Contribution Plan.

State employees participating in the Main System on January 1, 2025 who are at least age 18 with 5 years or less of participation will be eligible to irrevocably elect to transfer to the existing DC Plan during a three-month election period ending March 31, 2025. For members who elect to transfer to the existing DC Plan, NDPERS will transfer a lump sum from the Main System to the DC Plan based on the actuarial present value of the accrued benefit as of January 1, 2025, plus interest from January 1, 2025 to the date of transfer. The state employer of an employee who elects to transfer to the existing DC Plan shall contribute an additional amount of \$3,333 annually for up to three years, provided the employee continues employment.

Member and/or employer contribution rates were changed for all plans except the Judges Plan.

For BCI members who retire on or after August 1, 2023, the multiplier is 3.00% for the first twenty years and 1.75% for additional years.

For BCI members hired on or after August 1, 2023, the vesting requirement is changed from 3 years to 10 years.

Peace Officers employed by the State who were Main System participants transferred to the Public Safety with prior Main System service effective August 1, 2023.

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the System to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The current employer and employee fixed rate contributions are assumed to be made in each future year. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed actuarial valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) a tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this actuarial valuation, the expected rate of return on pension plan investments is 6.50%; the municipal bond rate is 3.86%; and the resulting Single Discount Rate is 6.50%.

The tables in this section provide detailed information on the development of the Single Discount Rate for the total PERS plan.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Projection of Contributions by Plan

Main System				Judges			Public Safety with Prior Service			Public Safety without Prior Service			Total		
Year	Projected Contributions from Current Employees	Projected Contributions from Employer	Projected Total Contributions	Projected Contributions from Current Employees	Projected Contributions from Employer	Projected Total Contributions	Projected Contributions from Current Employees	Projected Contributions from Employer	Projected Total Contributions	Projected Contributions from Current Employees	Projected Contributions from Employer	Projected Total Contributions	Projected Contributions from Current Employees	Projected Contributions from Employer	Projected Total Contributions
2024	\$ 89,855,719	\$ 101,376,430	\$ 191,232,150	\$ 737,871	\$ 1,614,203	\$ 2,352,074	\$ 5,167,740	\$ 10,055,684	\$ 15,223,424	\$ 888,030	\$ 1,377,241	\$ 2,265,271	\$ 96,649,361	\$ 114,423,558	\$ 211,072,919
2025	80,613,257	120,095,279	200,708,535	641,004	1,772,173	2,413,178	4,899,238	12,067,889	16,967,126	831,226	1,636,789	2,468,015	86,984,725	135,572,130	222,556,854
2026	77,722,893	157,697,324	235,420,217	592,347	1,541,328	2,133,675	4,694,486	11,821,379	16,515,865	790,288	1,539,964	2,330,252	83,800,014	172,599,995	256,400,009
2027	75,359,952	171,407,392	246,767,343	557,559	1,435,509	1,993,068	4,532,193	11,876,610	16,408,803	753,755	1,511,091	2,264,846	81,203,459	186,230,602	267,434,060
2028	73,277,699	170,790,651	244,068,350	532,217	1,360,780	1,892,998	4,403,728	11,851,120	16,254,848	727,209	1,457,265	2,184,474	78,940,853	185,459,817	264,400,670
2029	71,499,064	180,254,093	251,753,156	485,378	1,340,226	1,825,605	4,289,097	11,886,102	16,175,199	703,451	1,422,511	2,125,962	76,976,990	194,902,932	271,879,922
2030	69,791,396	174,745,357	244,536,753	454,382	1,237,190	1,691,572	4,179,818	11,942,632	16,122,450	682,218	1,392,488	2,074,706	75,107,814	189,317,667	264,425,481
2031	67,998,219	183,540,094	251,538,313	433,809	1,170,867	1,604,676	4,077,334	12,012,716	16,090,050	664,211	1,368,817	2,033,027	73,173,573	198,092,493	271,266,066
2032	66,154,124	176,962,060	243,116,183	433,078	1,115,186	1,548,264	3,964,279	12,086,512	16,050,791	647,471	1,349,070	1,996,541	71,198,952	191,512,829	262,711,781
2033	64,232,505	184,894,830	249,127,335	425,204	1,125,903	1,551,107	3,858,054	12,155,394	16,013,449	632,750	1,331,658	1,964,408	69,148,513	199,507,786	268,656,299
2034	62,262,365	177,328,556	239,590,921	399,687	1,130,384	1,530,071	3,748,838	12,247,130	15,995,968	618,625	1,317,824	1,936,448	67,029,515	192,023,893	259,053,409
2035	60,231,391	184,798,570	245,029,961	384,604	1,076,005	1,460,609	3,638,781	12,326,506	15,965,287	600,861	1,303,083	1,903,944	64,855,638	199,504,164	264,359,801
2036	58,105,976	176,848,553	234,954,529	375,411	1,042,654	1,418,066	3,525,750	12,410,142	15,935,892	581,805	1,282,478	1,864,283	62,588,943	191,583,826	254,172,770
2037	55,942,055	183,765,929	239,707,984	347,910	1,046,955	1,394,864	3,419,549	12,501,947	15,921,496	561,588	1,259,304	1,820,892	60,271,102	198,574,135	258,845,237
2038	53,724,395	176,276,245	230,000,639	339,745	977,215	1,316,960	3,304,266	12,600,341	15,904,607	540,387	1,233,094	1,773,481	57,908,792	191,086,895	248,995,687
2039	51,461,457	182,825,815	234,287,272	272,425	1,024,663	1,297,088	3,178,320	12,681,482	15,859,802	517,109	1,205,144	1,722,254	55,429,311	197,737,105	253,166,416
2040	49,102,663	181,313,265	230,415,928	253,077	820,768	1,073,844	3,050,392	12,760,530	15,810,923	492,076	1,174,096	1,666,171	52,898,207	196,068,659	248,966,866
2041	46,717,162	187,942,842	234,660,003	225,790	772,679	998,469	2,910,811	12,834,751	15,745,561	464,895	1,137,340	1,602,235	50,318,658	202,687,612	253,006,269
2042	44,295,059	186,892,443	231,187,502	202,524	724,634	927,157	2,759,993	12,884,317	15,644,310	434,084	1,094,565	1,528,649	47,691,660	201,595,958	249,287,618
2043	41,874,905	193,606,996	235,481,902	171,687	497,279	668,966	2,590,669	12,922,653	15,513,322	402,831	1,044,594	1,447,425	45,040,091	208,071,523	253,111,614
2044	39,420,559	193,142,343	232,562,902	138,081	348,623	486,703	2,397,702	12,924,213	15,321,915	372,797	993,917	1,366,715	42,329,139	207,409,096	249,738,235
2045	36,948,486	200,081,027	237,029,513	117,616	413,491	531,107	2,200,744	12,899,986	15,100,731	344,123	943,537	1,287,660	39,610,970	214,338,040	253,949,010
2046	34,464,216	200,291,584	234,755,800	94,420	436,069	530,489	2,013,142	12,876,416	14,889,558	312,538	891,666	1,204,205	36,884,316	214,495,736	251,380,052
2047	31,936,336	207,396,249	239,332,585	43,507	407,413	450,920	1,816,170	12,855,755	14,671,926	284,683	836,201	1,120,884	34,080,697	221,495,617	255,576,314
2048	29,375,444	208,143,959	237,519,403	40,127	337,519	377,646	1,430,629	12,816,831	14,247,460	258,153	779,511	1,037,664	31,287,522	221,872,520	253,160,042
2049	26,863,126	215,480,134	242,343,260	12,843	311,057	323,900	1,404,407	12,768,145	14,172,553	228,459	720,636	949,095	28,508,836	229,099,972	257,608,808
2050	24,429,576	216,935,947	241,365,523	11,854	176,733	188,588	1,206,119	12,709,203	13,915,322	200,155	664,661	864,816	25,847,705	230,486,544	256,334,249
2051	22,072,614	224,411,519	246,484,133	-	237,889	237,889	1,019,770	12,643,184	13,662,953	174,350	611,262	785,612	23,266,734	237,903,854	261,170,588
2052	19,803,106	226,622,595	246,425,701	-	22,082	22,082	845,117	12,583,508	13,428,625	149,309	553,302	702,611	20,797,532	230,781,487	260,579,019
2053	17,645,909	234,536,310	252,182,219	-	-	-	688,153	12,545,575	13,233,728	125,826	497,812	623,637	18,459,887	247,579,697	266,039,584
2054	15,624,176	237,689,580	253,313,756	-	88,052	88,052	547,650	12,547,716	13,095,366	102,241	444,481	546,722	16,274,067	250,769,829	267,043,896
2055	13,749,215	246,165,766	259,914,981	-	135,443	135,443	420,661	12,581,410	13,002,071	79,059	390,519	469,579	14,248,935	259,273,139	273,522,074
2056	11,982,545	249,167,886	261,150,431	-	156,032	156,032	311,773	12,648,942	12,960,715	59,608	341,453	401,061	12,353,926	262,314,313	274,668,239
2057	10,344,084	258,057,897	268,401,981	-	72,593	72,593	226,989	12,771,943	12,998,932	44,212	301,559	345,771	10,615,285	271,203,992	281,819,277
2058	8,856,215	6,368,446	15,224,661	-	96,725	96,725	162,259	12,963,823	13,126,082	32,457	271,351	303,809	9,050,931	19,700,346	28,751,277
2059	7,498,625	5,245,490	12,744,115	-	210,361	210,361	115,378	13,226,180	13,341,558	23,800	250,583	274,384	7,637,803	18,932,614	26,570,417
2060	6,277,524	4,165,783	10,443,307	-	192,092	192,092	81,247	13,550,125	13,631,371	17,071	236,788	253,859	6,375,842	18,144,787	24,520,629
2061	5,191,552	3,169,803	8,361,355	-	178,860	178,860	54,736	13,924,079	13,978,815	11,982	228,928	240,910	5,258,270	17,501,669	22,759,939
2062	4,243,320	2,334,246	6,577,566	-	28,455	28,455	35,875	14,340,584	14,376,459	7,539	226,214	233,753	4,286,735	16,929,499	21,216,234
2063	3,416,903	1,808,095	5,224,998	-	35,105	35,105	22,238	14,794,778	14,817,016	4,560	227,093	231,653	3,443,700	16,865,071	20,308,771
2064	2,718,612	1,496,755	4,215,367	-	164,649	164,649	13,219	15,284,310	15,297,529	2,632	231,366	233,998	2,734,464	17,777,080	19,911,543
2065	2,136,483	1,218,595	3,355,079	-	148,121	148,121	7,550	15,807,945	15,815,495	1,514	238,586	240,100	2,145,547	17,413,247	19,558,794
2066	1,654,343	1,025,264	2,679,606	-	154,991	154,991	4,097	16,362,848	16,366,945	871	248,446	249,317	1,659,311	17,791,549	19,450,860
2067	1,271,281	956,441	2,227,722	-	86,004	86,004	2,109	16,947,643	16,949,751	480	260,474	260,954	1,273,870	18,250,562	19,524,432
2068	972,029	919,190	1,891,219	-	113,513	113,513	1,063	17,559,920	17,560,982	242	274,317	274,559	973,333	18,866,940	19,840,274
2069	735,897	895,733	1,631,630	-	263,404	263,404	508	18,197,980	18,198,488	119	289,476	289,596	736,524	19,646,593	20,383,117
2070	553,440	879,191	1,432,631	-	287,082	287,082	239	18,861,641	18,861,880	50	306,124	306,174	553,729	20,334,038	20,887,767
2071	414,353	879,301	1,293,653	-	196,951	196,951	101	19,550,945	19,551,046	22	324,319	324,341	414,476	20,951,515	21,365,991
2072	309,345	901,341	1,210,686	-	173,851	173,851	41	20,266,941	20,266,982	9	343,744	343,753	309,395	21,685,878	21,995,272
2073	225,638	927,955	1,153,593	-	309,274	309,274	15	21,011,247	21,011,261	4	364,716	364,720	225,657	22,613,192	22,838,849
2074	161,253	954,601	1,115,854	-	390,111	390,111	4	21,785,163	21,785,167	2	387,790	387,791	161,259	23,517,665	23,678,923
2075	111,181	984,037	1,095,218	-	461,060	461,060	0	22,589,884	22,589,885	1	412,728	412,728	111,182	24,447,708	24,558,890
2076	73,711	1,020,330	1,094,041	-	389,540	389,540	-	23,428,029	23,428,029	-	439,389	439,389	73,711	25,277,289	25,351,000
2077	46,998	1,066,080	1,113,078	-	408,904	408,904	-	24,301,563	24,301,563	-	467,987	467,987	46,998	26,244,533	26,291,531
2078	28,178	1,120,907	1,149,086	-	561,357	561,357	-	25,211,745	25,211,745	-	498,501	498,501	27,392,510	27,422,689	27,450,189
2079	15,717	1,190,407	1,206,124	-	591,831	591,831	-	26,159,602	26,159,602	-	531,047	531,047	15,717	28,472,886	28,488,603
2080	7,748	1,245,321													

Projection of Benefit Payments and Administrative Expenses by Plan

Year	Main System		Judges		Public Safety with Prior Service		Public Safety without Prior Service		Total	
	Projected Benefit Payments	Projected Administrative Expenses	Projected Benefit Payments	Projected Administrative Expenses	Projected Benefit Payments	Projected Administrative Expenses	Projected Benefit Payments	Projected Administrative Expenses	Projected Benefit Payments	Projected Administrative Expenses
2024	\$ 271,483,363	\$ 2,392,893	\$ 4,265,952	\$ 9,557	\$ 4,663,736	\$ 77,415	\$ 417,054	\$ 21,724	\$ 280,830,104	\$ 2,501,589
2025	287,138,132	2,229,545	4,683,726	8,775	5,257,960	73,196	504,606	20,215	297,584,424	2,331,731
2026	299,267,930	2,161,644	4,822,279	8,207	5,777,116	69,525	585,896	18,871	310,453,221	2,258,246
2027	314,049,613	2,101,927	4,902,612	7,788	6,490,752	66,245	692,525	17,742	326,135,503	2,193,702
2028	328,908,872	2,051,060	5,035,812	7,053	7,282,582	63,326	811,577	16,762	342,038,842	2,138,202
2029	343,959,434	2,002,422	5,168,379	6,556	8,177,693	60,592	946,194	15,876	358,251,700	2,085,446
2030	359,345,108	1,951,680	5,224,941	6,215	9,113,115	58,042	1,081,230	15,095	374,764,394	2,031,031
2031	375,194,615	1,899,465	5,195,040	6,161	10,201,791	55,498	1,215,141	14,375	391,806,586	1,975,499
2032	391,469,906	1,844,974	5,114,681	6,008	11,359,791	53,110	1,349,835	13,725	409,294,213	1,917,816
2033	407,969,925	1,789,042	5,116,785	5,614	12,595,728	50,775	1,509,855	13,120	427,192,293	1,858,552
2034	424,924,430	1,731,331	5,150,818	5,364	13,961,933	48,511	1,695,216	12,485	445,732,398	1,797,691
2035	442,357,811	1,670,926	5,132,066	5,198	15,441,921	46,283	1,898,717	11,856	464,830,515	1,734,264
2036	459,920,320	1,609,386	5,145,895	4,783	16,992,463	44,192	2,125,318	11,232	484,183,997	1,669,593
2037	477,517,483	1,546,287	5,144,853	4,638	18,665,985	42,078	2,365,496	10,616	503,693,817	1,603,618
2038	495,184,611	1,481,858	5,279,748	3,692	20,436,543	39,918	2,615,854	9,991	523,516,756	1,535,459
2039	505,166,507	1,414,651	5,454,835	3,406	22,000,805	37,787	2,839,972	9,356	535,462,120	1,465,200
2040	522,691,410	1,346,669	5,492,935	3,019	23,993,861	35,591	3,131,951	8,706	555,310,157	1,393,984
2041	540,093,086	1,277,621	5,540,400	2,688	26,154,018	33,332	3,472,304	8,016	575,259,809	1,321,656
2042	557,086,927	1,208,541	5,599,611	2,263	28,435,630	30,934	3,848,614	7,336	594,970,782	1,249,074
2043	573,613,763	1,138,424	5,696,100	1,807	30,966,248	28,339	4,210,042	6,697	614,486,153	1,175,267
2044	589,520,357	1,067,733	5,744,115	1,528	33,552,085	25,745	4,563,607	6,099	633,380,163	1,101,105
2045	604,936,262	996,690	5,744,001	1,218	36,059,626	23,294	4,915,433	5,470	651,655,322	1,026,673
2046	620,134,878	924,380	5,867,469	557	38,495,298	20,795	5,234,858	4,918	669,732,503	950,651
2047	634,817,465	851,068	5,907,287	510	40,816,659	18,288	5,555,844	4,401	687,097,255	874,267
2048	648,400,012	779,075	5,849,948	162	43,221,118	15,757	5,893,192	3,849	703,364,270	798,843
2049	660,356,491	709,244	5,780,495	149	45,490,605	13,392	6,254,485	3,333	717,882,076	726,118
2050	671,210,709	641,501	5,642,051	-	47,487,873	11,202	6,587,403	2,868	730,928,037	655,571
2051	681,120,492	576,139	5,500,193	-	49,233,701	9,182	6,851,887	2,427	742,706,274	587,749
2052	689,537,836	513,888	5,308,635	-	50,671,619	7,393	7,073,490	2,022	752,591,580	523,302
2053	696,657,810	455,455	5,119,628	-	51,821,513	5,816	7,268,647	1,624	760,867,599	462,895
2054	702,243,777	401,211	4,933,055	-	52,713,484	4,416	7,449,401	1,242	767,339,717	406,869
2055	706,259,383	350,059	4,748,753	-	53,331,993	3,235	7,593,193	926	771,933,322	354,221
2056	708,473,882	302,590	4,566,540	-	53,644,654	2,327	7,683,444	679	774,368,520	305,596
2057	708,819,457	259,407	4,386,194	-	53,689,199	1,643	7,723,095	493	774,617,945	261,543
2058	707,097,098	219,948	4,207,456	-	53,490,058	1,154	7,721,163	357	772,515,775	221,460
2059	703,049,271	184,399	4,030,040	-	53,093,622	803	7,687,961	253	767,860,894	185,455
2060	696,968,395	152,721	3,853,620	-	52,549,318	534	7,627,831	175	760,999,165	153,430
2061	688,263,090	124,985	3,677,832	-	51,871,141	346	7,549,415	109	751,361,478	125,440
2062	677,288,209	100,755	3,502,342	-	51,077,829	212	7,449,404	65	739,317,784	101,032
2063	664,200,261	80,239	3,326,864	-	50,181,009	124	7,328,580	37	725,036,714	80,401
2064	649,116,991	63,107	3,151,202	-	49,194,472	70	7,190,079	21	708,652,744	63,198
2065	632,173,038	48,902	2,975,241	-	48,129,927	38	7,037,473	12	690,315,679	48,951
2066	613,570,974	37,601	2,798,982	-	46,996,726	19	6,873,787	7	670,240,469	37,627
2067	593,761,597	28,766	2,622,563	-	45,801,475	10	6,700,530	3	648,886,166	28,778
2068	572,999,341	21,797	2,446,273	-	44,549,375	5	6,518,384	2	626,513,373	21,803
2069	551,422,560	16,414	2,270,554	-	43,243,642	2	6,328,031	1	603,264,787	16,417
2070	529,184,243	12,305	2,095,963	-	41,886,641	1	6,129,866	0	579,296,713	12,306
2071	506,391,484	9,196	1,923,191	-	40,480,172	0	5,924,370	0	554,719,218	9,196
2072	483,217,657	6,717	1,753,081	-	39,026,118	0	5,712,034	0	529,708,890	6,717
2073	459,748,457	4,808	1,586,629	-	37,526,681	0	5,493,390	0	504,355,156	4,808
2074	436,088,682	3,320	1,424,907	-	35,984,791	0	5,269,041	0	478,767,421	3,320
2075	412,326,004	2,204	1,268,999	-	34,404,069	-	5,039,661	-	453,038,733	2,204
2076	388,541,062	1,406	1,120,036	-	32,788,885	-	4,806,007	-	427,255,990	1,406
2077	364,837,480	843	979,067	-	31,144,211	-	4,568,931	-	401,529,690	843
2078	341,309,124	471	847,005	-	29,475,604	-	4,329,380	-	375,961,113	471
2079	318,056,776	233	724,622	-	27,789,424	-	4,088,320	-	350,659,142	233
2080	295,173,497	108	612,472	-	26,092,617	-	3,846,741	-	325,725,327	108
2081	272,760,450	47	510,930	-	24,392,673	-	3,605,708	-	301,269,761	47



Projection of Contributions

Year	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
2024	\$ 96,649,361	\$ 80,275,833	\$ 34,147,725	\$ 211,072,919
2025	86,984,725	81,218,089	54,354,040	222,556,854
2026	83,800,014	77,870,431	94,729,564	256,400,009
2027	81,203,459	75,137,787	111,092,815	267,434,060
2028	78,940,853	72,811,756	112,648,061	264,400,670
2029	76,976,990	70,750,886	124,152,046	271,879,922
2030	75,107,814	68,796,918	120,520,750	264,425,481
2031	73,173,573	66,852,593	131,239,900	271,266,066
2032	71,198,952	64,895,999	126,616,829	262,711,781
2033	69,148,513	62,838,924	136,668,862	268,656,299
2034	67,029,515	60,687,612	131,336,281	259,053,409
2035	64,855,638	58,497,373	141,006,791	264,359,801
2036	62,588,943	56,224,177	135,359,650	254,172,770
2037	60,271,102	53,874,185	144,699,950	258,845,237
2038	57,908,792	51,512,404	139,574,492	248,995,687
2039	55,429,311	48,968,866	148,768,239	253,166,416
2040	52,898,207	46,473,771	149,594,888	248,966,866
2041	50,318,658	43,934,634	158,752,977	253,006,269
2042	47,691,660	41,369,088	160,226,870	249,287,618
2043	45,040,091	38,784,472	169,287,051	253,111,614
2044	42,329,139	36,156,661	171,252,436	249,738,235
2045	39,610,970	33,568,157	180,769,884	253,949,010
2046	36,884,316	30,998,692	183,497,044	251,380,052
2047	34,080,697	28,392,002	193,103,616	255,576,314
2048	31,287,522	25,872,838	195,999,682	253,160,042
2049	28,508,836	23,363,615	205,736,357	257,608,808
2050	25,847,705	20,979,812	209,506,732	256,334,249
2051	23,266,734	18,675,792	219,228,062	261,170,588
2052	20,797,532	16,489,941	223,291,546	260,579,019
2053	18,459,887	14,448,275	233,131,422	266,039,584
2054	16,274,067	12,563,428	238,206,401	267,043,896
2055	14,248,935	10,842,812	248,430,327	273,522,074
2056	12,353,926	9,267,472	253,046,841	274,668,239
2057	10,615,285	7,853,020	263,350,972	281,819,277
2058	9,050,931	6,602,848	13,097,498	28,751,277
2059	7,637,803	5,491,962	13,440,652	26,570,417
2060	6,375,842	4,519,201	13,625,586	24,520,629
2061	5,258,270	3,673,779	13,827,890	22,759,939
2062	4,286,735	2,951,758	13,977,741	21,216,234
2063	3,443,700	2,337,984	14,527,087	20,308,771
2064	2,734,464	1,831,360	15,345,720	19,911,543
2065	2,145,547	1,418,926	15,994,321	19,558,794
2066	1,659,311	1,085,913	16,705,635	19,450,860
2067	1,273,870	825,939	17,424,623	19,524,432
2068	973,333	625,343	18,241,598	19,840,274
2069	736,524	468,875	19,177,718	20,383,117
2070	553,729	348,869	19,985,169	20,887,767
2071	414,476	257,835	20,693,680	21,365,991
2072	309,395	188,471	21,497,407	21,995,272
2073	225,657	133,985	22,479,206	22,838,849
2074	161,259	93,259	23,424,405	23,678,923
2075	111,182	62,139	24,385,570	24,558,890
2076	73,711	39,602	25,237,686	25,351,000
2077	46,998	24,015	26,220,518	26,291,531
2078	28,178	13,436	27,379,074	27,420,689
2079	15,717	7,008	28,465,878	28,488,603
2080	7,748	2,932	29,529,029	29,539,709
2081	3,584	1,131	30,563,632	30,568,347
2082	1,569	207	31,793,306	31,795,082

Projection of Plan Fiduciary Net Position

Year	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.500%	Additional Cash Infusion/(Asset Transfer)	Projected Ending Plan Fiduciary Net Position
	(a)	(b)	(c)	(d)	(e)	(f)	(g)=(a)+(b)-(c)-(d)+(e)+(f)
2024	\$ 3,843,940,742	\$ 211,072,919	\$ 280,830,104	\$ 2,501,589	\$ 247,544,708	\$ 135,000,000	\$ 4,154,226,675
2025	4,154,226,675	222,556,854	297,584,424	2,331,731	267,550,136	(9,738,791)	4,334,678,718
2026	4,334,678,718	256,400,009	310,453,221	2,258,246	279,952,805	0	4,558,320,066
2027	4,558,320,066	267,434,060	326,135,503	2,193,702	294,342,868	0	4,791,767,789
2028	4,791,767,789	264,400,670	342,038,842	2,138,202	308,912,990	0	5,020,904,405
2029	5,020,904,405	271,879,922	358,251,700	2,085,446	323,529,184	0	5,255,976,365
2030	5,255,976,365	264,425,481	374,764,394	2,031,031	338,043,932	0	5,481,650,354
2031	5,481,650,354	271,266,066	391,806,586	1,975,499	352,388,185	0	5,711,522,520
2032	5,711,522,520	262,711,781	409,294,213	1,917,816	366,498,683	0	5,929,520,954
2033	5,929,520,954	268,656,299	427,192,293	1,858,552	380,288,102	0	6,149,414,511
2034	6,149,414,511	259,053,409	445,732,398	1,797,691	393,682,881	0	6,354,620,712
2035	6,354,620,712	264,359,801	464,830,515	1,734,264	406,582,138	0	6,558,997,873
2036	6,558,997,873	254,172,770	484,183,997	1,669,593	418,923,769	0	6,746,240,821
2037	6,746,240,821	258,845,237	503,693,817	1,603,618	430,622,049	0	6,930,410,671
2038	6,930,410,671	248,995,687	523,516,756	1,535,459	441,646,095	0	7,096,000,239
2039	7,096,000,239	253,166,416	535,462,120	1,465,200	452,162,966	0	7,264,402,301
2040	7,264,402,301	248,966,866	555,310,157	1,393,984	462,342,135	0	7,419,007,162
2041	7,419,007,162	253,006,269	575,259,809	1,321,656	471,884,822	0	7,567,316,787
2042	7,567,316,787	249,287,618	594,970,782	1,249,074	480,777,794	0	7,701,162,344
2043	7,701,162,344	253,111,614	614,486,153	1,175,267	488,978,174	0	7,827,590,712
2044	7,827,590,712	249,738,235	633,380,163	1,101,105	496,486,093	0	7,939,333,772
2045	7,939,333,772	253,949,010	651,655,322	1,026,673	503,301,876	0	8,043,902,663
2046	8,043,902,663	251,380,052	669,732,503	950,651	509,440,849	0	8,134,040,410
2047	8,134,040,410	255,576,314	687,097,255	874,267	514,881,008	0	8,216,526,210
2048	8,216,526,210	253,160,042	703,364,270	798,843	519,647,350	0	8,285,170,489
2049	8,285,170,489	257,608,808	717,882,076	726,118	523,789,462	0	8,347,960,565
2050	8,347,960,565	256,334,249	730,928,037	655,571	527,414,983	0	8,400,126,190
2051	8,400,126,190	261,170,588	742,706,274	587,749	530,585,859	0	8,448,588,614
2052	8,448,588,614	260,579,019	752,591,580	523,302	533,402,839	0	8,489,455,590
2053	8,489,455,590	266,039,584	760,867,599	462,895	535,971,063	0	8,530,135,743
2054	8,530,135,743	267,043,896	767,339,717	406,869	538,442,159	0	8,567,875,212
2055	8,567,875,212	273,522,074	771,933,322	354,221	540,957,193	0	8,610,066,937
2056	8,610,066,937	274,668,239	774,368,520	305,596	543,659,977	0	8,653,721,037
2057	8,653,721,037	281,819,277	774,617,945	261,543	546,719,674	0	8,707,380,499
2058	8,707,380,499	28,751,277	772,515,775	221,460	542,180,833	0	8,505,575,373
2059	8,505,575,373	26,570,417	767,860,894	185,455	529,143,791	0	8,293,243,233
2060	8,293,243,233	24,520,629	760,999,165	153,430	515,497,153	0	8,072,108,419
2061	8,072,108,419	22,759,939	751,361,478	125,440	501,376,258	0	7,844,757,698
2062	7,844,757,698	21,216,234	739,317,784	101,032	486,935,119	0	7,613,490,234
2063	7,613,490,234	20,308,771	725,036,714	80,401	472,331,194	0	7,381,013,084
2064	7,381,013,084	19,911,543	708,652,744	63,198	457,732,119	0	7,149,940,805
2065	7,149,940,805	19,558,794	690,315,679	48,951	443,288,166	0	6,922,423,134
2066	6,922,423,134	19,450,860	670,240,469	37,627	429,138,600	0	6,700,734,497
2067	6,700,734,497	19,524,432	648,886,166	28,778	415,414,564	0	6,486,758,549
2068	6,486,758,549	19,840,274	626,513,373	21,803	402,232,123	0	6,282,295,770
2069	6,282,295,770	20,383,117	603,264,787	16,417	389,703,264	0	6,089,100,947
2070	6,089,100,947	20,887,767	579,296,713	12,306	377,928,575	0	5,908,608,270
2071	5,908,608,270	21,365,991	554,719,218	9,196	366,998,142	0	5,742,243,989
2072	5,742,243,989	21,995,272	529,708,890	6,717	357,004,712	0	5,591,528,367
2073	5,591,528,367	22,838,849	504,355,156	4,808	348,046,267	0	5,458,053,519



Projection of Plan Fiduciary Net Position

Year	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.500%	Additional Cash Infusion/(Asset Transfer)	Projected Ending Plan Fiduciary Net Position
	(a)	(b)	(c)	(d)	(e)	(f)	(g)=(a)+(b)-(c)-(d)+(e)+(f)
2074	5,458,053,519	23,678,923	478,767,421	3,320	340,215,832	0	5,343,177,533
2075	5,343,177,533	24,558,890	453,038,733	2,204	333,600,096	0	5,248,295,582
2076	5,248,295,582	25,351,000	427,255,990	1,406	328,282,882	0	5,174,672,067
2077	5,174,672,067	26,291,531	401,529,690	843	324,350,400	0	5,123,783,465
2078	5,123,783,465	27,420,689	375,961,113	471	321,896,669	0	5,097,139,239
2079	5,097,139,239	28,488,603	350,659,142	233	321,008,332	0	5,095,976,799
2080	5,095,976,799	29,539,709	325,725,327	108	321,763,993	0	5,121,555,066
2081	5,121,555,066	30,568,347	301,269,761	47	324,241,780	0	5,175,095,385
2082	5,175,095,385	31,795,082	277,400,306	18	328,524,688	0	5,258,014,830
2083	5,258,014,830	33,117,131	254,216,999	6	334,698,339	0	5,371,613,296
2084	5,371,613,296	34,355,340	231,814,344	1	342,838,472	0	5,516,992,763
2085	5,516,992,763	35,632,064	210,281,459	0	353,017,780	0	5,695,361,148
2086	5,695,361,148	36,898,028	189,701,219	0	365,310,549	0	5,907,868,506
2087	5,907,868,506	38,319,224	170,145,553	0	379,794,543	0	6,155,836,720
2088	6,155,836,720	39,837,097	151,675,601	0	396,551,855	0	6,440,550,071
2089	6,440,550,071	41,301,441	134,341,333	0	415,659,560	0	6,763,169,739
2090	6,763,169,739	42,722,537	118,180,568	0	437,192,253	0	7,124,903,961
2091	7,124,903,961	44,254,866	103,218,603	0	461,232,604	0	7,527,172,828
2092	7,527,172,828	45,952,909	89,467,633	0	487,874,269	0	7,971,532,374
2093	7,971,532,374	47,666,651	76,926,905	0	517,213,616	0	8,459,485,737
2094	8,459,485,737	49,392,275	65,582,607	0	549,348,671	0	8,992,644,076
2095	8,992,644,076	51,042,414	55,407,990	0	584,382,217	0	9,572,660,718
2096	9,572,660,718	52,834,574	46,363,795	0	622,429,936	0	10,201,561,434
2097	10,201,561,434	54,812,838	38,400,258	0	663,626,505	0	10,881,600,519
2098	10,881,600,519	56,735,300	31,459,051	0	708,112,580	0	11,614,989,348
2099	11,614,989,348	58,664,700	25,473,975	0	756,036,025	0	12,404,216,099
2100	12,404,216,099	60,593,826	20,372,306	0	807,560,667	0	13,251,998,287
2101	13,251,998,287	62,739,052	16,076,940	0	862,872,534	0	14,161,532,932
2102	14,161,532,932	64,984,823	12,508,331	0	922,178,278	0	15,136,187,702
2103	15,136,187,702	67,205,457	9,585,765	0	985,695,361	0	16,179,502,755
2104	16,179,502,755	69,450,591	7,228,755	0	1,053,658,054	0	17,295,382,645
2105	17,295,382,645	71,754,789	5,358,706	0	1,126,323,775	0	18,488,102,502
2106	18,488,102,502	74,273,150	3,900,705	0	1,203,977,763	0	19,762,452,710
2107	19,762,452,710	76,886,875	2,785,018	0	1,286,929,824	0	21,123,484,391
2108	21,123,484,391	79,500,589	1,948,143	0	1,375,507,262	0	22,576,544,099
2109	22,576,544,099	82,153,181	1,333,553	0	1,470,060,655	0	24,127,424,382
2110	24,127,424,382	84,976,091	892,198	0	1,570,972,292	0	25,782,480,566
2111	25,782,480,566	87,998,360	582,721	0	1,678,657,521	0	27,548,553,726
2112	27,548,553,726	91,098,043	371,155	0	1,793,558,198	0	29,432,838,812
2113	29,432,838,812	94,269,841	230,282	0	1,916,142,695	0	31,443,021,066
2114	31,443,021,066	97,458,536	139,031	0	2,046,909,462	0	33,587,250,033
2115	33,587,250,033	100,866,271	81,619	0	2,186,395,189	0	35,874,429,875
2116	35,874,429,875	104,502,981	46,576	0	2,335,179,332	0	38,314,065,613
2117	38,314,065,613	108,178,723	25,832	0	2,493,873,900	0	40,916,092,403
2118	40,916,092,403	111,930,657	13,912	0	2,663,126,041	0	43,691,135,188
2119	43,691,135,188	115,772,193	7,271	0	2,843,626,919	0	46,650,527,029
2120	46,650,527,029	119,884,599	3,682	0	3,036,119,052	0	49,806,526,999
2121	49,806,526,999	124,176,130	1,803	0	3,241,396,390	0	53,172,097,716
2122	53,172,097,716	128,528,210	848	0	3,460,297,733	0	56,760,922,810



Discount Rate Development

Present Values of Projected Benefits Ending June 30 for 2024 to 2073

Year	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected Benefit Payments	Present Value of Funded Benefit Payments Using Expected Return Rate of 6.50% (v)	Present Value of Unfunded Benefit Payments Using Municipal Bond Rate of 3.86% (vf)	Present Value of All Benefit Payments Using Single Discount Rate (SDR) of 6.50%
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^(a)-.5	(g)=(e)*vf^(a)-.5	(h)=[(c)/((1+SDR)^(a)-.5)]
2024	\$ 3,843,940,742	\$ 280,830,104	\$ 280,830,104	\$ 0	\$ 272,125,260	\$ 0	\$ 272,125,260
2025	4,154,226,675	297,584,424	297,584,424	0	270,760,798	0	270,760,798
2026	4,334,678,718	310,453,221	310,453,221	0	265,229,698	0	265,229,698
2027	4,558,320,066	326,135,503	326,135,503	0	261,622,114	0	261,622,114
2028	4,791,767,789	342,038,842	342,038,842	0	257,633,416	0	257,633,416
2029	5,020,904,405	358,251,700	358,251,700	0	253,375,966	0	253,375,966
2030	5,255,976,365	374,764,394	374,764,394	0	248,877,635	0	248,877,635
2031	5,481,650,354	391,806,586	391,806,586	0	244,314,742	0	244,314,742
2032	5,711,522,520	409,294,213	409,294,213	0	239,642,553	0	239,642,553
2033	5,929,520,954	427,192,293	427,192,293	0	234,856,257	0	234,856,257
2034	6,149,414,511	445,732,398	445,732,398	0	230,092,954	0	230,092,954
2035	6,354,620,712	464,830,515	464,830,515	0	225,306,718	0	225,306,718
2036	6,558,997,873	484,183,997	484,183,997	0	220,363,841	0	220,363,841
2037	6,746,240,821	503,693,817	503,693,817	0	215,251,861	0	215,251,861
2038	6,930,410,671	523,516,756	523,516,756	0	210,068,664	0	210,068,664
2039	7,096,000,239	535,462,120	535,462,120	0	201,748,276	0	201,748,276
2040	7,264,402,301	555,310,157	555,310,157	0	196,456,810	0	196,456,810
2041	7,419,007,162	575,259,809	575,259,809	0	191,093,492	0	191,093,492
2042	7,567,316,787	594,970,782	594,970,782	0	185,578,600	0	185,578,600
2043	7,701,162,344	614,486,153	614,486,153	0	179,967,776	0	179,967,776
2044	7,827,590,712	633,380,163	633,380,163	0	174,179,684	0	174,179,684
2045	7,939,333,772	651,655,322	651,655,322	0	168,267,941	0	168,267,941
2046	8,043,902,663	669,732,503	669,732,503	0	162,380,996	0	162,380,996
2047	8,134,040,410	687,097,255	687,097,255	0	156,423,656	0	156,423,656
2048	8,216,526,210	703,364,270	703,364,270	0	150,353,974	0	150,353,974
2049	8,285,170,489	717,882,076	717,882,076	0	144,091,417	0	144,091,417
2050	8,347,960,565	730,928,037	730,928,037	0	137,755,839	0	137,755,839
2051	8,400,126,190	742,706,274	742,706,274	0	131,432,533	0	131,432,533
2052	8,448,588,614	752,591,580	752,591,580	0	125,053,409	0	125,053,409
2053	8,489,455,590	760,867,599	760,867,599	0	118,712,284	0	118,712,284
2054	8,530,135,743	767,339,717	767,339,717	0	112,415,097	0	112,415,097
2055	8,567,875,212	771,933,322	771,933,322	0	106,185,971	0	106,185,971
2056	8,610,066,937	774,368,520	774,368,520	0	100,019,674	0	100,019,674
2057	8,653,721,037	774,617,945	774,617,945	0	93,945,438	0	93,945,438
2058	8,707,380,499	772,515,775	772,515,775	0	87,972,288	0	87,972,288
2059	8,505,575,373	767,860,894	767,860,894	0	82,105,353	0	82,105,353
2060	8,293,243,233	760,999,165	760,999,165	0	76,405,302	0	76,405,302
2061	8,072,108,419	751,361,478	751,361,478	0	70,833,489	0	70,833,489
2062	7,844,757,698	739,317,784	739,317,784	0	65,444,214	0	65,444,214
2063	7,613,490,234	725,036,714	725,036,714	0	60,262,964	0	60,262,964
2064	7,381,013,084	708,652,744	708,652,744	0	55,306,269	0	55,306,269
2065	7,149,940,805	690,315,679	690,315,679	0	50,587,011	0	50,587,011
2066	6,922,423,134	670,240,469	670,240,469	0	46,118,197	0	46,118,197
2067	6,700,734,497	648,886,166	648,886,166	0	41,923,794	0	41,923,794
2068	6,486,758,549	626,513,373	626,513,373	0	38,007,806	0	38,007,806
2069	6,282,295,770	603,264,787	603,264,787	0	34,363,771	0	34,363,771
2070	6,089,100,947	579,296,713	579,296,713	0	30,984,486	0	30,984,486
2071	5,908,608,270	554,719,218	554,719,218	0	27,859,085	0	27,859,085
2072	5,742,243,989	529,708,890	529,708,890	0	24,979,359	0	24,979,359
2073	5,591,528,367	504,355,156	504,355,156	0	22,332,168	0	22,332,168



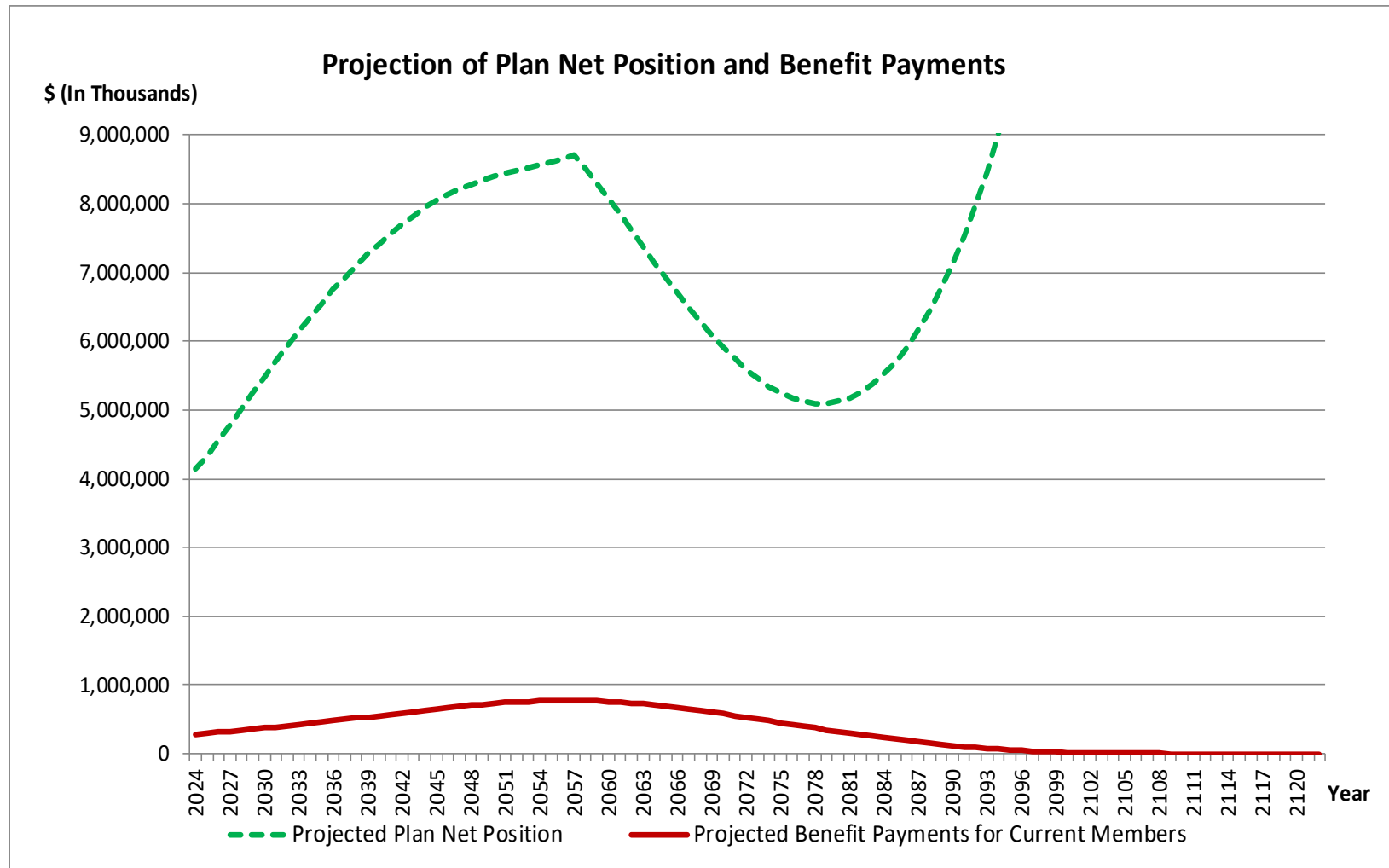
Discount Rate Development

Present Values of Projected Benefits Ending June 30 for 2074 to 2122

Year	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate of 6.50% (v)	Present Value of Unfunded Benefit Payments Using Municipal Bond Rate of 3.86% (vf)	Present Value of All Benefit Payments Using Single Discount Rate (SDR) of 6.50% (h)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^(a)-.5)	(g)=(e)*vf^(a)-.5)	(h)=[(c)/(1+SDR)^(a-.5)]
2074	\$ 5,458,053,519	\$ 478,767,421	\$ 478,767,421	\$ 0	\$ 19,905,331	\$ 0	\$ 19,905,331
2075	5,343,177,533	453,038,733	453,038,733	0	17,686,037	0	17,686,037
2076	5,248,295,582	427,255,990	427,255,990	0	15,661,514	0	15,661,514
2077	5,174,672,067	401,529,690	401,529,690	0	13,820,178	0	13,820,178
2078	5,123,783,465	375,961,113	375,961,113	0	12,150,364	0	12,150,364
2079	5,097,139,239	350,659,142	350,659,142	0	10,640,988	0	10,640,988
2080	5,095,976,799	325,725,327	325,725,327	0	9,281,084	0	9,281,084
2081	5,121,555,066	301,269,761	301,269,761	0	8,060,335	0	8,060,335
2082	5,175,095,385	277,400,306	277,400,306	0	6,968,750	0	6,968,750
2083	5,258,014,830	254,216,999	254,216,999	0	5,996,570	0	5,996,570
2084	5,371,613,296	231,814,344	231,814,344	0	5,134,392	0	5,134,392
2085	5,516,992,763	210,281,459	210,281,459	0	4,373,208	0	4,373,208
2086	5,695,361,148	189,701,219	189,701,219	0	3,704,415	0	3,704,415
2087	5,907,868,506	170,145,553	170,145,553	0	3,119,755	0	3,119,755
2088	6,155,836,720	151,675,601	151,675,601	0	2,611,356	0	2,611,356
2089	6,440,550,071	134,341,333	134,341,333	0	2,171,753	0	2,171,753
2090	6,763,169,739	118,180,568	118,180,568	0	1,793,896	0	1,793,896
2091	7,124,903,961	103,218,603	103,218,603	0	1,471,158	0	1,471,158
2092	7,527,172,828	89,467,633	89,467,633	0	1,197,341	0	1,197,341
2093	7,971,532,374	76,926,905	76,926,905	0	966,675	0	966,675
2094	8,459,485,737	65,582,607	65,582,607	0	773,822	0	773,822
2095	8,992,644,076	55,407,990	55,407,990	0	613,869	0	613,869
2096	9,572,660,718	46,363,795	46,363,795	0	482,317	0	482,317
2097	10,201,561,434	38,400,258	38,400,258	0	375,092	0	375,092
2098	10,881,600,519	31,459,051	31,459,051	0	288,536	0	288,536
2099	11,614,989,348	25,473,975	25,473,975	0	219,382	0	219,382
2100	12,404,216,099	20,372,306	20,372,306	0	164,739	0	164,739
2101	13,251,998,287	16,076,940	16,076,940	0	122,070	0	122,070
2102	14,161,532,932	12,508,331	12,508,331	0	89,177	0	89,177
2103	15,136,187,702	9,585,765	9,585,765	0	64,170	0	64,170
2104	16,179,502,755	7,228,755	7,228,755	0	45,438	0	45,438
2105	17,295,382,645	5,358,706	5,358,706	0	31,628	0	31,628
2106	18,488,102,502	3,900,705	3,900,705	0	21,617	0	21,617
2107	19,762,452,710	2,785,018	2,785,018	0	14,492	0	14,492
2108	21,123,484,391	1,948,143	1,948,143	0	9,519	0	9,519
2109	22,576,544,099	1,333,553	1,333,553	0	6,118	0	6,118
2110	24,127,424,382	892,198	892,198	0	3,843	0	3,843
2111	25,782,480,566	582,721	582,721	0	2,357	0	2,357
2112	27,548,553,726	371,155	371,155	0	1,410	0	1,410
2113	29,432,838,812	230,282	230,282	0	821	0	821
2114	31,443,021,066	139,031	139,031	0	466	0	466
2115	33,587,250,033	81,619	81,619	0	257	0	257
2116	35,874,429,875	46,576	46,576	0	138	0	138
2117	38,314,065,613	25,832	25,832	0	72	0	72
2118	40,916,092,403	13,912	13,912	0	36	0	36
2119	43,691,135,188	7,271	7,271	0	18	0	18
2120	46,650,527,029	3,682	3,682	0	8	0	8
2121	49,806,526,999	1,803	1,803	0	4	0	4
2122	53,172,097,716	848	848	0	2	0	2
					\$ 7,451,117,416	\$ 0	\$ 7,451,117,416



Projection of Plan Net Position and Benefit Payments



SECTION H

GLOSSARY OF TERMS

Glossary of Terms

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

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

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

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

Actuarial Value of Assets (AVA). Smoothed value of assets that recognizes the difference between the expected investment return using the actuarial valuation assumption of 7.00 percent and the actual investment return over a five-year period. Dampens volatility of asset value over time.

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

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

Asset Return. The net investment return for the asset divided by the mean asset value. Example: if \$1.00 is invested and yields \$1.070 after a year, the asset return is 7.00 percent.

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

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

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

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