



INVESTED IN TOMORROW.

PERA Board Meeting
meeting via Zoom
Thursday, October 28, 2021
9:00am

AGENDA

1. Call to Order
2. Pledge of Allegiance
3. Roll Call
4. Approval of Agenda
5. Approval of Consent Agenda
6. Unfinished Business
 - A. Items removed from Consent Agenda if necessary Action Francis Page, Acting Chair
7. New Business
 - A. Acceptance of FY21 Actuarial Valuations Action John Garrett; Cavanaugh Macdonald Consulting
 - B. Chair Appointment of Ad Hoc Committee to look into Board Member Conduct pursuant to Board Policy and Procedures Section 9.00 Informational Francis Page
 - C. CIO Report Informational Kristin Varela, Acting CIO
 - D. Executive Director's Report Informational Greg Trujillo, Executive Director
8. Adjournment

Any person with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, please contact Trish Winter at 505-795-0712 or patriciab.winter@state.nm.us at least one week prior to the meeting, or as soon as possible. Public documents, including the agenda and minutes, can be provided in various accessible formats. Please contact Ms. Winter if a summary or other type of accessible format is needed.



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PERA

Public Employees
Retirement Association
of New Mexico

INVESTED IN TOMORROW.

PERA of New Mexico June 30, 2021 Actuarial Valuations

October 28, 2021

John Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

Bryan Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



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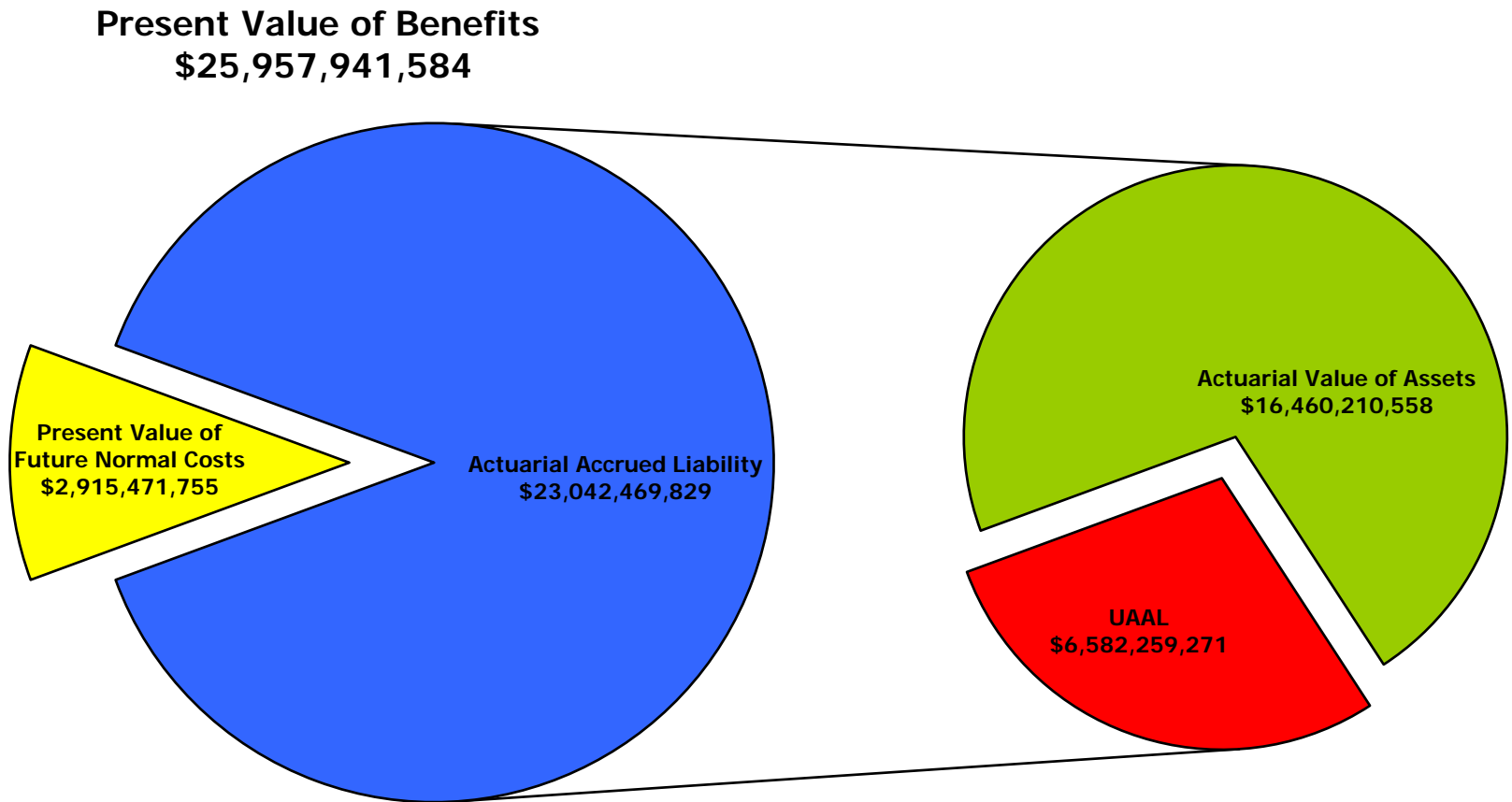
- General Observations
- Summary of Results
- Considerations
- Glossary of Actuarial Terminology

General Observations on Valuations



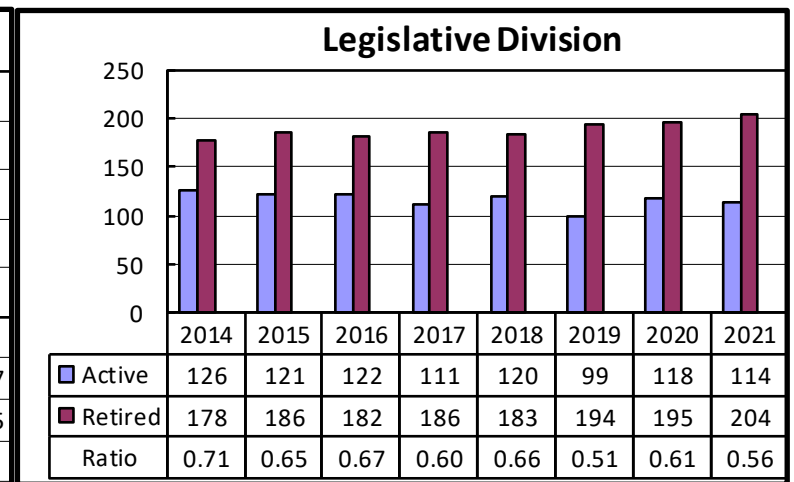
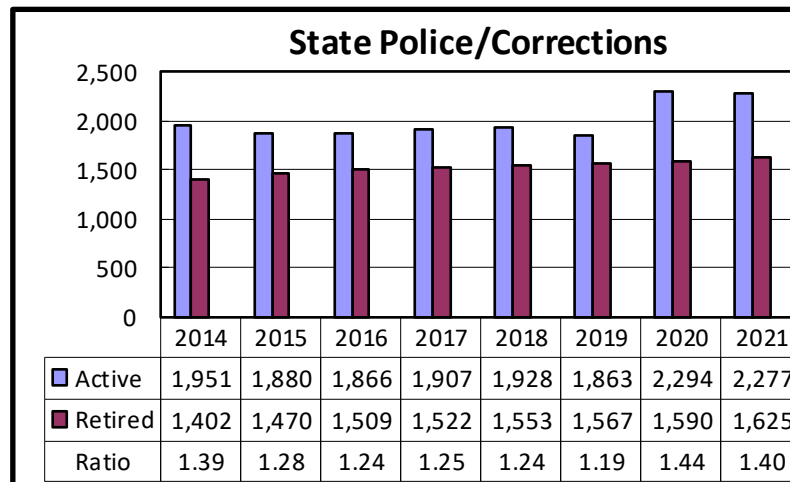
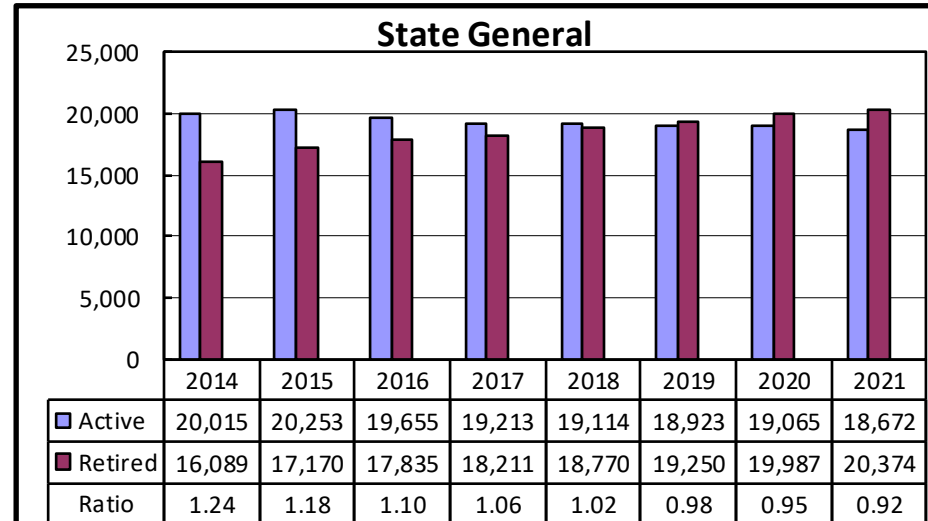
- Actuarial investment gains decreased the PERA UAAL by \$280.7 million due to 9.07% return on smoothed value compared to an expected return of 7.25%. Market Value of Assets exceeds Actuarial Value by \$1.31 billion as more investment gains than losses are being deferred in the asset smoothing process
- Actuarial losses due to non-investment experience increased the UAAL by \$14.0 million primarily due to new entrants and service changes.
- The funded ratio increased from 70.3% to 71.4%.
- Amortization period for PERA's UAAL based upon current statutory rates (does not include future contribution increases per SB72) is 72 years.

PERA Actuarial Results

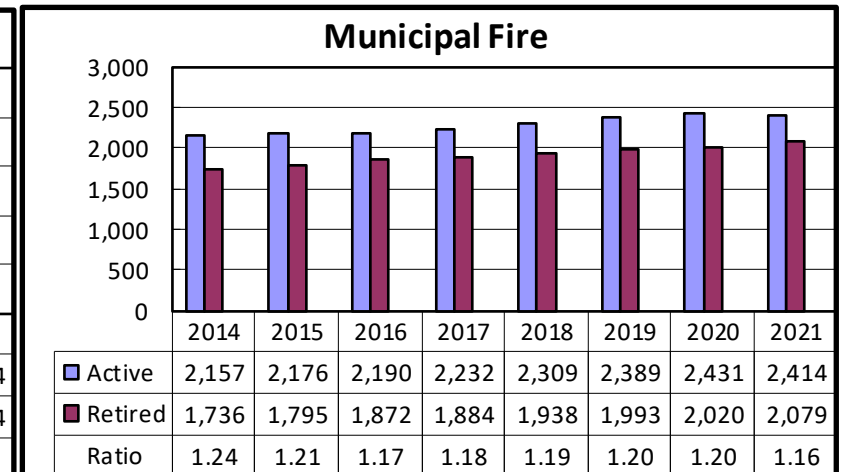
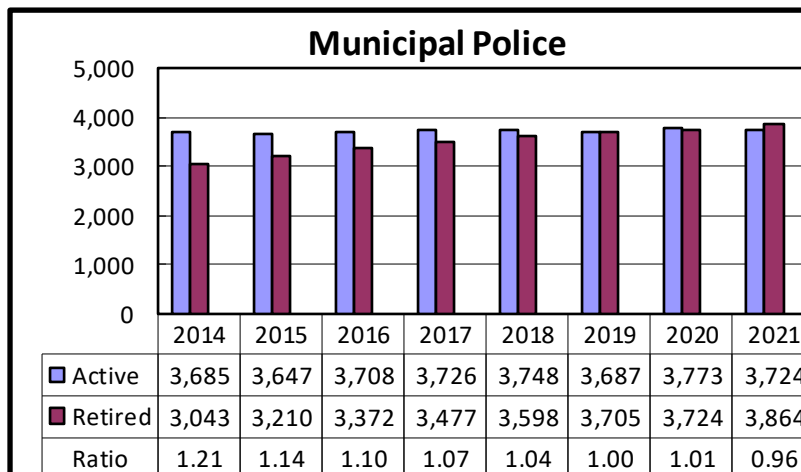
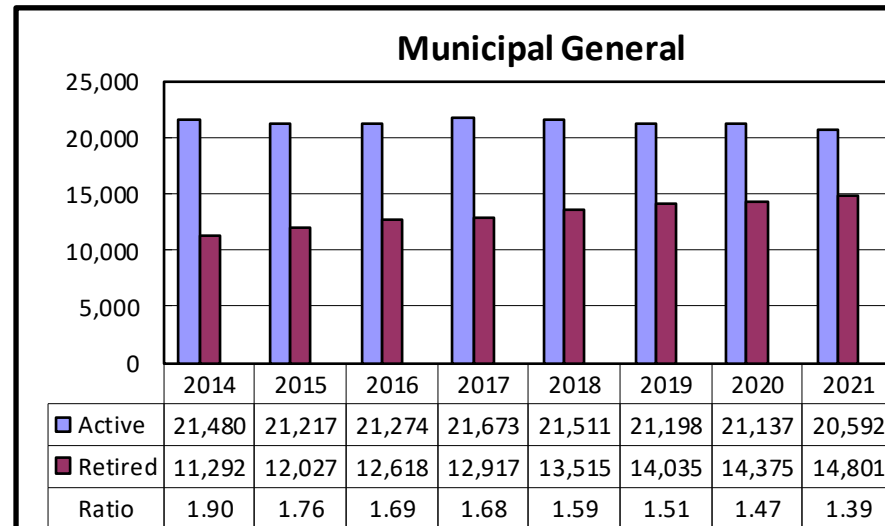


2021 Funded Ratio = Assets/Accrued Liability or 71.4%

Historical Membership Data – State Divisions

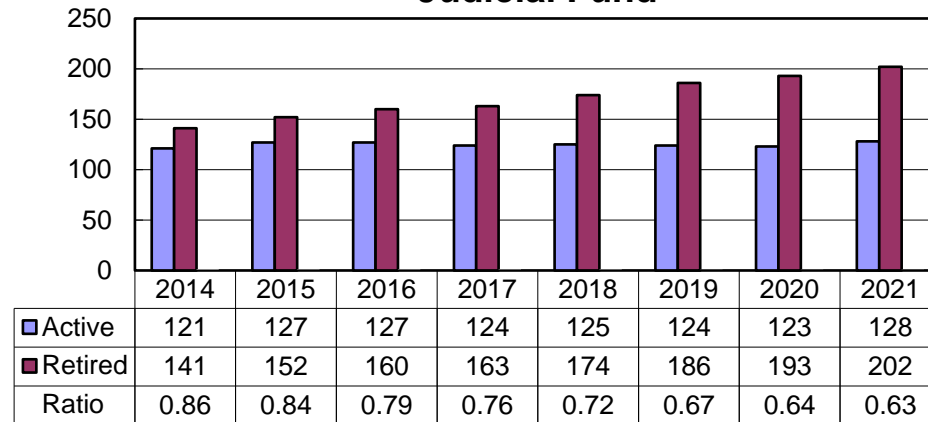


Historical Membership Data – Municipal Divisions

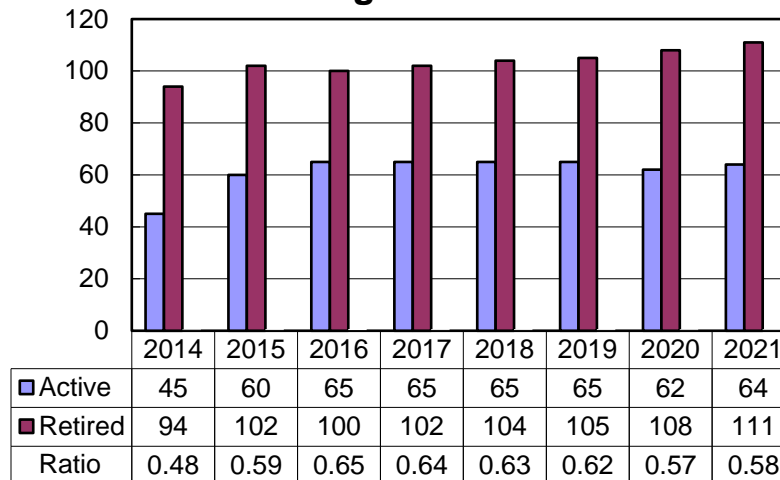


Historical Membership Data – Funds

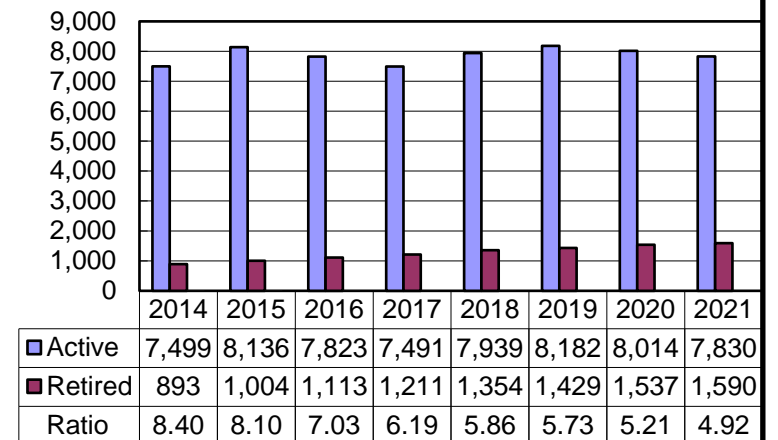
Judicial Fund



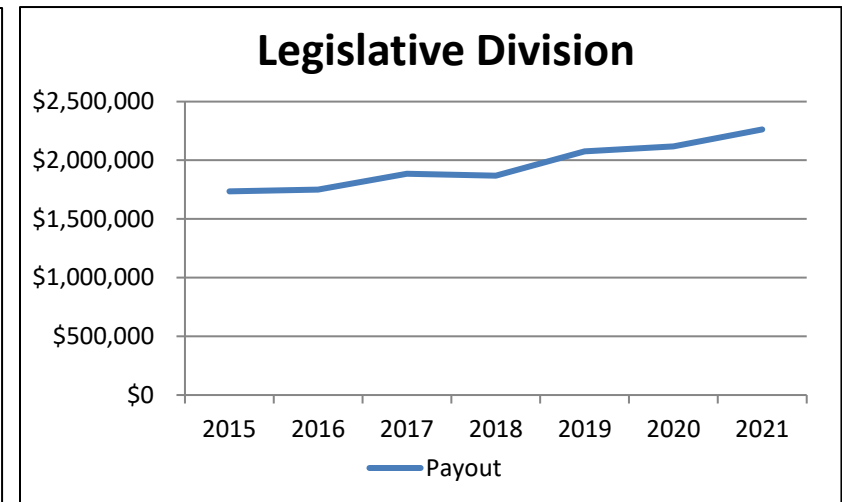
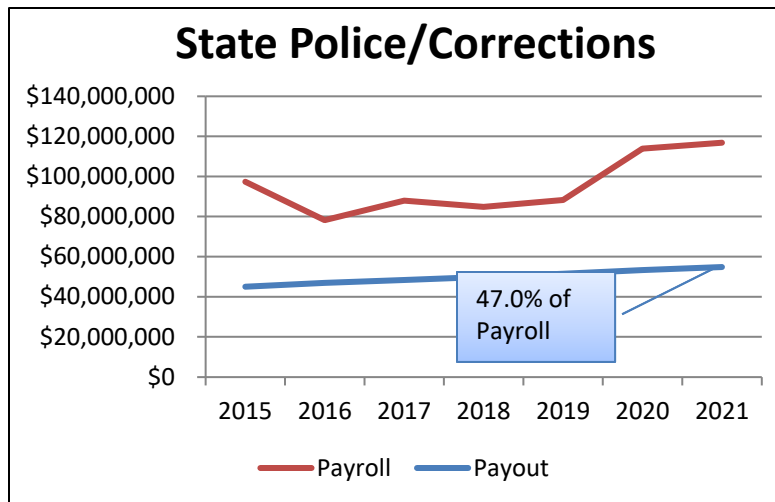
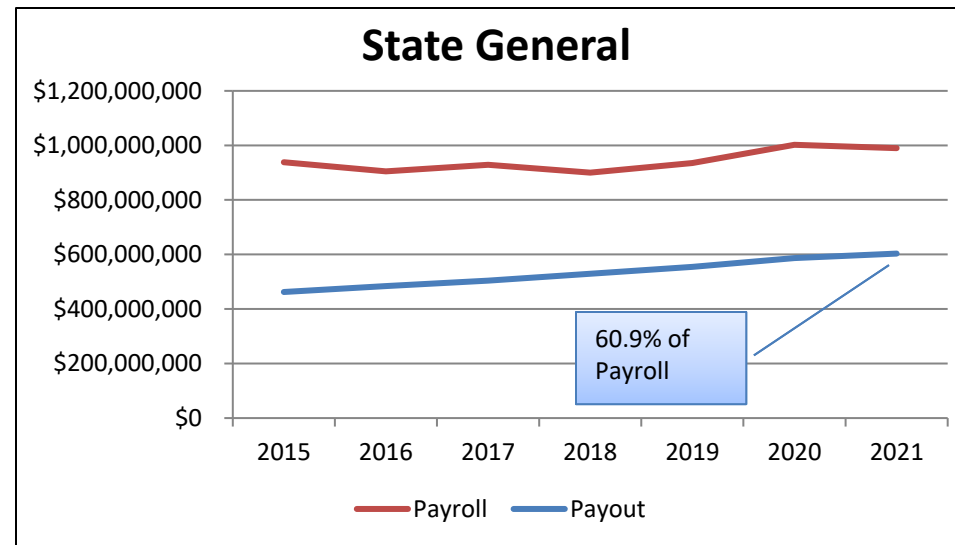
Magistrate Fund



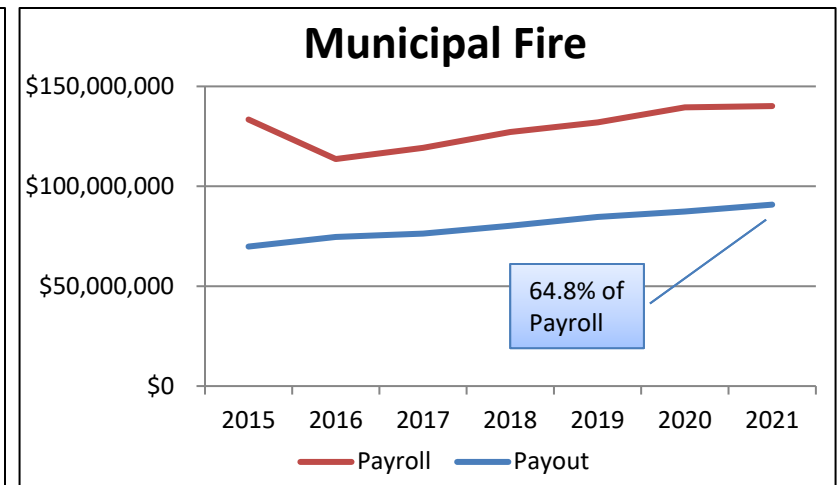
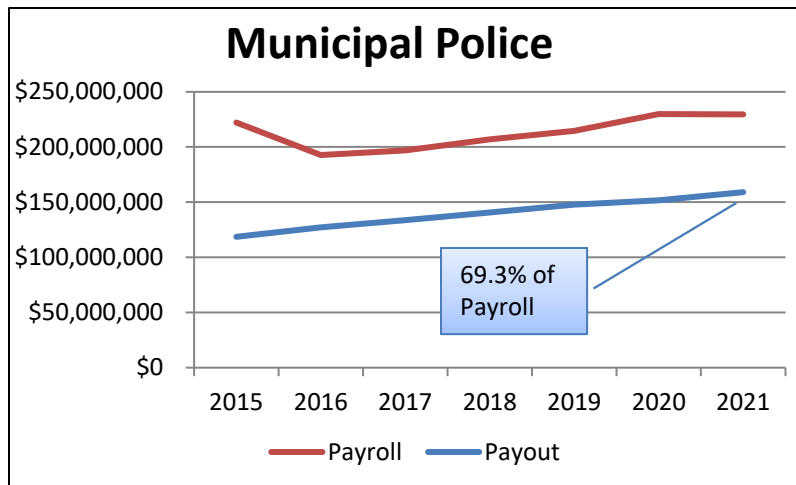
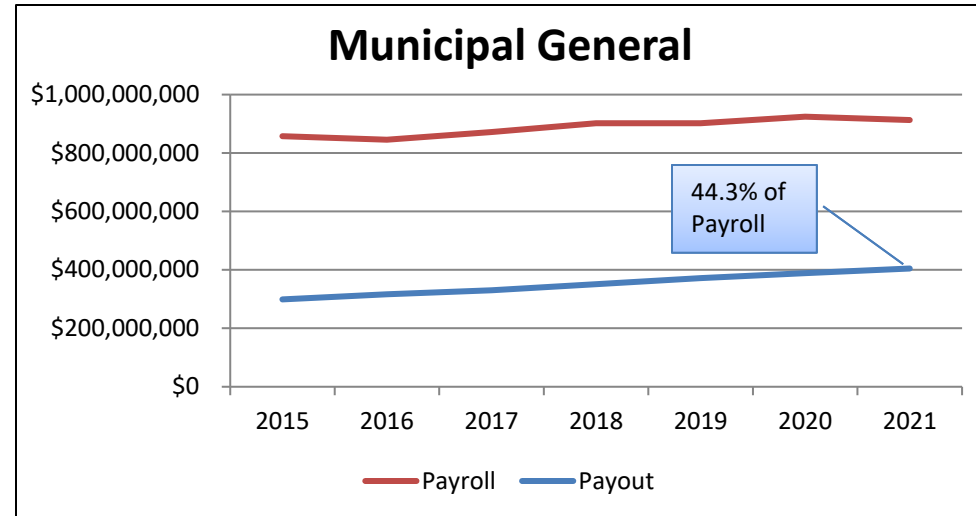
Volunteer Firefighters Fund



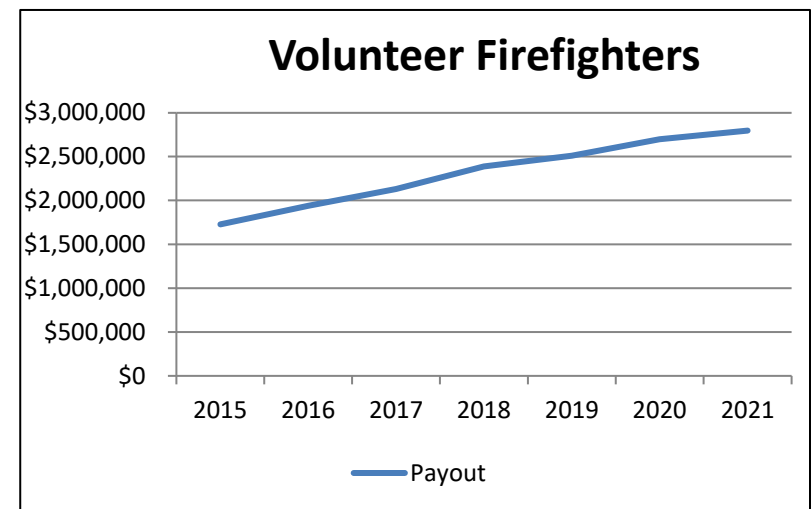
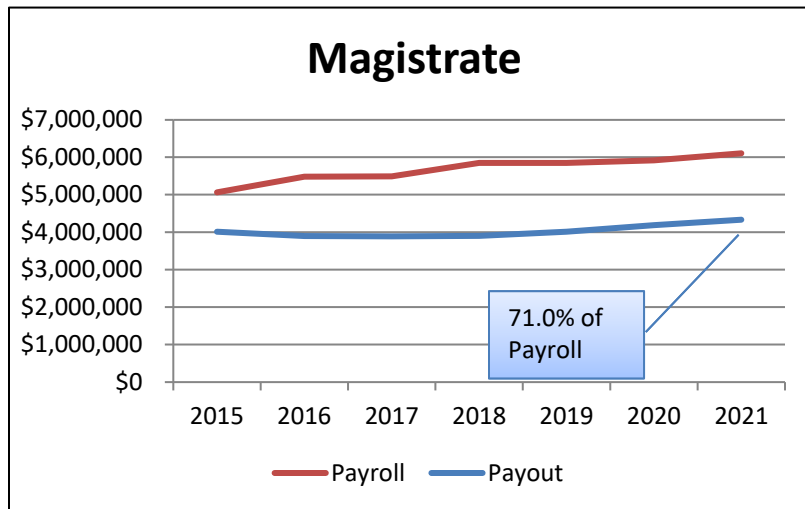
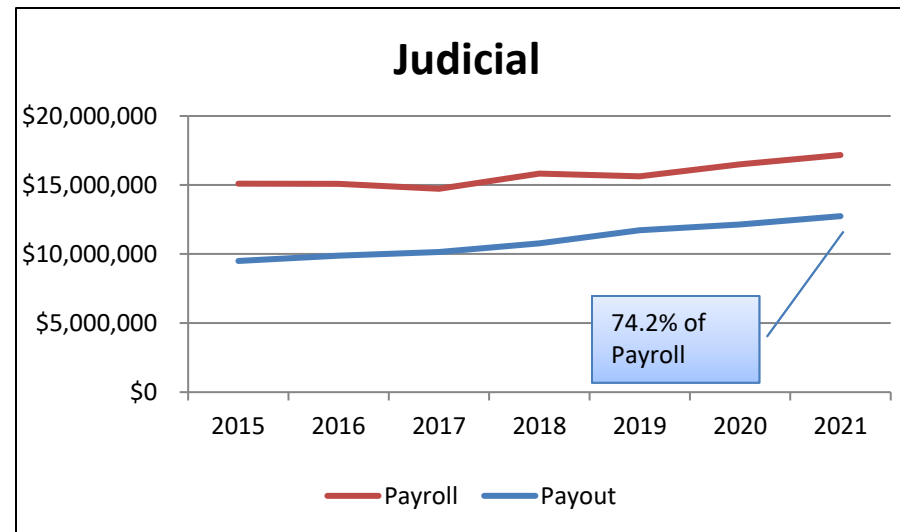
Historical Payroll vs. Payout



Historical Payroll vs. Payout



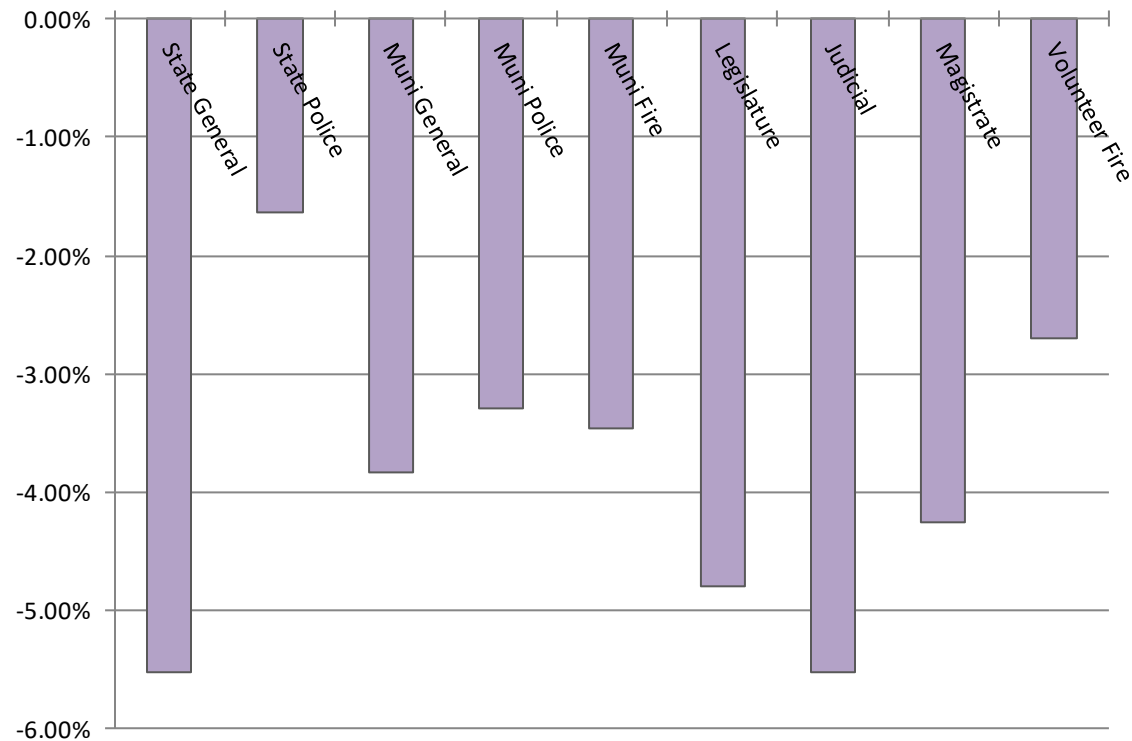
Historical Payroll vs. Payout



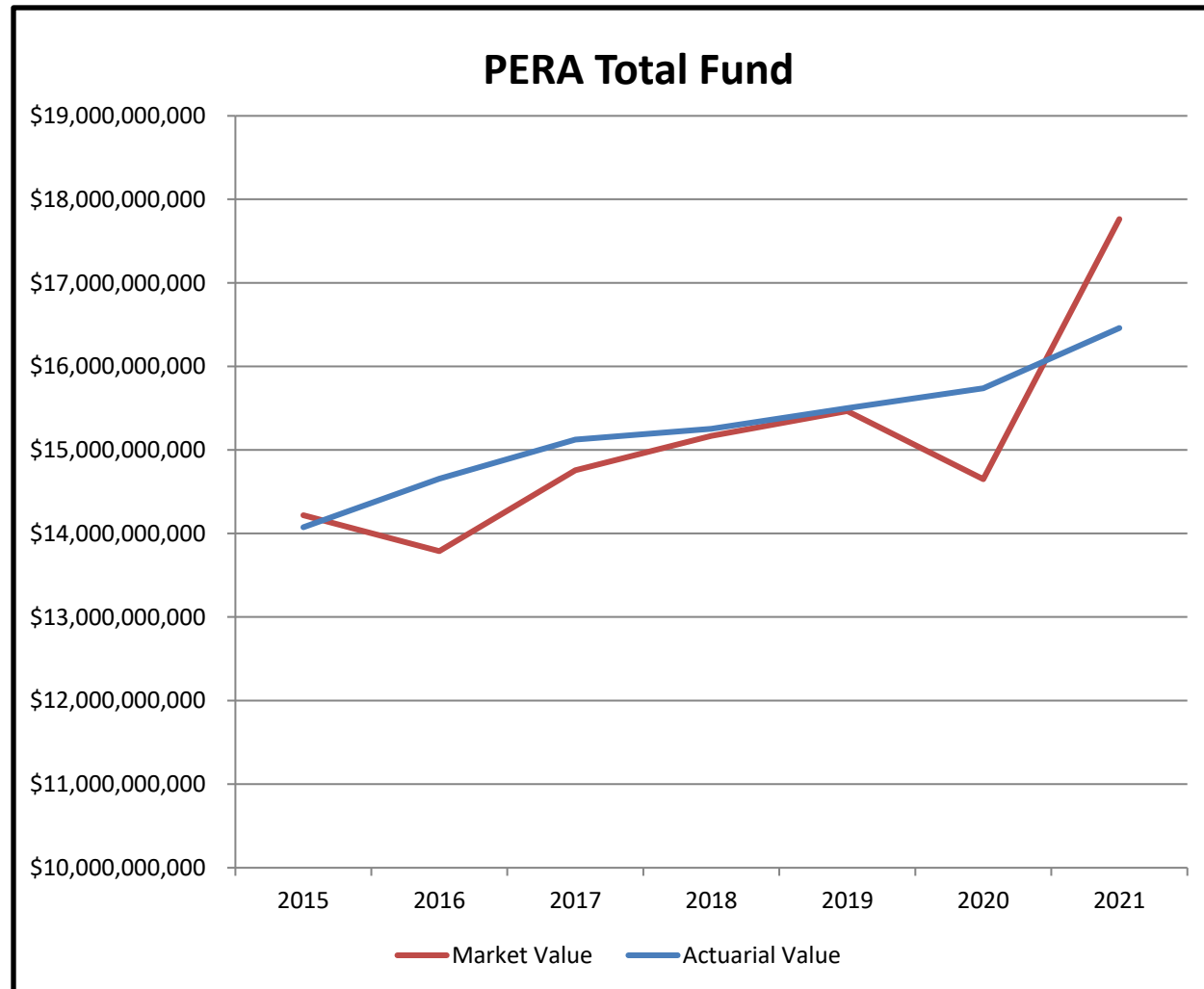
2021 Net External Cash Flow



Net Cash Flow as a % of Average Market Value for FYE 2021



Market and Actuarial Asset Values



Summary of Results – State Divisions



	State Divisions					
	General		Police/Corrections		Legislative	
	2021	2020	2021	2020	2021	2020
Normal Cost	15.08%	15.20%	22.81%	21.62%	\$1,010,430	\$988,578
Administrative Expenses	0.50%	0.50%	0.50%	0.50%	\$40,000	\$40,000
UAAL (\$mil)	\$3,896.9	\$3,882.2	(\$323.3)	(\$284.6)	(\$13.4)	(\$12.3)
Funding Period (Yrs)	Infinite	Infinite	0	0	0	0
Funded Ratio	60.6%	59.9%	129.1%	127.2%	140.9%	138.3%
25 Yr Funding Rate	40.26%	39.97%	5.97%	6.45%	0.00%	0.00%
Statutory Rate	28.16%	27.16%	34.60%	34.55%		
Rate Shortfall/(Margin)	12.10 %	12.81 %	(28.63)%	(28.10)%		

Summary of Results – Municipal Divisions



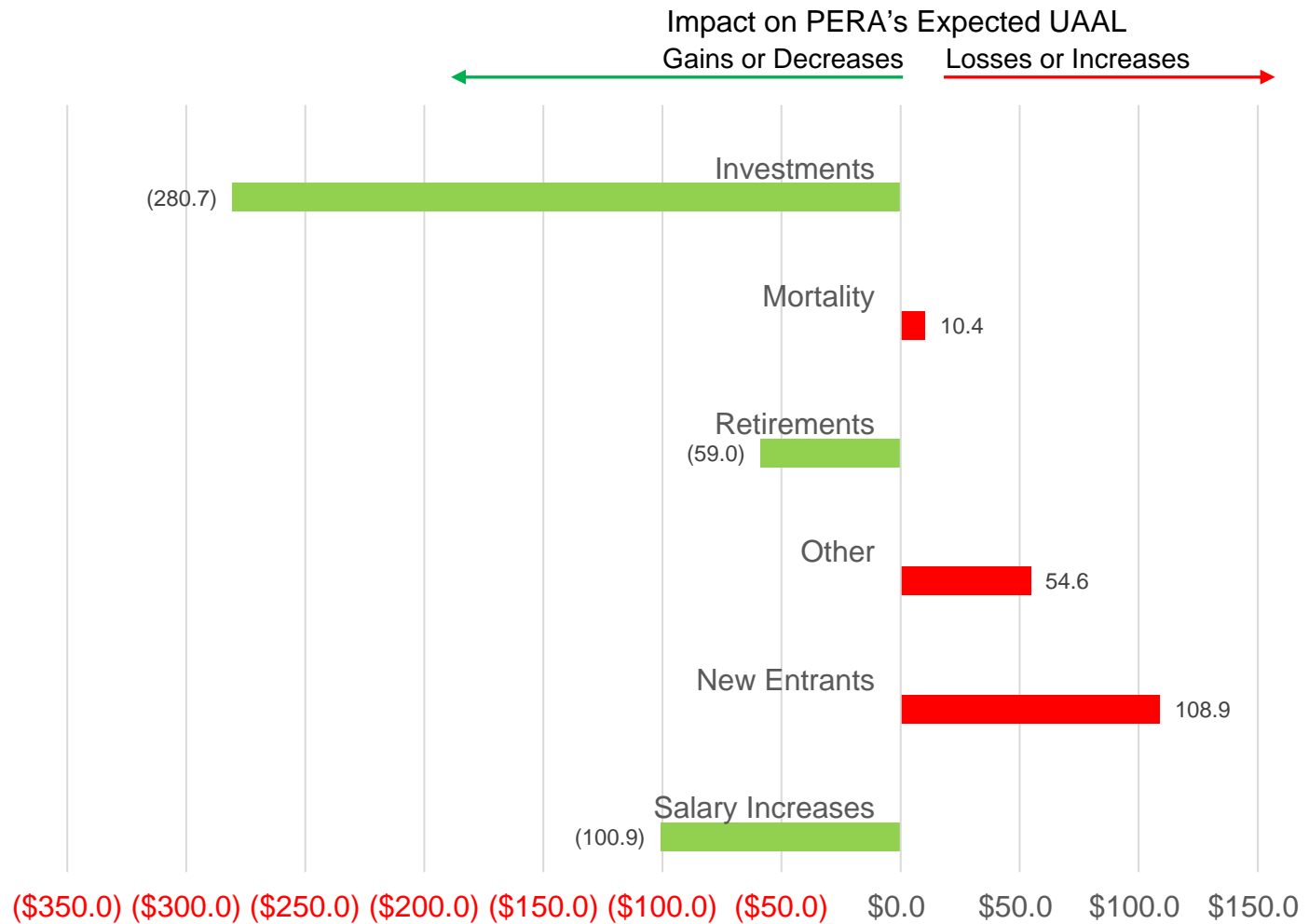
	Municipal Divisions					
	General		Police		Fire	
	2021	2020	2021	2020	2021	2020
Normal Cost	13.69%	13.77%	22.49%	22.70%	25.36%	25.51%
Administrative Expenses	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
UAAL (\$mil)	\$1,601.8	\$1,644.8	\$712.9	\$724.8	\$694.0	\$683.9
Funding Period (Yrs)	34	35	59	70	Infinite	Infinite
Funded Ratio	78.0%	76.7%	76.2%	74.9%	60.9%	60.0%
25 Yr Funding Rate	25.19%	25.42%	42.47%	42.98%	56.89%	56.73%
Statutory Rate	23.54%	23.56%	36.26%	36.21%	39.36%	39.38%
Rate Shortfall/(Margin)	1.65 %	1.86 %	6.21%	6.77%	17.53%	17.35%

Summary of Results – Retirement Funds



	Retirement Funds					
	Judicial		Magistrate		Volunteer Firefighters	
	2021	2020	2021	2020	2021	2020
Normal Cost	20.62%	21.35%	19.65%	18.90%	\$ 1,889,671	\$1,927,238
Administrative Expenses	0.50%	0.50%	0.50%	0.50%	\$60,000	\$60,000
UAAL (\$mil)	\$82.5	\$79.5	\$27.7	\$27.3	(\$28.3)	(\$23.6)
Funding Period (Yrs)	41	44	46	29	0	0
Funded Ratio	53.3%	53.5%	54.1%	53.4%	156.5%	146.8%
25 Yr Funding Rate	44.46%	44.99%	29.51%	28.65%		
Statutory Rate	40.35%	40.21%	28.94%	31.47%		
Rate Shortfall/(Margin)	4.11%	4.78%	0.57%	(2.82)%		

2021 PERA (Gain)/Loss Analysis (Millions)



Additional Considerations



- New 2021 Projections and ALMs will be available in November
- GASB disclosures for plans provided in November and for employers available in January 2022
- Experience Study for PERA will be completed in Spring/Summer 2022

Actuarial Funding Definitions



Present Value of Benefits

- Value of benefits expected to be paid to all current participants (active and retired)
- Includes past service and expected future service

Actuarial Accrued Liability

- Value of benefits expected to be paid to participants based upon past service
- Includes all benefits for members in pay status
- Includes the portion of active members' benefits allocated to service performed up to the valuation

Actuarial Funding Definitions



Normal Cost

- Present value of active members' benefits allocated to the upcoming year of service
- Sometimes called service cost – the additional cost resulting from an additional year of service

Present Value of Future Normal Costs

- Value of all future annual normal costs
- Value of expected future benefit accruals

Actuarial Funding Definitions



Actuarial Cost Method

- A method used to allocate the Present Value of Benefits between past service (Actuarial Accrued Liability) and future service (Present Value of Future Normal Costs)
- Currently PERA uses the Entry Age Normal cost method
- All cost methods maintain the following relationship:



Actuarial Funding Definitions



Actuarial Value of Assets

- Typically utilizes a smoothing method to dampen the effect that market value fluctuations have on funding requirements

Funded Ratio

- The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability
- Commonly used to monitor the progress toward funding objectives

Unfunded Actuarial Accrued Liability (UAAL)

- The difference between the Actuarial Accrued Liability and the Actuarial Value of Assets
- Liability allocated to past service in excess of assets
- Also reflects the cumulative effect of experience gains and losses

Funding Period

- The number of years required to fully amortize the Unfunded Actuarial Accrued Liability

Actuarial Certification



We, John Garrett, ASA, and Bryan K. Hoge, FSA, are consulting actuaries with Cavanaugh Macdonald Consulting, LLC. We are members of the American Academy of Actuaries, Associate/Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. We are available to answer any questions or provide additional information as needed.



John Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary



Bryan K. Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



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PERA

Public Employees
Retirement Association
of New Mexico

INVESTED IN TOMORROW.

**Public Employees Retirement Association (PERA)
of New Mexico
Annual Actuarial Valuation
as of June 30, 2021**





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

October 28, 2021

The Retirement Board
Public Employees Retirement Association
Santa Fe, New Mexico

Members of the Board:

We have conducted the annual actuarial valuation of the Public Employees Retirement Association (PERA) of New Mexico as of June 30, 2021; the results of the valuation are contained in the following report. The annual valuation is used to determine the sufficiency of the statutory contribution rates and, if necessary, the amount required to fund the annual normal cost and amortize the unfunded actuarial accrued liability over a 25-year period. The results of this valuation apply to the fiscal year beginning July 1, 2021 and ending June 30, 2022 (FY 2022). Information contained in our report for plan years prior to June 30, 2010 is based upon valuations performed by the association's prior actuary.

In performing the valuation, we relied on data supplied by the Public Employees Retirement Association (PERA) and performed limited tests on the data for consistency and reasonableness. In determining the Fund's liabilities, future events, such as investment returns, deaths, retirements, etc., are anticipated based upon the set of actuarial assumptions as approved by the Board. Senate Bill 72 established a new COLA structure effective July 1, 2020. Under SB 72, future COLAs beginning at 7/1/2023 are provided through a profit-sharing mechanism using PERA's asset performance. Based on Asset Liability Model (ALM) output, we assume future COLA rates equal the 30-year average COLA rates under the median ALM output, currently 1.60% annually.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: fund experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.



This actuarial valuation was performed to determine the adequacy of statutory contributions to fund the plan. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Appendix D of this report provides a discussion of the risk considerations for PERA in compliance with the guidance provided under Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51),

Annual actuarial valuations are performed for PERA which re-measure the assets and liabilities and compute a new actuarially determined contribution. PERA also has experience studies performed every four to five years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and periodic experience studies are practical ways to monitor and reassess risk.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise in the future of any adjustments that we believe would be appropriate.

This is to certify that the undersigned are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Fund.

Respectfully submitted,

A blue ink signature of John J. Garrett, written in a cursive style.

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

A blue ink signature of Bryan Hoge, written in a cursive style.

Bryan Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



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Section I: Board Summary

The table below summarizes the results of the June 30, 2021 actuarial valuation as compared with the prior year.

Table I-1(a): Comparative Summary of Principal Results (All PERA Divisions)

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 2,388,518,383	\$ 2,409,950,766
Total Valuation Payroll	\$ 2,460,173,934	\$ 2,482,249,289
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 7,628,431,322	\$ 7,542,860,001
Retired Members and Survivors	<u>15,414,038,507</u>	<u>14,846,010,868</u>
Total	\$ 23,042,469,829	\$ 22,388,870,869
Actuarial Value of Assets (AVA)	\$ 16,460,210,558	\$ 15,737,838,938
Funded Ratio	71.4 %	70.3 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ 6,582,259,271	\$ 6,651,031,931
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	15.73 %	15.50 %
Member Contribution Rate	<u>12.41 %</u>	<u>12.20 %</u>
Total	28.14 %	27.70 %
Less Normal Cost:		
Retirement	10.67 %	10.74 %
Termination	3.81 %	3.78 %
Pre-Retirement Survivors	0.85 %	0.85 %
Disability	<u>0.91 %</u>	<u>0.90 %</u>
Total Normal Cost	16.24 %	16.27 %
Less Administrative Expenses	0.50 %	0.50 %
Amount Remaining to Amortize UAAL	11.40 %	10.93 %
Amortization Period	72 years	106 years
Increase in Statutory Rate Necessary to Amortize UAAL over 25 Years	5.87 %	6.37 %



Section I: Board Summary

Summary of Key Findings – PERA

An objective of the Board's funding policy is to maximize the stability in the statutory contribution rates while maintaining the adequacy of funding necessary for the actuarial soundness of each Division in the Fund. The Board has set forth criteria for measuring actuarial soundness and making recommendations for adjustments to the statutory rates of each Division. The funding method for PERA determines the sufficiency of statutorily required contribution rates to fund the sum of the annual normal cost, administrative expenses and an amount to fully amortize the unfunded actuarial accrued liability (UAAL) over no more than 25 years for each Division.

The investment earnings of PERA is allocated on the basis of each Divisions' share of the total PERA Fund balance as of the valuation date. Therefore, each Division shares in the asset experience of the total Fund and will demonstrate similar experience.

- The total PERA Fund experienced investment earnings of approximately \$3.8 billion on the market value of assets. The actuarial value of assets smooths the unexpected portion of the market return over a four-year period. The return on the actuarial value of assets was 9.07% compared to an expected return of 7.25%. As of June 30, 2021, the actuarial value of assets is 92.66% of market value. Table III-4 provides the development of the actuarial value of assets.
- The total actuarial gain due to the investment experience of the total PERA Fund is \$280.7 million. The loss on non-investment related items totaled \$13.9 million. The net gain due to the plan's experience was \$266.8 million.
- The total decrease to the UAAL of PERA is \$68.8 million since the previous valuation and the funded ratio increased from 70.3% to 71.4%.
- Based on the current statutory contribution rates and actuarial assumptions, the UAAL is projected to be fully amortized in 72 years. Under SB 72, there is expected to be further increases to both the employer and employee contributions.

The summary of results and discussion of key findings for each Division begins on the following page.



Section I: Board Summary

Table I-1(b): Comparative Summary of Principal Results (State General Division)

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 989,784,230	\$ 1,002,475,715
Total Valuation Payroll	\$ 1,019,477,757	\$ 1,032,549,986
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 3,087,468,686	\$ 3,082,550,456
Retired Members and Survivors	<u>6,791,048,303</u>	<u>6,607,155,638</u>
Total	\$ 9,878,516,989	\$ 9,689,706,094
Actuarial Value of Assets (AVA)	\$ 5,981,582,669	\$ 5,807,551,328
Funded Ratio	60.6 %	59.9 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ 3,896,934,320	\$ 3,882,154,766
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	18.24 %	17.74 %
Member Contribution Rate	<u>9.92 %</u>	<u>9.42 %</u>
Total	28.16 %	27.16 %
Less Normal Cost:		
Retirement	9.50 %	9.66 %
Termination	3.65 %	3.62 %
Pre-Retirement Survivors	0.84 %	0.84 %
Disability	<u>1.09 %</u>	<u>1.08 %</u>
Total Normal Cost	15.08 %	15.20 %
Less Administrative Expenses	0.50 %	0.50 %
Amount Remaining to Amortize UAAL	12.58 %	11.46 %
Amortization Period	Infinite	Infinite
Increase in Statutory Rate Necessary to Amortize UAAL over 25 Years	12.10 %	12.81 %



Section I: Board Summary

Summary of Key Findings – State General Division

The UAAL increased from \$3.88 billion to \$3.90 billion. The funded ratio increased from 59.9% to 60.6%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The State General Division experienced a net actuarial gain of \$139.1 million during the plan year ended June 30, 2021. The non-investment related gain of \$46.6 million is primarily due to lower than expected salary increases, fewer than expected service retirements, and withdrawals. In addition, the plan experienced a \$92.5 million gain due to investment related experience. Table IV-4 provides the detailed information on the sources and magnitude of actuarial gains and losses.
- The financing period for the unfunded liability based upon the statutory contribution rates is an infinite period for the thirteenth consecutive year.



Section I: Board Summary

Table I-1(c): Comparative Summary of Principal Results (State Police/Corrections Division)

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 116,842,280	\$ 113,842,830
Total Valuation Payroll	\$ 120,347,548	\$ 117,258,115
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 427,473,543	\$ 388,547,885
Retired Members and Survivors	<u>683,557,586</u>	<u>659,603,204</u>
Total	\$1,111,031,129	\$1,048,151,089
Actuarial Value of Assets (AVA)	\$1,434,367,187	\$1,332,772,683
Funded Ratio	129.1 %	127.2 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ (323,336,058)	\$ (284,621,594)
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	25.59 %	25.56 %
Member Contribution Rate	<u>9.01 %</u>	<u>8.99 %</u>
Total	34.60 %	34.55 %
Less Normal Cost:		
Retirement	16.06 %	14.96 %
Termination	4.30 %	4.29 %
Pre-Retirement Survivors	0.71 %	0.68 %
Disability	<u>1.74 %</u>	<u>1.69 %</u>
Total Normal Cost	22.81 %	21.62 %
Less Administrative Expenses	0.50 %	0.50 %
Amount Remaining to Amortize UAAL	11.29 %	12.43 %
Amortization Period	0	0
Increase in Statutory Rate Necessary to Amortize UAAL over 25 Years	N/A	N/A



Section I: Board Summary

Summary of Key Findings – State Police/Corrections Division

As of June 30, 2021, the actuarial value of assets exceeded accrued liabilities by \$323.3 million. As of June 30, 2020, the actuarial value of assets exceeded accrued liabilities by \$284.6 million. This represents a decrease in the UAAL of about \$38.7 million from the previous year. The funded ratio increased from 127.2% to 129.1%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The State Police/Corrections Division experienced a net actuarial gain of \$9.0 million during the plan year ended June 30, 2021. The actuarial gain is comprised of a \$28.5 million investment related gain and an \$19.5 million loss due to non-investment related experience, primarily due to new members. Table IV-4 provides the detailed information on the sources and magnitude of actuarial gains and losses.



Section I: Board Summary

Table I-1(d): Comparative Summary of Principal Results (Municipal General Division)

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 912,307,045	\$ 924,361,625
Total Valuation Payroll	\$ 939,676,256	\$ 952,092,474
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 2,576,082,656	\$ 2,548,387,539
Retired Members and Survivors	<u>4,705,461,568</u>	<u>4,506,418,609</u>
Total	\$ 7,281,544,224	\$ 7,054,806,148
Actuarial Value of Assets (AVA)	\$ 5,679,750,605	\$ 5,410,004,791
Funded Ratio	78.0 %	76.7 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ 1,601,793,619	\$ 1,644,801,357
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	10.01 %	10.03 %
Member Contribution Rate	<u>13.53 %</u>	<u>13.53 %</u>
Total	23.54 %	23.56 %
Less Normal Cost:		
Retirement	7.95 %	8.04 %
Termination	4.05 %	4.04 %
Pre-Retirement Survivors	0.93 %	0.93 %
Disability	<u>0.76 %</u>	<u>0.76 %</u>
Total Normal Cost	13.69 %	13.77 %
Less Administrative Expenses	0.50 %	0.50 %
Amount Remaining to Amortize UAAL	9.35 %	9.29 %
Amortization Period	34 years	35 years
Increase in Statutory Rate Necessary to Amortize UAAL over 25 Years	1.65 %	1.86 %



Section I: Board Summary

Summary of Key Findings – Municipal General Division

The UAAL decreased from \$1.64 billion to \$1.60 billion. The current statutory rate will amortize the UAAL over a 34-year period. The funded ratio increased from 76.7% to 78.0%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The Municipal General Division experienced a net actuarial gain of \$74.1 million during the plan year ended June 30, 2021. The actuarial gain is comprised of a \$99.0 million investment related gain and a \$24.9 million loss due to non-investment related experience.
- The amortization period decreased from 35 years to 34 years.
- Table IV-5 provides the detailed information on the sources and magnitude of actuarial gains and losses.



Section I: Board Summary

Table I-1(e): Comparative Summary of Principal Results (Municipal Police Division)

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 229,410,194	\$ 229,730,475
Total Valuation Payroll	\$ 236,292,500	\$ 236,622,389
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 913,240,294	\$ 912,825,415
Retired Members and Survivors	<u>2,082,684,309</u>	<u>1,973,722,843</u>
Total	\$ 2,995,924,603	\$ 2,886,548,258
Actuarial Value of Assets (AVA)	\$ 2,283,030,585	\$ 2,161,723,690
Funded Ratio	76.2 %	74.9 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ 712,894,018	\$ 724,824,568
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	18.96 %	18.93 %
Member Contribution Rate	<u>17.30 %</u>	<u>17.28 %</u>
Total	36.26 %	36.21 %
Less Normal Cost:		
Retirement	17.51 %	17.75 %
Termination	3.77 %	3.73 %
Pre-Retirement Survivors	0.67 %	0.68 %
Disability	<u>0.54 %</u>	<u>0.54 %</u>
Total Normal Cost	22.49 %	22.70 %
Less Administrative Expenses	0.50 %	0.50 %
Amount Remaining to Amortize UAAL	13.27 %	13.01 %
Amortization Period	59 years	70 years
Increase in Statutory Rate Necessary to Amortize UAAL over 25 Years	6.21 %	6.77 %



Section I: Board Summary

Summary of Key Findings – Municipal Police Division

The UAAL decreased from \$724.8 million to \$712.9 million. The funded ratio increased from 74.9% to 76.2%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The Municipal Police Division experienced a net actuarial gain of \$26.4 million during the plan year ended June 30, 2021. The gain is comprised of a \$41.3 million investment related gain and a \$14.9 million loss due to non-investment related experience. Table IV-5 provides the detailed information on the sources and magnitude of actuarial gains and losses.
- Based upon the statutory contribution rates, the financing period for the unfunded liability is now 59 years.



Section I: Board Summary

Table I-1(f): Comparative Summary of Principal Results (Municipal Fire Division)

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 140,174,634	\$ 139,540,121
Total Valuation Payroll	\$ 144,379,873	\$ 143,726,325
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 624,166,143	\$ 610,548,706
Retired Members and Survivors	<u>1,151,286,741</u>	<u>1,099,110,574</u>
Total	\$ 1,775,452,884	\$ 1,709,659,280
Actuarial Value of Assets (AVA)	\$ 1,081,479,512	\$ 1,025,786,446
Funded Ratio	60.9 %	60.0 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ 693,973,372	\$ 683,872,834
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	21.79 %	21.81 %
Member Contribution Rate	<u>17.57 %</u>	<u>17.57 %</u>
Total	39.36 %	39.38 %
Less Normal Cost:		
Retirement	21.08 %	21.31 %
Termination	2.98 %	2.92 %
Pre-Retirement Survivors	0.75 %	0.75 %
Disability	<u>0.55 %</u>	<u>0.53 %</u>
Total Normal Cost	25.36 %	25.51 %
Less Administrative Expenses	0.50 %	0.50 %
Amount Remaining to Amortize UAAL	13.50 %	13.37 %
Amortization Period	Infinite	Infinite
Increase in Statutory Rate Necessary to Amortize UAAL over 25 Years	17.53 %	17.35 %



Section I: Board Summary

Summary of Key Findings – Municipal Fire Division

The UAAL increased from \$683.9 million to \$694.0 million and the funded ratio increased from 60.0% to 60.9%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The Municipal Fire Division experienced a net actuarial gain of \$18.1 million. The gain is comprised of a \$19.4 million investment related gain and a \$1.3 million loss due to non-investment related experience. Table IV-5 provides the detailed information on the sources and magnitude of actuarial gains and losses.
- The financing period for the unfunded liability based upon the statutory contribution rates is an infinite period for the thirteenth consecutive year.

Section II of the report provides summarized information on the membership data used in the valuation. Section III covers the Fund's assets and Section IV covers the Fund's liabilities. The results of the valuation are provided in Section V and additional disclosure information is in Section VI. The appendices provide additional information on A) the Fund members, B) the actuarial assumptions and methods, and C) the summary of the benefit provisions of the Fund. It is important to note that all information contained in this report for periods prior to June 30, 2010 were produced by a prior actuarial consulting firm.



Section II: PERA Membership Data

Data regarding the membership of the Fund for use in the valuation were furnished by PERA. The following tables summarize the membership data as of June 30, 2021.

Table II-1: Summary of Membership Data as of June 30, 2021

Group	Count					
	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire	Totals
Total Active Members	18,672	2,277	20,592	3,724	2,414	47,679
Inactive Members						
Deferred Vested	3,415	156	2,547	298	149	6,565
Other	6,904	558	9,838	668	267	18,235
Total Inactive Members	10,319	714	12,385	966	416	24,800
Retirees						
Service*	17,290	1,353	12,149	3,412	1,844	36,048
Disabled	740	48	596	68	21	1,473
Beneficiaries	2,344	224	2,056	384	214	5,222
Total Retirees	20,374	1,625	14,801	3,864	2,079	42,743
Totals	49,365	4,616	47,778	8,554	4,909	115,222

* Counts include Co-Payees as follows:

- State General - 488
- State Police - 102
- Municipal General - 338
- Municipal Police - 265
- Municipal Fire - 157

Section II: PERA Membership Data



Table II-2: Summary of Active Membership Valuation Data

Division	Number		Annual Payroll		Average Salary	
	2021	2020	2021	2020	2021	2020
State Division						
General*	18,672	19,065	\$ 989,784,230	\$1,002,475,715	\$53,009	\$52,582
Police	652	579	44,018,271	37,374,302	67,513	64,550
Adult Corrections*	1,487	1,578	67,332,977	71,182,420	45,281	45,109
Juvenile Corrections*	138	137	5,491,032	5,286,108	39,790	38,585
Total State Division	20,949	21,359	\$1,106,626,510	\$1,116,318,545	\$52,825	\$52,265
Municipal Division						
General Coverage Plans						
Plan 1	921	949	\$ 33,354,529	\$ 33,996,613	\$36,216	\$35,824
Plan 2	6,017	6,209	245,259,356	249,740,077	40,761	40,222
Plan 3	12,361	12,598	579,809,810	583,894,391	46,906	46,348
Plan 4	692	715	27,464,130	27,242,753	39,688	38,102
Detention Officers Plan 1	601	666	26,419,220	29,487,791	43,959	44,276
Total General	20,592	21,137	\$ 912,307,045	\$ 924,361,625	\$44,304	\$43,732
Police Coverage Plans						
Plan 1	79	107	\$ 3,895,658	\$ 5,061,524	\$49,312	\$47,304
Plan 2	57	54	2,752,703	2,457,687	48,293	45,513
Plan 3	50	62	2,416,455	3,092,839	48,329	49,885
Plan 4	148	117	7,573,558	5,538,508	51,173	47,338
Plan 5	3,390	3,433	212,771,820	213,579,917	62,765	62,214
Total Police	3,724	3,773	\$ 229,410,194	\$ 229,730,475	\$61,603	\$60,888
Fire Coverage Plans						
Plan 1	23	19	\$ 1,192,011	\$ 978,757	\$51,827	\$51,514
Plan 2	17	16	809,562	748,303	47,621	46,769
Plan 3	1	7	37,440	297,536	37,440	42,505
Plan 4	12	6	621,567	254,135	51,797	42,356
Plan 5	2,361	2,383	137,514,054	137,261,390	58,244	57,600
Total Fire	2,414	2,431	\$ 140,174,634	\$ 139,540,121	\$58,067	\$57,400
Total Municipal Division	26,730	27,341	\$1,281,891,873	\$1,293,632,221	\$47,957	\$47,315
Total PERA	47,679	48,700	\$2,388,518,383	\$2,409,950,766	\$50,096	\$49,486

*Reflects members transferring from State General and State Juvenile Corrections to State Adult Corrections under the provisions of Senate Bill 72

Section II: PERA Membership Data



Table II-3: Summary of Deferred Vested Members as of June 30, 2021

Division	Number	Average Age	Average Service	Average Annual Benefit
State Division				
General	3,415	51.38	9.31	\$ 13,621
Police/Hazardous Duty	<u>156</u>	46.32	9.98	12,155
Total State Division	3,571	51.15	9.33	\$ 13,557
Municipal Division				
General	2,547	51.09	9.54	\$ 11,548
Police	298	42.94	8.93	15,717
Fire	<u>149</u>	44.29	8.37	15,683
Total Municipal Division	2,994	49.94	9.42	\$ 12,169
PERA Totals	6,565	50.60	9.37	\$ 12,924

Section II: PERA Membership Data



Table II-4: Summary of Retirees and Survivors as of June 30, 2021

Type of Retirement	Division					
	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire	Total
Service						
Number	17,290	1,353	12,149	3,412	1,844	36,048
Total Annual Benefits	\$ 542,196,116	\$ 48,110,915	\$ 354,744,244	\$ 145,533,059	\$ 82,982,419	\$ 1,173,566,753
Avg Annual Benefit	\$ 31,359	\$ 35,559	\$ 29,199	\$ 42,653	\$ 45,001	\$ 32,556
Avg Age	70.29	64.36	69.42	61.25	62.81	68.54
Disability						
Number	740	48	596	68	21	1,473
Total Annual Benefits	\$ 13,610,255	\$ 927,170	\$ 10,741,579	\$ 1,992,014	\$ 570,138	\$ 27,841,156
Avg Annual Benefit	\$ 18,392	\$ 19,316	\$ 18,023	\$ 29,294	\$ 27,149	\$ 18,901
Avg Age	60.34	60.20	59.13	52.26	50.81	59.34
Survivors						
Number	2,344	224	2,056	384	214	5,222
Total Annual Benefits	\$ 47,350,528	\$ 5,844,783	\$ 39,102,079	\$ 11,530,072	\$ 7,307,706	\$ 111,135,168
Avg Annual Benefit	\$ 20,201	\$ 26,093	\$ 19,019	\$ 30,026	\$ 34,148	\$ 21,282
Avg Age	70.62	68.67	69.95	67.40	72.13	70.09
Total						
Number	20,374	1,625	14,801	3,864	2,079	42,743
Total Annual Benefits	\$ 603,156,899	\$ 54,882,868	\$ 404,587,902	\$ 159,055,145	\$ 90,860,263	\$ 1,312,543,077
Avg Annual Benefit	\$ 29,604	\$ 33,774	\$ 27,335	\$ 41,163	\$ 43,704	\$ 30,708
Avg Age	69.96	64.83	69.08	61.71	63.65	68.41



Section II: PERA Membership Data

Table II-5: Summary of Historical Active Membership Valuation Data by Division

Valuation Date	Number	Annual Payroll	Average Annual Pay	% Change In Average Pay
State General Division				
6/30/2021	18,672	\$ 989,784,230	\$ 53,009	0.81 %
6/30/2020	19,065	1,002,475,715	52,582	6.36 %
6/30/2019	18,923	935,478,450	49,436	4.93 %
6/30/2018	19,114	900,513,193	47,113	(2.55)%
6/30/2017	19,213	928,864,843	48,346	5.02 %
State Police/Corrections Division				
6/30/2021	2,277	\$ 116,842,280	\$ 51,314	3.40 %
6/30/2020	2,294	113,842,830	49,626	4.80 %
6/30/2019	1,863	88,220,403	47,354	7.60 %
6/30/2018	1,928	84,845,998	44,007	(4.57)%
6/30/2017	1,907	87,941,130	46,115	10.00 %
Municipal General Division				
6/30/2021	20,592	\$ 912,307,045	\$ 44,304	1.31 %
6/30/2020	21,137	924,361,625	43,732	2.82 %
6/30/2019	21,198	901,598,748	42,532	1.47 %
6/30/2018	21,511	901,617,649	41,914	4.22 %
6/30/2017	21,673	871,633,574	40,217	1.16 %
Municipal Police Division				
6/30/2021	3,724	\$ 229,410,194	\$ 61,603	1.17 %
6/30/2020	3,773	229,730,475	60,888	4.66 %
6/30/2019	3,687	214,508,600	58,180	5.39 %
6/30/2018	3,748	206,898,932	55,202	4.53 %
6/30/2017	3,726	196,767,735	52,809	1.63 %
Municipal Fire Division				
6/30/2021	2,414	\$ 140,174,634	\$ 58,067	1.16 %
6/30/2020	2,431	139,540,121	57,400	3.91 %
6/30/2019	2,389	131,964,078	55,238	0.27 %
6/30/2018	2,309	127,203,502	55,090	3.15 %
6/30/2017	2,232	119,207,608	53,408	2.86 %

Table II-6: Summary of Historical Active Membership Valuation Data for All Divisions

Valuation Date	Number	Annual Payroll	Average Annual Pay	% Change In Average Pay
6/30/2021	47,679	\$ 2,388,518,383	\$ 50,096	1.23 %
6/30/2020	48,700	2,409,950,766	49,486	4.69 %
6/30/2019	48,060	2,271,770,279	47,269	3.45 %
6/30/2018	48,610	2,221,079,274	45,692	1.05 %
6/30/2017	48,751	2,204,414,890	45,218	3.12 %



Section III: PERA Assets

The following tables provide a summary of PERA's market value and actuarial value of assets (excluding Legislative Division) as of June 30, 2021.

Table III-1: Market Value Summary as of June 30, 2021

Division	June 30, 2021	June 30, 2020
State General	\$ 6,455,414,883	\$ 5,406,336,447
State Police/Corrections	1,547,990,858	1,240,698,037
Municipal General	6,129,673,134	5,036,254,426
Municipal Police	2,463,881,289	2,012,380,935
Municipal Fire	1,167,149,118	954,919,955
Total Market Value of Assets	\$ 17,764,109,282	\$ 14,650,589,800

Table III-2: Actuarial Value Summary as of June 30, 2021

Division	June 30, 2021	June 30, 2020
State General	\$ 5,981,582,669	\$ 5,807,551,328
State Police/Corrections	1,434,367,187	1,332,772,683
Municipal General	5,679,750,605	5,410,004,791
Municipal Police	2,283,030,585	2,161,723,690
Municipal Fire	1,081,479,512	1,025,786,446
Total Actuarial Value of Assets	\$ 16,460,210,558	\$ 15,737,838,938



Section III: PERA Assets

The following tables provide information on PERA's assets at market value and cash flow.

Table III-3: Market Value Reconciliation (Total PERA with Legislature)

	June 30, 2021	June 30, 2020
Beginning of Year Market Value	\$ 14,691,984,206	\$ 15,507,545,549
Audit Adjustment	-	-
Revised Beginning of Year Market Value	\$ 14,691,984,206	\$ 15,507,545,549
Revenues:		
a. Member Contributions	\$ 298,572,637	\$ 289,776,597
b. Employer Contributions	379,184,992	367,524,721
c. Appropriations	-	55,900,000
d. Purchases of Service	10,979,261	7,376,041
e. Investment Income		
1. Interest, dividends, etc.	404,664,374	295,948,452
2. Realized/Unrealized gains (losses)	3,478,447,098	(457,794,648)
3. Security lending and other gains (losses)	2,016,817	3,072,416
f. Other Income	1,990,689	1,645,633
g. Settlement Award	-	-
h. Total Revenues	\$ 4,575,855,868	\$ 563,449,212
Expenditures :		
a. Benefit Payments	\$ 1,314,819,963	\$ 1,255,018,086
b. Refunds of Member Contributions	40,353,832	44,903,265
c. Investment Expenses	85,987,601	64,770,855
d. Administrative Expenses	12,730,398	14,318,349
e. Total Expenditures	\$ 1,453,891,794	\$ 1,379,010,555
End of Year Market Value	\$ 17,813,948,280	\$ 14,691,984,206

The market value rate of return for the plan year is 26.47% on both an adjusted basis and an unadjusted basis. This return is based on a simplified dollar-weighted basis which may not match more precise time-weighted return calculations. PERA's cash flow is (4.17)% as a percentage of average market value. A mature system such as PERA is expected to exhibit negative net cash flow as the number of members receiving benefit payments becomes a larger portion of total membership. There are 1.12 contributing active members for each member receiving a benefit as of June 30, 2021. We expect this measure to decline over future years and result in an increase in the percentage of negative cash flow.

Section III: PERA Assets



The actuarial value of assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The actuarial value of assets has been calculated by spreading the recognition of excess investment income over four years. The amount of excess investment income in each year is the difference between expected actuarial value investment income and actual market value investment income. Table III-4 provides the calculation of the amount of the current year excess investment income to be phased-in as well as the amount of deferred investment income from the prior years.

**Table III-4: Development of Actuarial Value of Assets as of June 30, 2021
(Total PERA with Legislative Division)**

A. Actuarial Value Beginning of Year	\$	15,782,305,304
B. Market Value End of Year		17,813,948,280
C. Revised Market Value Beginning of Year		14,691,984,206
D. Cash Flow		
D1. Contributions & Appropriations	\$	677,757,629
D2. Service Purchases		10,979,261
D3. Benefit Payments and Refunds		(1,355,173,795)
D4. Administrative Expenses		(12,730,398)
D5. Other		1,990,689
D6. Net	\$	(677,176,614)
E. Investment Income		
E1. Market Total (B - C - D6)	\$	3,799,140,688
E2. Assumed Rate		7.25%
E3. Amount for Immediate Recognition		1,119,669,482
E4. Amount for Phased-In Recognition		2,679,471,206
F. Phased-In Recognition of Investment Income		
F1. Current Year: 0.25 *E4	\$	669,867,802
F2. First Prior Year (2019/2020)	$\$(1,328,985,588) \times 25\%$	(332,246,397)
F3. Second Prior Year (2018/2019)	$(150,214,662) \times 25\%$	(37,553,666)
F4. Third Prior Year (2017/2018)	$(73,898,297) \times 25\%$	(18,474,574)
F5. Total Recognized Investment Gain	\$	281,593,165
G. Audit Adjustment	\$	-
H. Actuarial Value End of Year (A + D6 + E3 + F5 + G)		\$16,506,391,337
I. Difference Between Market & Actuarial Values	\$	1,307,556,943
J. Rate of Return on Actuarial Value		9.07 %
K. Actuarial Value as a Percentage of Market Value		92.66 %

Table III-5: Allocation of Actuarial Value by Division as of June 30, 2021

	State Division		PERA Totals w/o Legislative
	General	Police	
Member Contribution Fund	\$ 963,306,737	\$ 75,673,068	\$ 2,850,634,376
Employer Contribution Fund	1,809,665,559	419,957,755	4,387,247,778
Retirement Reserve Fund	3,682,442,587	1,052,360,035	10,526,227,128
Total Fund Balances	\$ 6,455,414,883	\$ 1,547,990,858	\$ 17,764,109,282
Approximate % of Total Fund Balance*	36.34%	8.71%	100%
Actuarial Value Adjustment*	(473,832,214)	(113,623,671)	(1,303,898,724)
Total Actuarial Value of Assets	\$ 5,981,582,669	\$ 1,434,367,187	\$ 16,460,210,558

	Municipal Division			PERA Totals w/o Legislative
	General	Police	Fire	
Member Contribution Fund	\$ 1,232,683,304	\$ 340,676,470	\$ 238,294,797	\$ 2,850,634,376
Employer Contribution Fund	1,335,590,933	575,939,730	246,093,801	4,387,247,778
Retirement Reserve Fund	3,561,398,897	1,547,265,089	682,760,520	10,526,227,128
Total Fund Balances	\$ 6,129,673,134	\$ 2,463,881,289	\$ 1,167,149,118	\$ 17,764,109,282
Approximate % of Total Fund Balance*	34.51%	13.87%	6.57%	100.00%
Actuarial Value Adjustment*	(449,922,529)	(180,850,704)	(85,669,606)	(1,303,898,724)
Total Actuarial Value of Assets	\$ 5,679,750,605	\$ 2,283,030,585	\$ 1,081,479,512	\$ 16,460,210,558

* The actuarial value adjustment is the difference between the actuarial value of assets derived in Table III-4 and the total fund balance at market value. It was allocated to each group in proportion to the Total PERA Fund Balance. Please note that the Legislature Division accounted for approximately 0.28% of the Total PERA Fund Balance and is detailed in a separate report.



Section III: PERA Assets

The actuarial valuation assumes the rate of investment return on the assets of the Plan is 7.25% annually. This assumption is based upon the reasonable long-term expected return on the assets. In each year, the Fund will experience actuarial gains and losses due to the actual investment return of the assets. Table III-6 provides the calculation of the gain or loss due to the investment experience on the actuarial value of assets for the year ended June 30, 2021.

Table III-6: Actuarial Investment Gain (Loss) for the Year Ending June 30, 2021
(Dollar Amounts in Millions)

	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire	Total
1. Beginning of Year Actuarial Value of Assets (AVA)	\$ 5,807.6	\$ 1,332.8	\$ 5,410.0	\$ 2,161.7	\$ 1,025.8	\$ 15,737.9
2. Employee and Employer Contributions	283.9	35.0	219.9	91.9	58.0	688.7
3. Benefit Payments	(607.7)	(56.8)	(430.0)	(164.4)	(94.0)	(1,352.9)
4. Administrative Expenses	(4.6)	(1.1)	(4.4)	(1.8)	(0.8)	(12.7)
5. Other	0.7	0.2	0.7	0.3	0.1	2.0
6. Interest [$1 \times 7.25\% + (2 + 3 + 4 + 5) \times 7.25\% \times 0.5$]	409.2	95.8	384.5	154.0	73.0	1,116.5
7. Expected End of Year AVA	\$ 5,889.1	\$ 1,405.9	\$ 5,580.7	\$ 2,241.7	\$ 1,062.1	\$ 16,179.5
8. Actual End of Year AVA	5,981.6	1,434.4	5,679.7	2,283.0	1,081.5	16,460.2
9. Actuarial Investment Gain (Loss) (8 - 7)	\$ 92.5	\$ 28.5	\$ 99.0	\$ 41.3	\$ 19.4	\$ 280.7

Statutory Reserve Transfers

Each year following receipt of the report of the annual actuarial valuation, the excess, if any, of the actuarial present value of pensions and refunds being paid or likely to be paid to members and survivors over the balance in the retirement reserve fund (RRF) shall be transferred to the retirement reserve fund from the employers accumulation fund (EAF). Table III-7 shows the necessary transfer amounts.

Table III-7: Statutory Reserve Transfers as of June 30, 2021

Division	Reported Fund Balances	Actuarial Present Value of Pensions Being Paid	Transfer
State General			
Members Contribution Fund	\$ 963,306,737		
Employers Accumulation Fund	1,809,665,559		\$ (3,108,605,716)
Retirement Reserve Fund	3,682,442,587	\$ 6,791,048,303	3,108,605,716
State Police/Corrections			
Members Contribution Fund	75,673,068		
Employers Accumulation Fund	419,957,755		-
Retirement Reserve Fund	1,052,360,035	683,557,586	-
Municipal General			
Members Contribution Fund	1,232,683,304		
Employers Accumulation Fund	1,335,590,933		(1,144,062,671)
Retirement Reserve Fund	3,561,398,897	4,705,461,568	1,144,062,671
Municipal Police			
Members Contribution Fund	340,676,470		
Employers Accumulation Fund	575,939,730		(535,419,220)
Retirement Reserve Fund	1,547,265,089	2,082,684,309	535,419,220
Municipal Fire			
Members Contribution Fund	238,294,797		
Employers Accumulation Fund	246,093,801		(468,526,221)
Retirement Reserve Fund	682,760,520	1,151,286,741	468,526,221
Total End of Year Market Value	\$ 17,764,109,282		



Section IV: PERA Liabilities

The total actuarial present value of benefits is the value as of the valuation date of all future benefits expected to be paid to current members of the Fund. An actuarial cost method allocates each individual's present value of benefits to past and future years of service. The actuarial accrued liability includes the portion of the active member present value of benefits allocated to past service as well as the entire present value of benefits for retirees, beneficiaries and inactive members. The portion of the actuarial present value allocated to the future service of active members is called the present value of future normal costs. Table IV-1 presents the calculation and allocation of the actuarial present value of benefits.

Table IV-1: Calculation and Allocation of the Actuarial Present Value as of June 30, 2021

	Actuarial Accrued Liability	Present Value of Future Normal Cost	Total Actuarial Present Value
Active Members			
Service Retirement	\$ 6,451,636,877	\$ 1,897,378,605	\$ 8,349,015,482
Termination Benefits	310,379,671	710,955,953	1,021,335,624
Survivor Benefits	157,939,758	143,849,957	301,789,715
Disability Retirement	102,382,759	163,287,240	265,669,999
Total for Active Members	\$ 7,022,339,065	\$ 2,915,471,755	\$ 9,937,810,820
Inactive Members	\$ 606,092,257		\$ 606,092,257
Retirees and Beneficiaries			
Service Retirements	\$ 13,915,504,373		\$ 13,915,504,373
Beneficiaries	1,084,318,564		1,084,318,564
Disability Retirements	414,215,570		414,215,570
Total for Retirees and Beneficiaries	\$ 15,414,038,507		\$ 15,414,038,507
Total	\$ 23,042,469,829	\$ 2,915,471,755	\$ 25,957,941,584

Under the valuation funding method, an unfunded actuarial accrued liability (UAAL) exists to the extent that the actuarial accrued liability exceeds the actuarial value of assets as presented in Section III. The calculation of the UAAL by Division as of the valuation date is shown in Table IV-2 on the following page.



Section IV: PERA Liabilities

Table IV-2: Calculation of the Unfunded Actuarial Accrued Liability and Funded Ratio
(Dollar Amounts in Millions)

	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire
1. Actuarial Accrued Liability	\$ 9,878.5	\$ 1,111.0	\$ 7,281.5	\$ 2,995.9	\$ 1,775.5
2. Actuarial Value of Assets	5,981.6	1,434.4	5,679.8	2,283.0	1,081.5
3. Unfunded Actuarial Accrued Liability (1-2)	3,896.9	(323.4)	1,601.8	712.9	694.0
Funded Ratio (2 / 1)	60.6%	129.1%	78.0%	76.2%	60.9%

Although the terminology used to describe the excess of PERA's actuarial accrued liability over the actuarial value of assets is call the "unfunded" actuarial accrued liability, the calculated annual contribution rates in the valuation include an annual amortization payment required to fully amortize the UAAL within 25 years. In some cases, the current statutory rates are less than these calculated rates.

The funded ratio is the ratio of the actuarial value of assets (Table III-2) divided by the actuarial accrued liability (Table IV-1) as of the valuation date. As of June 30, 2021, the funded ratio of PERA is 71.4% as compared to a ratio of 70.3% as of June 30, 2020. The ratio is a commonly used measure of the funding progress and can be useful in reviewing the historical trend of a Fund's funding progress. Such a review should also consider the impact to this measure over the historical period due to changes to fund benefits, changes to the actuarial assumptions and methods, and the significant impact that investment experience can have on the ratio over short-term periods. We caution that no single "point in time" measure can provide a universal basis for comparing one plan's funded status to another.



Section IV: PERA Liabilities

The calculation of PERA's actuarial assets and liabilities requires the use of several assumptions concerning the future experience of PERA and its members. In each annual valuation, the latest year of actual experience is compared to that expected by the prior valuation. The differences are actuarial gains and losses which decrease or increase the UAAL. Table IV-3 provides the reconciliation of the UAAL.

Table IV-3: Reconciliation of the UAAL
(Dollar Amounts in Millions)

	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire
1. Beginning of Year UAAL	\$ 3,882.1	\$ (284.6)	\$ 1,644.8	\$ 724.8	\$ 683.9
2. Normal Cost	156.9	25.3	131.1	53.7	36.7
3. Contributions	(283.9)	(35.0)	(219.9)	(91.9)	(58.0)
4. Other Income/Expense	3.9	0.9	3.7	1.5	0.7
5. Interest [$(1 \times 7.25\%) + (2 + 3 + 4) \times 7.25\% \times 0.5$]	277.0	(21.0)	116.2	51.2	48.8
6. Expected End of Year	4,036.0	(314.4)	1,675.9	739.3	712.1
7. Assumption Changes	0	0	0	0	0
8. Other Changes	0	0	0	0	0
9. Expected UAAL after changes (6 + 7 + 8)	4,036.0	(314.4)	1,675.9	739.3	712.1
10. Actual UAAL	3,896.9	(323.4)	1,601.8	712.9	694.0
11. Total Actuarial Gain (Loss)	139.1	9.0	74.1	26.4	18.1

Tables IV-4 and IV-5 on the following pages provide details of the sources of actuarial gains and losses for state divisions and municipal divisions, respectively.

Section IV: PERA Liabilities



Table IV-4: Actuarial Gains & Losses by Source for State Divisions
(Dollar Amounts in Millions)

Source	State General			State Police/Corrections		
	UAAL	Funded Ratio	Contribution Rate*	UAAL	Funded Ratio	Contribution Rate*
Expected Value	\$4,036.0	59.3 %	25.56 %	(\$314.4)	128.8 %	(16.86)%
Retirement	(\$41.7)	0.2 %	(0.26)%	\$0.3	(0.0)%	0.02 %
Disability	(\$4.0)	0.0 %	(0.03)%	(\$1.0)	0.1 %	(0.05)%
Pre-Retirement Death	(\$3.7)	0.0 %	(0.02)%	(\$0.3)	0.0 %	(0.02)%
Withdrawal	(\$37.6)	0.2 %	(0.24)%	(\$0.6)	0.1 %	(0.03)%
Pay Increases	(\$49.6)	0.3 %	(0.31)%	(\$11.5)	1.4 %	(0.61)%
New Entrants	\$25.1	(0.1)%	0.16 %	\$40.9	(4.8)%	2.18 %
Post-Retirement Death	\$20.6	(0.1)%	0.13 %	(\$2.0)	0.2 %	(0.11)%
Data Adjustments	\$47.8	(0.3)%	0.30 %	(\$6.0)	0.7 %	(0.32)%
Other	(\$3.5)	0.1 %	(0.02)%	(\$0.3)	0.0 %	(0.02)%
Investment Return	(\$92.5)	1.0 %	(0.59)%	(\$28.5)	2.6 %	(1.52)%
Total (Gain) or Loss	(\$139.1)	1.3 %	(0.88)%	(\$9.0)	0.3 %	(0.48)%
Assumption Changes	\$0.0	0.0 %	0.00 %	\$0.0	0.0 %	0.00 %
Other Changes	\$0.0	0.0 %	0.00 %	\$0.0	0.0 %	0.00 %
Actual Value	\$3,896.9	60.6 %	24.68 %	(\$323.4)	129.1 %	(17.34)%

* Impact on Contribution Rate based on 25 year period and valuation payroll.

Section IV: PERA Liabilities



Table IV-5: Actuarial Gains & Losses by Source for Municipal Divisions
(Dollar Amounts in Millions)

Source	Municipal General			Municipal Police			Municipal Fire		
	UAAL	Funded Ratio	Contribution Rate*	UAAL	Funded Ratio	Contribution Rate*	UAAL	Funded Ratio	Contribution Rate*
Expected Value	\$1,675.9	76.9 %	11.51 %	\$739.3	75.2 %	20.20 %	\$712.1	59.9 %	31.84 %
Retirement	(\$18.9)	0.2 %	(0.13)%	(\$0.2)	0.0 %	(0.01)%	\$1.5	(0.2)%	0.07 %
Disability	(\$2.2)	0.0 %	(0.02)%	(\$0.3)	0.0 %	(0.01)%	\$0.0	0.0 %	0.00 %
Pre-Retirement Death	(\$4.3)	0.1 %	(0.03)%	(\$0.6)	0.0 %	(0.02)%	(\$0.3)	0.0 %	(0.01)%
Withdrawal	\$0.2	(0.0)%	0.00 %	\$1.8	(0.0)%	0.05 %	\$3.0	(0.4)%	0.13 %
Pay Increases	(\$14.8)	0.2 %	(0.10)%	(\$12.6)	0.3 %	(0.32)%	(\$12.4)	1.8 %	(0.55)%
New Entrants	\$27.3	(0.3)%	0.19 %	\$11.1	(0.3)%	0.30 %	\$4.5	(0.6)%	0.20 %
Post-Retirement Death	(\$6.7)	0.1 %	(0.05)%	\$0.8	(0.0)%	0.02 %	(\$2.3)	0.3 %	(0.10)%
Data Adjustments	\$46.1	(0.6)%	0.32 %	\$15.2	(0.4)%	0.41 %	\$7.6	(1.0)%	0.33 %
Other	(\$1.8)	0.0 %	(0.01)%	(\$0.3)	0.0 %	(0.01)%	(\$0.3)	0.0 %	(0.01)%
Investment Return	(\$99.0)	1.4 %	(0.68)%	(\$41.3)	1.4 %	(1.13)%	(\$19.4)	1.1 %	(0.87)%
Total (Gain) or Loss	(\$74.1)	1.1 %	(0.51)%	(\$26.4)	1.0 %	(0.72)%	(\$18.1)	1.0 %	(0.81)%
Assumption Changes	\$0.0	0.0 %	0.00 %	\$0.0	0.0 %	0.00 %	\$0.0	0.0 %	0.00 %
Other Changes	\$0.0	0.0 %	0.00 %	\$0.0	0.0 %	0.00 %	\$0.0	0.0 %	0.00 %
Actual Value	\$1,601.8	78.0 %	11.00 %	\$712.9	76.2 %	19.48 %	\$694.0	60.9 %	31.03 %

* Impact on Contribution Rate based on 25 year period and valuation payroll.



Section V: Actuarial Funding Calculation

Section IV of this report presented PERA's actuarial accrued liability as the portion of the present value of benefits allocated to past years of service. The portion of the active members' present value of benefits allocated to future years of service is funded through annual normal cost contributions comprised of both active member and employer contributions.

The annual required contribution rate is the percentage of valuation payroll necessary to fund the annual normal cost of the Fund and fully amortize the UAAL over 25 years in accordance with the Board's funding objectives. The calculated rate is expected to remain constant over the remaining amortization period and is provided in Table V-1.

Table V-1(a): Valuation Results for State General Division

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$1,019,477,757	\$1,032,549,986
2. Present Value of Future Benefits	10,964,683,608	10,794,082,980
3. Present Value of Future Normal Costs	1,086,166,619	1,104,376,886
4. Actuarial Accrued Liability (2 - 3)	\$9,878,516,989	\$9,689,706,094
5. Actuarial Value of Assets	5,981,582,669	5,807,551,328
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$3,896,934,320	\$3,882,154,766
7. UAAL Amortization Payment (25 year funding)	\$ 251,572,427	\$ 250,618,311
a. Amortization Payment as a Percent of Payroll (7 / 1)	24.68 %	24.27 %
8. Total Normal Cost	\$ 153,738,441	\$ 156,917,411
a. Normal Cost as a Percent of Payroll (8 / 1)	15.08 %	15.20 %
9. Expected Administrative Expenses	\$ 5,097,389	\$ 5,162,750
a. Administrative Expense as a Percent of Payroll (9 / 1)	0.50 %	0.50 %
10. Actuarially Determined Contribution (ADC)	\$ 410,408,257	\$ 412,698,472
a. ADC Rate (7a + 8a + 9a)	40.26 %	39.97 %
11. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	18.24 %	17.74 %
b. Member Contribution Rate	9.92 %	9.42 %
c. Total Statutory Contribution Rate (a + b)	28.16 %	27.16 %
12. (Excess) Shortfall of Statutory Rates (10a - 11c)	12.10 %	12.81 %

Note that the (Excess) Shortfall of Statutory Rates is only as of the valuation date and does not reflect future members entering the lower cost Tier 2 benefit structure or the full increase in contributions from SB 72.

Section V: Actuarial Funding Calculation



Table V-1(b): Valuation Results for State Police/Correction Division

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$ 120,347,548	\$ 117,258,115
2. Present Value of Future Benefits	1,322,195,505	1,249,400,733
3. Present Value of Future Normal Costs	211,164,376	201,249,644
4. Actuarial Accrued Liability (2 - 3)	\$1,111,031,129	\$1,048,151,089
5. Actuarial Value of Assets	1,434,367,187	1,332,772,683
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ (323,336,058)	\$ (284,621,594)
7. UAAL Amortization Payment (25 year funding)	\$ (20,873,443)	\$ (18,374,173)
a. Amortization Payment as a Percent of Payroll (7 / 1)	(17.34)%	(15.67)%
8. Total Normal Cost	\$ 27,447,921	\$ 25,347,154
a. Normal Cost as a Percent of Payroll (8 / 1)	22.81 %	21.62 %
9. Expected Administrative Expenses	\$ 601,738	\$ 586,291
a. Administrative Expense as a Percent of Payroll (9 / 1)	0.50 %	0.50 %
10. Actuarially Determined Contribution (ADC)	\$ 7,176,216	\$ 7,559,272
a. ADC Rate (7a + 8a + 9a)	5.97 %	6.45 %
11. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	25.59 %	25.56 %
b. Member Contribution Rate	9.01 %	8.99 %
c. Total Statutory Contribution Rate (a + b)	34.60 %	34.55 %
12. (Excess) Shortfall of Statutory Rates (10a - 11c)	(28.63)%	(28.10)%

Note that the (Excess) Shortfall of Statutory Rates is only as of the valuation date and does not reflect future members entering the lower cost Tier 2 benefit structure or the full increase in contributions from SB 72.

Section V: Actuarial Funding Calculation



Table V-1(c): Valuation Results for Municipal General Division

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$ 939,676,256	\$ 952,092,474
2. Present Value of Future Benefits	8,197,500,980	7,989,795,233
3. Present Value of Future Normal Costs	915,956,756	934,989,085
4. Actuarial Accrued Liability (2 - 3)	\$7,281,544,224	\$7,054,806,148
5. Actuarial Value of Assets	5,679,750,605	5,410,004,791
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$1,601,793,619	\$1,644,801,357
7. UAAL Amortization Payment (25 year funding)	\$ 103,406,184	\$ 106,182,613
a. Amortization Payment as a Percent of Payroll (7 / 1)	11.00 %	11.15 %
8. Total Normal Cost	\$ 128,597,090	\$ 131,105,944
a. Normal Cost as a Percent of Payroll (8 / 1)	13.69 %	13.77 %
9. Expected Administrative Expenses	\$ 4,698,381	\$ 4,760,462
a. Administrative Expense as a Percent of Payroll (9 / 1)	0.50 %	0.50 %
10. Actuarially Determined Contribution (ADC)	\$ 236,701,655	\$ 242,049,019
a. ADC Rate (7a + 8a + 9a)	25.19 %	25.42 %
11. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	10.01 %	10.03 %
b. Member Contribution Rate	13.53 %	13.53 %
c. Total Statutory Contribution Rate (a + b)	23.54 %	23.56 %
12. (Excess) Shortfall of Statutory Rates (10a - 11c)	1.65 %	1.86 %

Note that the (Excess) Shortfall of Statutory Rates is only as of the valuation date and does not reflect future members entering the lower cost Tier 2 benefit structure or the full increase in contributions from SB 72.

Section V: Actuarial Funding Calculation



Table V-1(d): Valuation Results for Municipal Police Division

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$ 236,292,500	\$ 236,622,389
2. Present Value of Future Benefits	3,395,465,151	3,289,742,056
3. Present Value of Future Normal Costs	399,540,548	403,193,798
4. Actuarial Accrued Liability (2 - 3)	\$2,995,924,603	\$2,886,548,258
5. Actuarial Value of Assets	2,283,030,585	2,161,723,690
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 712,894,018	\$ 724,824,568
7. UAAL Amortization Payment (25 year funding)	\$ 46,021,940	\$ 46,792,135
a. Amortization Payment as a Percent of Payroll (7 / 1)	19.48 %	19.78 %
8. Total Normal Cost	\$ 53,136,489	\$ 53,704,774
a. Normal Cost as a Percent of Payroll (8 / 1)	22.49 %	22.70 %
9. Expected Administrative Expenses	\$ 1,181,463	\$ 1,183,112
a. Administrative Expense as a Percent of Payroll (9 / 1)	0.50 %	0.50 %
10. Actuarially Determined Contribution (ADC)	\$ 100,339,892	\$ 101,680,021
a. ADC Rate (7a + 8a + 9a)	42.47 %	42.98 %
11. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	18.96 %	18.93 %
b. Member Contribution Rate	17.30 %	17.28 %
c. Total Statutory Contribution Rate (a + b)	36.26 %	36.21 %
12. (Excess) Shortfall of Statutory Rates (10a - 11c)	6.21 %	6.77 %

Note that the (Excess) Shortfall of Statutory Rates is only as of the valuation date and does not reflect future members entering the lower cost Tier 2 benefit structure or the full increase in contributions from SB 72.

Section V: Actuarial Funding Calculation



Table V-1(e): Valuation Results for Municipal Fire Division

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$ 144,379,873	\$ 143,726,325
2. Present Value of Future Benefits	2,078,096,340	2,015,346,021
3. Present Value of Future Normal Costs	302,643,456	305,686,741
4. Actuarial Accrued Liability (2 - 3)	\$1,775,452,884	\$1,709,659,280
5. Actuarial Value of Assets	1,081,479,512	1,025,786,446
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 693,973,372	\$ 683,872,834
7. UAAL Amortization Payment (25 year funding)	\$ 44,800,490	\$ 44,148,434
a. Amortization Payment as a Percent of Payroll (7 / 1)	31.03 %	30.72 %
8. Total Normal Cost	\$ 36,619,914	\$ 36,663,987
a. Normal Cost as a Percent of Payroll (8 / 1)	25.36 %	25.51 %
9. Expected Administrative Expenses	\$ 721,899	\$ 718,632
a. Administrative Expense as a Percent of Payroll (9 / 1)	0.50 %	0.50 %
10. Actuarially Determined Contribution (ADC)	\$ 82,142,303	\$ 81,531,053
a. ADC Rate (7a + 8a + 9a)	56.89 %	56.73 %
11. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	21.79 %	21.81 %
b. Member Contribution Rate	17.57 %	17.57 %
c. Total Statutory Contribution Rate (a + b)	39.36 %	39.38 %
12. (Excess) Shortfall of Statutory Rates (10a - 11c)	17.53 %	17.35 %

Note that the (Excess) Shortfall of Statutory Rates is only as of the valuation date and does not reflect future members entering the lower cost Tier 2 benefit structure or the full increase in contributions from SB 72.

Section V: Actuarial Funding Calculation



Table V-1(f): Valuation Results for All PERA Divisions

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$ 2,460,173,934	\$ 2,482,249,289
2. Present Value of Future Benefits	25,957,941,584	25,338,367,023
3. Present Value of Future Normal Costs	2,915,471,755	2,949,496,154
4. Actuarial Accrued Liability (2 - 3)	\$23,042,469,829	\$22,388,870,869
5. Actuarial Value of Assets	16,460,210,558	15,737,838,938
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 6,582,259,271	\$ 6,651,031,931
7. UAAL Amortization Payment (25 year funding)	\$ 424,927,598	\$ 429,367,320
a. Amortization Payment as a Percent of Payroll (7 / 1)	17.27 %	17.30 %
8. Total Normal Cost	\$ 399,539,855	\$ 403,739,270
a. Normal Cost as a Percent of Payroll (8 / 1)	16.24 %	16.27 %
9. Expected Administrative Expenses	\$ 12,300,870	\$ 12,411,246
a. Administrative Expense as a Percent of Payroll (9 / 1)	0.50 %	0.50 %
10. Actuarially Determined Contribution (ADC)	\$ 836,768,323	\$ 845,517,836
a. ADC Rate (7a + 8a + 9a)	34.01 %	34.07 %
11. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	15.73 %	15.50 %
b. Member Contribution Rate	12.41 %	12.20 %
c. Total Statutory Contribution Rate (a + b)	28.14 %	27.70 %
12. (Excess) Shortfall of Statutory Rates (10a - 11c)	5.87 %	6.37 %

Note that the (Excess) Shortfall of Statutory Rates is only as of the valuation date and does not reflect future members entering the lower cost Tier 2 benefit structure or the full increase in contributions from SB 72.



Table V-2: Contribution Rate Summary

Division	Employer Only		
	Current Statutory Rate	25-year Rate	(Excess)/ Shortfall
State General	18.24 %	30.34 %	12.10 %
State Police/Corrections	25.59 %	(3.04)%	(28.63)%
Municipal General	10.01 %	11.66 %	1.65 %
Municipal Police	18.96 %	25.17 %	6.21 %
Municipal Fire	21.79 %	39.32 %	17.53 %
PERA Total	15.73 %	21.60 %	5.87 %

Section V: Actuarial Funding Calculation



Table V-3: Statutory Contribution Rate Summary

Division and Coverage Plan	Contribution Rates	
	Member	Employer
State Division		
General Coverage Plan 3	9.92 %	18.24 %
Police and Adult Corrections Plan 1	9.10 %	25.50 %
Hazardous Duty (Juvenile Correctional Officers) Plan 2	7.28 %	27.37 %
Weighted Average for Police/Corrections*	9.01 %	25.59 %
Municipal Division		
General Coverage Plans		
Plan 1	8.50 %	7.65 %
Plan 2	10.65 %	9.80 %
Plan 3	14.65 %	9.80 %
Plan 4	17.15 %	12.30 %
Detention Officers Plan 1	18.15 %	17.30 %
Weighted Average*	13.53 %	10.01 %
Police Coverage Plans		
Plan 1	8.50 %	10.65 %
Plan 2	8.50 %	15.65 %
Plan 3	8.50 %	19.15 %
Plan 4	13.85 %	19.15 %
Plan 5	17.80 %	19.15 %
Weighted Average*	17.30 %	18.96 %
Fire Coverage Plans		
Plan 1	9.50 %	11.65 %
Plan 2	9.50 %	18.15 %
Plan 3	9.50 %	21.90 %
Plan 4	14.30 %	21.90 %
Plan 5	17.70 %	21.90 %
Weighted Average*	17.57 %	21.79 %

* PERA financial records do not provide an asset breakdown by coverage plan which necessitates the use of a weighted average contribution rate for the purpose of comparing assets to the actuarial accrued liability and determining the financing period for the unfunded actuarial accrued liability. Contribution rates are weighted by payroll.



Section VI: Additional Disclosure Information

The tables provided in this section present information relevant for the annual financial reporting of PERA. GASB Statement No. 67 required disclosure information will be provided in a separate supplemental report. Additional disclosure information is provided below.

Table VI-1: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Annual Payroll* (c)	UAAL as a Percentage of Annual Payroll ((b - a) / c)
6/30/2021	\$ 16,460,210,558	\$ 23,042,469,829	\$6,582,259,271	71.4 %	\$2,388,518,383	275.6 %
6/30/2020	15,737,838,938	22,388,870,869	6,651,031,931	70.3 %	2,409,950,766	276.0 %
6/30/2019	15,500,330,667	22,162,998,348	6,662,667,681	69.9 %	2,271,770,279	293.3 %
6/30/2018	15,252,860,672	21,313,451,183	6,060,590,511	71.6 %	2,221,079,274	272.9 %
6/30/2017	15,124,167,297	20,194,698,290	5,070,530,993	74.9 %	2,204,414,890	230.0 %
6/30/2016	14,654,814,373	19,474,241,384	4,819,427,011	75.3 %	2,135,171,462	225.7 %
6/30/2015	14,074,919,042	18,786,486,550	4,711,567,508	74.9 %	2,248,254,276	209.6 %
6/30/2014	13,482,815,522	17,784,376,686	4,301,561,164	75.8 %	2,102,265,325	204.6 %
6/30/2013	12,438,151,665	17,057,380,022	4,619,228,357	72.9 %	2,049,737,510	225.4 %
6/30/2012	11,612,047,019	17,788,043,847	6,175,996,828	65.3 %	1,994,280,107	309.7 %
6/30/2011	11,855,217,373	16,826,392,409	4,971,175,036	70.5 %	1,935,013,761	256.9 %

* Beginning with the 2016 valuation, annual payroll reflects the change from total to pensionable earnings.



Section VI: Additional Disclosure Information

Table VI-2: Solvency Test by Division

State General

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 963,306,737	\$ 7,114,191,110	\$ 1,801,019,142	\$ 5,981,582,669	100.00%	70.54%	0.00%
6/30/2020	924,990,774	6,884,617,226	1,880,098,094	5,807,551,328	100.00	70.92	0.00
6/30/2019	896,762,967	6,893,274,726	1,746,565,214	5,805,041,751	100.00	71.20	0.00
6/30/2018	892,279,750	6,620,228,801	1,682,936,866	5,799,854,720	100.00	74.13	0.00
6/30/2017	878,994,137	6,218,179,179	1,714,643,642	5,831,916,099	100.00	79.65	0.00

State Police/Corrections

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 75,673,068	\$ 694,754,994	\$ 340,603,067	\$ 1,434,367,187	100.00%	100.00%	100.00%
6/30/2020	72,530,634	666,980,924	308,639,531	1,332,772,683	100.00	100.00	100.00
6/30/2019	69,799,978	695,901,232	219,280,926	1,282,058,570	100.00	100.00	100.00
6/30/2018	67,111,945	677,224,121	201,630,652	1,231,975,474	100.00	100.00	100.00
6/30/2017	64,332,242	645,636,929	199,904,014	1,196,338,715	100.00	100.00	100.00

Section VI: Additional Disclosure Information



Municipal General

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 1,232,683,304	\$ 4,939,793,901	\$ 1,109,067,019	\$ 5,679,750,605	100.00%	90.03%	0.00%
6/30/2020	1,199,236,797	4,682,479,829	1,173,089,522	5,410,004,791	100.00	89.93	0.00
6/30/2019	1,161,061,009	4,771,658,727	1,124,215,032	5,301,086,178	100.00	86.76	0.00
6/30/2018	1,137,899,276	4,528,287,174	1,131,956,929	5,184,797,302	100.00	89.37	0.00
6/30/2017	1,104,575,618	4,191,453,200	1,099,006,703	5,106,489,938	100.00	95.48	0.00

Municipal Police

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 340,676,470	\$ 2,108,040,665	\$ 547,207,468	\$ 2,283,030,585	100.00%	92.14%	0.00%
6/30/2020	327,110,526	1,993,453,153	565,984,579	2,161,723,690	100.00	92.03	0.00
6/30/2019	303,167,527	2,095,697,284	485,333,068	2,109,268,722	100.00	86.18	0.00
6/30/2018	289,967,593	2,011,087,857	449,322,578	2,058,403,842	100.00	87.93	0.00
6/30/2017	275,702,207	1,882,156,157	404,904,171	2,027,593,334	100.00	93.08	0.00

Municipal Fire

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 238,294,797	\$ 1,163,350,094	\$ 373,807,993	\$ 1,081,479,512	100.00%	72.48%	0.00%
6/30/2020	227,986,295	1,107,995,694	373,677,291	1,025,786,446	100.00	72.00	0.00
6/30/2019	214,452,786	1,158,090,653	327,737,219	1,002,875,446	100.00	68.08	0.00
6/30/2018	205,989,875	1,099,223,887	318,303,879	977,829,334	100.00	70.22	0.00
6/30/2017	194,507,068	1,033,070,516	287,632,507	961,829,211	100.00	74.28	0.00

Section VI: Additional Disclosure Information



Table VI-2: Solvency Test for All PERA Divisions

PERA Totals

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 2,850,634,376	\$ 16,020,130,764	\$ 4,171,704,689	\$ 16,460,210,558	100.00%	84.95%	0.00%
6/30/2020	2,751,855,026	15,335,526,826	4,301,489,017	15,737,838,938	100.00	84.68	0.00
6/30/2019	2,645,244,267	15,614,622,622	3,903,131,459	15,500,330,667	100.00	82.33	0.00
6/30/2018	2,593,248,439	14,936,051,840	3,784,150,904	15,252,860,672	100.00	84.76	0.00
6/30/2017	2,518,111,272	13,970,495,981	3,706,091,037	15,124,167,297	100.00	90.23	0.00



Section VI: Additional Disclosure Information

**Table VI-3: Schedule of Retirants Added to and Removed from Rolls by Division
State General**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	930	\$29,992,401	543	\$13,445,780	20,374	\$603,156,899	2.82%	\$ 29,604
6/30/2020	1,229	43,864,347	492	11,705,908	19,987	586,610,278	5.80	29,350
6/30/2019	1,017	38,014,119	537	12,503,719	19,250	554,451,839	4.82	28,803
6/30/2018	986	35,111,580	427	9,977,306	18,770	528,941,439	4.99	28,180
6/30/2017	912	31,124,051	536	11,387,703	18,211	503,807,165	4.08	27,665

State Police/Corrections

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	87	\$ 2,998,169	52	\$ 1,425,116	1,625	\$54,882,868	2.95%	\$ 33,774
6/30/2020	52	2,615,081	29	809,380	1,590	53,309,815	3.51	33,528
6/30/2019	58	2,826,753	44	1,195,773	1,567	51,504,114	3.27	32,868
6/30/2018	62	2,532,699	31	992,132	1,553	49,873,134	3.19	32,114
6/30/2017	51	2,309,111	38	882,314	1,522	48,332,567	3.04	31,756



Section VI: Additional Disclosure Information

Municipal General

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	932	\$27,175,951	506	\$11,177,142	14,801	\$404,587,902	4.12%	\$ 27,335
6/30/2020	725	25,400,841	385	8,249,790	14,375	388,589,093	4.62	27,032
6/30/2019	946	29,052,180	426	8,634,982	14,035	371,438,042	5.82	26,465
6/30/2018	911	27,278,930	313	6,346,069	13,515	351,020,844	6.34	25,973
6/30/2017	717	21,257,836	418	7,607,253	12,917	330,087,983	4.31	25,555

Municipal Police

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	209	\$ 9,736,112	69	\$ 2,271,953	3,864	\$159,055,145	4.92%	\$ 41,163
6/30/2020	71	5,531,990	52	1,634,353	3,724	151,590,986	2.64	40,706
6/30/2019	177	9,107,704	70	2,029,823	3,705	147,693,349	5.03	39,863
6/30/2018	165	8,523,713	44	1,491,360	3,598	140,615,468	5.26	39,082
6/30/2017	166	8,150,488	61	1,633,073	3,477	133,583,115	5.13	38,419

Municipal Fire

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	97	\$ 4,994,296	38	\$ 1,486,039	2,079	\$90,860,263	4.02%	\$ 43,704
6/30/2020	61	4,093,428	34	1,423,643	2,020	87,352,006	3.15	43,244
6/30/2019	95	5,867,307	40	1,447,080	1,993	84,682,221	5.51	42,490
6/30/2018	81	4,982,102	27	1,063,296	1,938	80,261,994	5.13	41,415
6/30/2017	34	2,496,048	22	816,881	1,884	76,343,188	2.25	40,522

**Table VI-3: Schedule of Retirants Added to and Removed from Rolls
for All PERA Divisions**

PERA Totals

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	2,255	\$74,896,929	1,208	\$29,806,030	42,743	\$ 1,312,543,077	3.56%	\$ 30,708
6/30/2020	2,138	81,505,687	992	23,823,074	41,696	1,267,452,178	4.77	30,397
6/30/2019	2,293	84,868,063	1,117	25,811,377	40,550	1,209,769,565	5.13	29,834
6/30/2018	2,205	78,429,024	842	19,870,163	39,374	1,150,712,879	5.36	29,225
6/30/2017	1,880	65,337,534	1,075	22,327,224	38,011	1,092,154,018	4.10	28,733

Table VI-4: Summary of Actuarial Methods and Assumptions

Valuation date	June 30, 2021
Actuarial cost method	Entry Age Normal
Amortization method	Level Percent of Payroll, Open
Payroll growth rate	3.00%
Remaining amortization period	25 years
Asset valuation method	4-year Smoothed Market
Actuarial assumptions:	
Investment rate of return*	7.25%
Administrative expenses	0.50% of payroll
Projected salary increases*	3.25% – 13.50%
Post-retirement benefit increases	1.60% compounded annually beginning 7/1/2023. (2.50% for certain retirees, beneficiaries, and disabled participants age 75 or older as of June 30, 2020; or with annual benefits less than \$25,000)

* Includes inflation at 2.50%



Appendix A: Additional Membership Data

Table A-1: Schedule of Active Participant Data as of June 30, 2021 by Division

State General

Nearest Age	Completed Years of Service								Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	
Under 20	22							22	\$ 687,146
20 to 24	475	8						483	16,492,403
25 to 29	1,299	181	1					1,481	60,804,843
30 to 34	1,355	689	142	7				2,193	101,231,735
35 to 39	1,091	706	435	208	14			2,454	124,218,889
40 to 44	842	614	408	414	207	2		2,487	135,675,481
45 to 49	696	526	336	464	390	42		2,454	139,546,011
50 to 54	611	526	344	433	410	84	7	2,415	139,525,428
55 to 59	500	453	330	420	344	111	14	2,172	121,240,219
60	77	85	70	114	65	19	4	434	24,281,506
61	60	103	56	70	44	18	2	353	19,837,073
62	71	72	52	77	39	14	5	330	19,711,639
63	68	63	55	46	31	11	2	276	16,439,760
64	50	51	47	39	26	17	2	232	13,977,239
65	41	56	32	37	27	10	3	206	12,762,689
66	33	36	19	32	24	9	5	158	10,617,894
67	21	37	18	17	12	7	1	113	6,886,571
68	25	17	17	16	6	5	2	88	5,358,716
69	16	29	8	12	7	3	8	83	5,496,843
70	11	14	10	8	6	4		53	3,446,393
71	9	13	4	7	4	4	1	42	2,879,200
72	8	5	7	7	2		1	30	1,624,624
73	9	6	4	3	6	3		31	1,676,083
74	9	3	3	4				19	1,150,125
75	3	5	6	4		1		19	1,311,884
76	1	1						2	86,827
77	2		3	1	2			8	812,655
78	4	3	2	4	2			15	806,711
79		2	1	1	1			5	322,712
80 & Over	5	3	1		3		2	14	874,931
Total	7,414	4,307	2,411	2,445	1,672	364	59	18,672	\$ 989,784,230

Average Age: 45.13

Average Service: 9.07



Appendix A: Additional Membership Data

State Police/Corrections

Nearest Age	Completed Years of Service								
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	Payroll
Under 20	3							3	\$ 105,106
20 to 24	144	3						147	6,617,691
25 to 29	250	101	11	1				363	16,809,546
30 to 34	144	163	102	22				431	20,975,475
35 to 39	76	94	89	91	37			387	20,267,061
40 to 44	43	52	50	82	79	10		316	17,169,723
45 to 49	31	45	26	59	78	24	3	266	15,472,148
50 to 54	14	24	33	37	53	18	4	183	10,099,787
55 to 59	11	16	10	28	19	11	2	97	5,026,487
60		2	2	6	5	1	1	17	998,917
61		4	2	3	6		1	16	788,133
62		2	1	4	6			13	636,467
63	1		3	3	2			9	437,793
64	2		1	2	2	1		8	350,695
65				2	1	1		4	272,482
66		1			2	1	2	6	304,279
67	1		1			1	1	4	183,244
68		1		1				2	103,399
69									
70				1		1		2	84,962
71									
72		1						1	54,675
73						1		1	45,093
74									
75									
76									
77									
78									
79	1							1	39,117
80 & Over									
Total	721	509	331	342	290	70	14	2,277	\$116,842,280

Average Age: 38.39

Average Service: 10.60



Appendix A: Additional Membership Data

Municipal General

Nearest Age	Completed Years of Service								Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	
Under 20	285							285	\$ 8,952,645
20 to 24	1,166	18						1,184	36,527,660
25 to 29	1,408	343	7					1,758	61,536,750
30 to 34	1,263	670	258	27				2,218	86,784,536
35 to 39	1,020	649	492	225	8			2,394	104,091,367
40 to 44	849	567	466	409	207	7		2,505	120,755,273
45 to 49	685	489	445	391	294	58		2,362	116,320,422
50 to 54	686	500	405	400	361	129	10	2,491	122,286,842
55 to 59	650	479	388	398	327	114	32	2,388	115,018,830
60	128	101	65	81	79	19	5	478	23,053,608
61	98	87	103	70	56	32	9	455	21,734,092
62	84	85	87	63	54	21	5	399	19,197,529
63	94	72	54	55	27	13	4	319	14,604,748
64	68	62	62	41	25	12	12	282	13,860,228
65	60	61	44	35	24	7	8	239	11,158,223
66	40	37	34	17	12	7	2	149	7,512,108
67	42	31	16	24	11	4	1	129	5,874,741
68	37	20	21	10	7	3	1	99	4,521,404
69	29	19	13	14	5	2	2	84	3,981,470
70	26	18	7	8	7	2	3	71	2,784,038
71	19	11	16	8	2	2		58	2,378,189
72	21	10	11	5	4	3	1	55	2,662,029
73	13	15	5	2	3	2	3	43	1,677,389
74	22	6		1	2	3	1	35	1,258,229
75	10	4	3	3				20	760,133
76	10	4	1	2				17	625,085
77	7	2	1	1	1	1		13	297,841
78	7	2	4	1			1	15	645,799
79	8	1			1	2		12	289,782
80 & Over	19	6	3	2	2	3		35	1,156,055
Total	8,854	4,369	3,011	2,293	1,519	446	100	20,592	\$ 912,307,045

Average Age: 44.37

Average Service: 8.52



Appendix A: Additional Membership Data

Municipal Police

Nearest Age	Completed Years of Service								
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	Payroll
Under 20	2							2	\$ 53,641
20 to 24	234	9						243	\$ 10,501,126
25 to 29	468	207	9					684	35,226,906
30 to 34	266	375	131	6				778	44,905,382
35 to 39	103	176	230	123	3			635	41,333,511
40 to 44	61	85	151	211	42			550	37,396,508
45 to 49	27	58	68	118	109	6		386	28,290,669
50 to 54	26	13	54	86	52	14	1	246	17,861,838
55 to 59	20	14	32	33	17	7	5	128	9,294,417
60	1	1	2	3		1		8	598,464
61	3	2	1	3	3			12	699,116
62	1		2	5	3			11	611,737
63	3	1	6	3				13	816,553
64			1		1	1	1	4	298,930
65	1	1	1	3	1			7	403,782
66	2		2	2				6	382,311
67			2					2	125,817
68	1							1	65,494
69	2	1		1				4	281,293
70							1	1	73,819
71							1	1	92,815
72									
73									
74		1						1	35,663
75									
76									
77									
78									
79									
80 & Over			1					1	60,402
Total	1,221	944	693	597	231	29	9	3,724	\$ 229,410,194

Average Age: 37.12

Average Service: 9.35



Appendix A: Additional Membership Data

Municipal Fire

Nearest Age	Completed Years of Service								
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	Payroll
Under 20	7							7	\$ 276,577
20 to 24	152							152	5,820,258
25 to 29	267	71	3					341	15,542,736
30 to 34	166	192	82	1				441	22,997,760
35 to 39	74	120	208	99	2			503	30,229,365
40 to 44	38	67	131	198	33	2		469	30,297,245
45 to 49	13	24	47	109	65	6	1	265	18,598,958
50 to 54	14	19	31	43	38	6	1	152	10,417,773
55 to 59	4	3	9	17	16	4	1	54	3,841,420
60				3	1	2	1	7	501,905
61	1		1	1	1		1	5	348,946
62			4		1		1	6	432,012
63				1				1	91,553
64									
65					1	1		2	174,323
66			2				1	3	214,149
67	1							1	84,678
68					1		1	2	152,148
69							1	1	79,572
70									
71									
72		1						1	41,355
73									
74									
75									
76		1						1	31,900
77									
78									
79									
80 & Over									
Total	737	498	518	472	159	21	9	2,414	\$ 140,174,634

Average Age: 37.48

Average Service: 10.19



Appendix A: Additional Membership Data

All PERA Divisions

Nearest Age	Completed Years of Service								
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	Payroll
Under 20	319							319	\$ 10,075,115
20 to 24	2,171	38						2,209	75,959,139
25 to 29	3,692	903	31	1				4,627	189,920,781
30 to 34	3,194	2,089	715	63				6,061	276,894,889
35 to 39	2,364	1,745	1,454	746	64			6,373	320,140,193
40 to 44	1,833	1,385	1,206	1,314	568	21		6,327	341,294,232
45 to 49	1,452	1,142	922	1,141	936	136	4	5,733	318,228,207
50 to 54	1,351	1,082	867	999	914	251	23	5,487	300,191,668
55 to 59	1,185	965	769	896	723	247	54	4,839	254,421,371
60	206	189	139	207	150	42	11	944	49,434,400
61	162	196	163	147	110	50	13	841	43,407,361
62	156	159	146	149	103	35	11	759	40,589,384
63	166	136	118	108	60	24	6	618	32,390,407
64	120	113	111	82	54	31	15	526	28,487,091
65	102	118	77	77	54	19	11	458	24,771,499
66	75	74	57	51	38	17	10	322	19,030,741
67	65	68	37	41	23	12	3	249	13,155,049
68	63	38	38	27	14	8	4	192	10,201,161
69	47	49	21	27	12	5	11	172	9,839,178
70	37	32	17	17	13	7	4	127	6,389,211
71	28	24	20	15	6	6	2	101	5,350,204
72	29	17	18	12	6	3	2	87	4,382,683
73	22	21	9	5	9	6	3	75	3,398,564
74	31	10	3	5	2	3	1	55	2,444,017
75	13	9	9	7		1		39	2,072,017
76	11	6	1	2				20	743,812
77	9	2	4	2	3	1		21	1,110,496
78	11	5	6	5	2		1	30	1,452,511
79	9	3	1	1	2	2		18	651,611
80 & Over	24	9	5	2	5	3	2	50	2,091,388
Total	18,947	10,627	6,964	6,149	3,871	930	191	47,679	\$ 2,388,518,383

Average Age: 43.47

Average Service: 8.99



Appendix A: Additional Membership Data

Table A-2: Number of Annual Retirement Allowances of Benefit Recipients as of June 30, 2021

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
Service Retirement Pensions			
Single Life Pension Terminating Upon Death*	16,601	\$ 524,964,669	\$ 31,622
Two Life 100% Survivor Pension			
Retired Member Recipient*	14,085	461,789,561	32,786
Survivor Recipient	2,721	69,831,668	25,664
Two Life 50% Survivor Pension			
Retired Member Recipient*	5,164	178,929,585	34,649
Survivor Recipient	1,028	15,268,891	14,853
Single Life with Temporary Child Survivor Pension			
Retired Member Recipient*	181	7,760,638	42,876
Child Recipient	7	207,318	29,617
Total Service Retirement Pensions	39,787	\$ 1,258,752,330	\$ 31,637
Disability Retirement Pensions			
Single Life Pension Terminating Upon Death*	506	\$ 9,370,634	\$ 18,519
Two Life 100% Survivor Pension			
Retired Member Recipient*	786	14,495,893	18,443
Survivor Recipient	218	3,527,785	16,183
Two Life 50% Survivor Pension			
Retired Member Recipient*	189	3,937,191	20,832
Survivor Recipient	28	243,286	8,689
Single Life with Temporary Child Survivor Pension			
Retired Member Recipient*	9	159,737	17,749
Child Recipient	1	10,401	10,401
Total Disability Retirement Pensions	1,737	\$ 31,744,927	\$ 18,276
Pre-Retirement Survivor Pensions			
Spouse Recipient	1,187	\$ 21,732,573	18,309
Child Recipient	32	313,247	9,789
Total Pre-Retirement Survivor Pensions	1,219	\$ 22,045,820	\$ 18,085
Total Pensions Being Paid	42,743	\$ 1,312,543,077	\$ 30,708

* Includes Co-Payees



Appendix A: Additional Membership Data

Table A-3: Distribution of Participants Receiving Benefits as of June 30, 2021

Attained Age	Retired Member		Disabled Member		Survivor Beneficiaries		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
Under 40	15	\$ 253,026	20	\$ 482,856	253	\$ 4,222,524	288	\$ 4,958,406
40 to 44	198	8,327,483	53	1,104,714	133	2,340,646	384	11,772,843
45 to 49	984	41,490,142	118	2,605,299	147	2,663,433	1,249	46,758,874
50 to 54	2,335	96,199,912	223	4,604,904	254	4,709,459	2,812	105,514,275
55 to 59	3,670	147,819,051	282	5,821,840	325	6,724,556	4,277	160,365,447
60 to 64	5,384	196,249,709	398	7,461,248	513	11,397,542	6,295	215,108,499
65 to 69	7,417	224,120,721	286	4,794,081	669	15,445,156	8,372	244,359,958
70 to 74	7,262	215,669,807	92	964,133	763	17,822,902	8,117	234,456,842
75 to 79	4,366	126,733,673	1	2,081	741	16,784,445	5,108	143,520,199
80 to 84	2,576	69,307,900			653	13,561,713	3,229	82,869,613
85 to 89	1,235	33,285,321			448	9,592,889	1,683	42,878,210
90 to 94	495	11,613,608			244	4,670,571	739	16,284,179
95 to 99	100	2,301,759			71	1,112,576	171	3,414,335
100 & Over	11	194,641			8	86,756	19	281,397
Total	36,048	\$ 1,173,566,753	1,473	\$ 27,841,156	5,222	\$111,135,168	42,743	\$ 1,312,543,077



Appendix A: Additional Membership Data

**Table A-4: Distribution of Retirees by Years of Service at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

Division	Years of Credited Service at Retirement							
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total
State General								
Average Monthly Benefit*	\$ 963	\$ 913	\$ 1,547	\$ 2,227	\$ 3,028	\$ 3,560	\$3,687	\$2,658
Number of Retirees*	809	1,920	2,003	1,933	2,406	6,976	582	16,629
State Police/Corrections								
Average Monthly Benefit*	\$ 1,804	\$1,641	\$ 1,764	\$ 2,390	\$ 2,952	\$ 3,501	\$4,091	\$3,107
Number of Retirees*	35	53	55	77	346	611	67	1,244
Municipal General								
Average Monthly Benefit*	\$ 1,217	\$ 776	\$ 1,291	\$ 2,013	\$ 2,837	\$ 3,406	\$3,748	\$2,475
Number of Retirees*	518	1,409	1,555	1,469	1,700	4,649	482	11,782
Municipal Police								
Average Monthly Benefit*	\$ 2,779	\$1,689	\$ 2,184	\$ 3,404	\$ 3,890	\$ 4,638	\$4,600	\$3,755
Number of Retirees*	82	61	85	432	2,261	172	42	3,135
Municipal Fire								
Average Monthly Benefit*	\$ 3,561	\$2,463	\$ 2,824	\$ 3,591	\$ 4,064	\$ 4,932	\$3,809	\$3,974
Number of Retirees*	29	27	47	193	1,270	76	38	1,680
Totals for All Divisions								
Average Monthly Benefit*	\$ 1,225	\$ 894	\$ 1,475	\$ 2,341	\$ 3,393	\$ 3,523	\$3,769	\$2,775
Number of Retirees*	1,473	3,470	3,745	4,104	7,983	12,484	1,211	34,470

*Does not include the following number of retirees with missing years of service at retirement

State General - 173

State Police/Corrections - 7

Municipal General - 29

Municipal Police - 12

Municipal Fire - 7



Appendix A: Additional Membership Data

**Table A-5: Distribution of Recent Retiree Ages at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

Division	2016-17 Retirees	2017-18 Retirees	2018-19 Retirees	2019-20 Retirees	2020-21 Retirees	All Current Retirees
State General						
Number	680	729	800	697	696	16,802
Average Monthly Benefit at Retirement	\$ 2,188	\$ 2,393	\$ 2,557	\$ 2,525	\$ 2,504	\$ 2,150
Average Age at Retirement	61.19	60.70	60.56	59.93	61.05	57.78
State Police/Corrections						
Number	26	43	37	53	59	1,251
Average Monthly Benefit at Retirement	\$ 3,082	\$ 2,757	\$ 3,489	\$ 3,144	\$ 3,146	\$ 2,519
Average Age at Retirement	51.75	54.05	51.47	53.03	52.72	51.05
Municipal General						
Number	492	650	716	677	709	11,811
Average Monthly Benefit at Retirement	\$ 1,950	\$ 2,196	\$ 2,178	\$ 2,337	\$ 2,387	\$ 2,055
Average Age at Retirement	61.85	60.57	61.27	60.79	61.25	58.33
Municipal Police						
Number	110	119	136	106	161	3,147
Average Monthly Benefit at Retirement	\$ 3,478	\$ 3,871	\$ 3,711	\$ 3,745	\$ 4,248	\$ 3,073
Average Age at Retirement	49.04	50.48	49.39	50.17	50.15	47.81
Municipal Fire						
Number	18	61	76	62	72	1,687
Average Monthly Benefit at Retirement	\$ 3,570	\$ 4,137	\$ 4,434	\$ 3,913	\$ 4,679	\$ 3,164
Average Age at Retirement	51.16	49.27	49.89	50.59	48.31	47.92
Totals for All Current Retirees						
Number	1,326	1,602	1,765	1,595	1,697	34,698
Average Monthly Benefit at Retirement	\$ 2,243	\$ 2,499	\$ 2,593	\$ 2,601	\$ 2,735	\$ 2,264
Average Age at Retirement	60.10	59.27	59.34	59.05	59.27	56.34



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Cost Methods Used for the Valuation

An actuarial cost method is a procedure for allocating the actuarial present value of benefits and expenses to time periods. The method used for this valuation is known as the individual entry-age actuarial cost method and has the following characteristics:

- (i) The annual normal costs for each individual active member are sufficient to accumulate the value of the member's pension at the time of retirement.
- (ii) Each annual normal cost is a constant percentage of the member's year-by-year projected compensation.

The individual entry-age actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's compensation between the entry-age of the member and the expected exit ages. The expected annual administrative expenses are included in the determination of the actuarially determined contributions.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future costs is called the actuarial accrued liability. Deducting actuarial value of assets from the actuarial accrued liability determines the unfunded actuarial accrued liability. Unfunded actuarial accrued liability was amortized as a level percent of payroll over 25 years to determine the actuarial determined contribution. This period is consistent with the policy established by the Retirement Board in October 1996.

Active member payroll was projected to increase 3.00% per year for the purpose of determining the contribution needed to amortize the unfunded actuarial accrued liability.

The actuarial value of assets used for funding purposes is derived as follows: prior year actuarial value of assets is increased by contributions and expected investment income and reduced by refunds, benefit payments and expenses. To this amount 25% of the difference between expected and actual investment income for each of the previous four years is added.



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Assumptions Used for the Valuation (effective with June 30, 2018 Valuation, except as otherwise noted)

Assumed Rate of Investment Return. 7.25% per annum net of investment expenses. The administrative expenses are loaded to the normal cost developed in each annual valuation.

Administrative Expenses. 0.50% of payroll.

Price Inflation. 2.50% per annum, compounded annually.

Real Investment Return. 4.75% over price inflation (4.00% over wage growth). This is the expected rate of return (net of investment expenses) above the rate of price inflation.

Annual Post-retirement Cost of Living Adjustment Rate. 1.60% per year beginning 7/1/2023.

Payroll Growth. 3.00% per year.

Salary Increases. Salary increases occur in recognition of (i) individual merit and longevity, (ii) inflation-related depreciation of the purchasing power of salaries, and (iii) other factors such as productivity gains and competition from other employers for personnel. Sample rates follow:

Attributable to:	Annual Rates of Salary Increase for Sample Years of Service				
	1	5	10	15	20
General Increase in Wage Level Due to:					
Inflation	2.50%	2.50%	2.50%	2.50%	2.50%
Other Factors	0.75	0.75	0.75	0.75	0.75
Increase Due to Merit/Longevity:					
State General	5.00	1.25	0.50	0.00	0.00
State Police	10.25	5.75	1.25	1.25	1.25
State Corrections	9.75	3.50	2.00	1.50	1.50
Municipal General*	2.50	1.50	0.50	0.00	0.00
Municipal Police	7.75	2.75	1.50	0.75	0.75
Municipal Fire	7.75	2.75	1.50	1.25	1.25

* Includes Municipal Detention Officers



Appendix B: Summary of Actuarial Assumptions and Methods

In the following schedules, State Corrections includes Adult Corrections Officers, Juvenile Corrections Officers and Municipal Detention Officers unless otherwise noted.

Mortality Assumption. The mortality assumptions are based on the RPH-2014 Blue Collar mortality table with female ages set forward one year. Future improvement in mortality rates is assumed using 60% of the MP-2017 projection scale generationally. For non-public safety groups, 25% of in-service deaths are assumed to be duty related and 35% are assumed to be duty-related for public safety groups.

Rates are shown for sample ages in the following schedule. Note that sex distinct mortality rates are used solely for determining the funded status and contribution rate adequacy. All benefit amounts are based on merged gender mortality rates.

Sample Mortality Rates (Base Rates)								
Pre-Commencement			Post-Commencement			Post-Commencement		
Age	Male	Female	Age	Male	Female	Age	Male	Female
25	0.000733	0.000244	35	0.001793	0.001169	80	0.053460	0.042932
30	0.000717	0.000317	40	0.002156	0.001611	85	0.088524	0.072752
35	0.000797	0.000417	45	0.003275	0.002671	90	0.146859	0.125111
40	0.000958	0.000598	50	0.005604	0.004235	95	0.223428	0.197901
45	0.001455	0.001013	55	0.007342	0.005165	100	0.313988	0.291040
50	0.002490	0.001685	60	0.009893	0.006890	105	Disabled retirees use the same assumption as healthy lives.	
55	0.004071	0.002510	65	0.014089	0.010092	110		
60	0.006743	0.003606	70	0.021101	0.016038	115		
65	0.011612	0.005456	75	0.032952	0.026199	120		



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Retirement.

First Eligibility Rates: These rates are used to measure the probability of members retiring in the first year eligible for retirement at the indicated ages.

Sample Percent Retiring at First Eligibility by Age									
Ages	State General		State Police		State	Municipal General		Municipal	Municipal
	Male	Female	Tier 1	Tier 2	Corrections	Male	Female	Police	Fire
40	25%	25%	25%	40%	40%	20%	25%	30%	30%
45	25	25	25	40	40	20	25	30	25
50	25	25	25	40	40	20	25	30	20
55	25	25	25	40	40	20	25	30	25
60	30	25	50	40	35	15	25	30	20
65	25	25	100	100	35	15	25	30	20
70	25	20			100	20	15	100	100
75	25	20				20	15		
80	100	100				100	100		

Subsequent Eligibility Rates: These rates are used to measure the probability of members retiring after the first year eligible for retirement at the indicated ages.

Sample Percent Retiring After First Eligibility by Age*										
Ages	State General		State Police**		State	Municipal General		Municipal Police***		Municipal
	Male	Female	Tier 1	Tier 2	Corrections	Male	Female	Tier 1	Tier 2	Fire
40	25%	25%	35%	20%	20%	20%	25%	35%	40%	30%
45	25	25	35	20	20	20	25	35	40	25
50	25	25	35	20	20	20	25	35	40	20
55	25	25	35	20	20	20	25	35	40	25
60	20	35	50	20	20	15	15	35	30	20
65	30	35	100	100	20	15	10	30	30	20
70	25	20			100	20	15	100	100	100
75	25	20				20	15			
80	100	100				100	100			

* Rates are 70% at 30 years of service for all ages except State General and Municipal General Tier 2 uses 75% at 36 years of service and Municipal Police Tier 1 uses 75% at 26 years of service.

** Rates for State Police Tier 1 are 45% at 27 years of service, 55% at 28 years of service, and 65% at 29 years of service.

*** Rates for Municipal Police Tier 1 are 35% at 21 years of service, 40% at 22 years of service, and 45% at 23 years of service, 55% at 24 years of service, and 65% at 25 years of service.

*** Rates for Municipal Police Tier 2 are 35% at 25 years of service, 40% at 26 years of service, and 45% at 27 years of service, 55% at 28 years of service, and 65% at 29 years of service.



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Withdrawal from Active Membership. The rates are used to measure probabilities of active members terminating for a reason other than disability or death. The rates do not apply to members who are within the retirement rate range. Assumptions for State General and Municipal General are gender distinct and both based on age and service. Assumptions for all other plans are not gender distinct and are service related only; these rates do not vary by age.

State General Males					
Rates of Active Members Terminating During Year					
	Sample Service (Yr):				
Sample Ages	2	4	6	8	10+
20	18.76%	10.86%	8.21%	7.78%	5.11%
25	17.72	11.06	8.10	7.07	4.65
30	16.45	11.27	7.97	6.18	4.13
35	15.31	10.81	7.59	5.58	3.89
40	14.30	9.97	7.08	5.40	3.86
45	13.55	9.06	6.63	5.40	3.86
50	13.26	8.45	6.49	5.40	3.86
55	13.26	8.37	6.49	5.40	3.86
60	13.26	8.37	6.49	5.40	3.86
65	13.26	8.37			
70	13.26	8.37			

State General Females					
Rates of Active Members Terminating During Year					
	Sample Service (Yr):				
Sample Ages	2	4	6	8	10+
20	18.13%	11.95%	8.22%	6.05%	4.83%
25	17.76	11.95	8.02	5.81	4.25
30	17.28	11.89	7.81	5.54	3.55
35	16.34	11.23	7.45	5.28	3.46
40	15.22	10.24	6.99	5.06	3.46
45	14.19	9.20	6.58	4.95	3.46
50	13.52	8.55	6.45	4.80	3.46
55	13.37	8.50	6.45	4.70	3.46
60	13.37	8.50	6.45	4.70	3.46
65	13.37	8.50			
70	13.37	8.50			



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Withdrawal from Active Membership (cont.)

Municipal General Males					
Rates of Active Members Terminating During Year					
	Sample Service (Yr):				
Sample Ages	2	4	6	8	10+
20	21.70%	14.59%	11.29%	8.93%	8.54%
25	20.00	13.52	10.26	8.05	7.32
30	17.73	12.04	8.96	6.94	5.69
35	15.77	10.65	8.01	6.20	4.61
40	14.06	9.37	7.29	5.73	3.92
45	12.80	8.39	6.87	5.58	3.65
50	12.20	8.01	6.79	5.58	3.65
55	12.18	8.01	6.79	5.58	3.65
60	12.18	8.01	6.79	5.58	3.65
65	12.18	8.01			
70	12.18	8.01			

Municipal General Females					
Rates of Active Members Terminating During Year					
	Sample Service (Yr):				
Sample Ages	2	4	6	8	10+
20	24.40%	17.77%	14.41%	11.94%	7.51%
25	21.96	16.06	12.80	10.32	6.38
30	18.85	13.77	10.63	8.16	4.94
35	16.69	11.96	9.08	6.70	4.09
40	15.16	10.49	7.84	5.74	3.67
45	14.28	9.49	6.50	5.31	3.62
50	14.01	9.14	6.50	5.30	3.62
55	14.01	9.14	6.50	5.30	3.62
60	14.01	9.14	6.50	5.30	3.62
65	14.01	9.14			
70	14.01	9.14			



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Withdrawal from Active Membership (cont.)

Service Based Rates of Active Members Terminating During Year					
All Ages	Sample Service (Yr):				
	1	3	5	7	8+
State Police	8.00%	7.00%	4.00%	4.00%	4.00%
State Corrections	20.00	16.00	9.00	8.00	5.75
Municipal Detention	22.00	16.00	10.00	10.00	6.00
Municipal Police	14.00	9.50	6.80	5.15	3.50
Municipal Fire	10.00	7.50	5.00	3.30	2.75

Rates of Disability. The rates are used to measure the probabilities of active members becoming disabled. Rates for sample ages follow. For non-public safety groups, 25% disabilities are assumed to be duty related and 35% are assumed to be duty-related for public safety groups.

Rates Becoming Disabled at Indicated Ages (State Division)				
Sample Ages	State General		State	State
	Male	Female	Police	Corrections
25	0.02%	0.02%	0.03%	0.14%
30	0.04	0.03	0.06	0.16
35	0.08	0.06	0.08	0.21
40	0.13	0.12	0.21	0.27
45	0.24	0.20	0.25	0.46
50	0.41	0.39	0.41	0.90
55	0.57	0.61	0.95	1.40
60	0.74	0.73	1.39	1.88
65	0.75	0.73	1.39	1.88

Rates Becoming Disabled at Indicated Ages (Municipal Division)					
Sample Ages	Municipal General		Municipal	Municipal	Municipal
	Male	Female	Detention	Police	Fire
25	0.03%	0.04%	0.06%	0.01%	0.02%
30	0.06	0.04	0.10	0.01	0.02
35	0.09	0.04	0.15	0.05	0.02
40	0.13	0.06	0.22	0.11	0.08
45	0.18	0.14	0.32	0.18	0.08
50	0.30	0.25	0.51	0.28	0.33
55	0.49	0.39	0.85	0.46	0.33
60	0.60	0.51	1.04	0.74	1.17
65	0.62	0.59	1.07	1.08	1.17



Appendix B: Summary of Actuarial Assumptions & Methods

Miscellaneous and Technical Assumptions

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses. It is assumed that spouses have no eligible children for purposes of death-in-service benefits.
Pay Increase Timing:	Beginning of plan year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	All decrements are assumed to occur at the beginning of the plan year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Neither disability nor withdrawal decrements operate during retirement eligibility.
Loads:	Retiree liabilities were increased by 1% to account for the pop-up provision.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report and the actual payroll payable at the time contributions are made.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.
Data Changes:	For missing dates of birth for active members, we assumed to enter the system at the average entry age. For retiree records with a joint and survivor option and a missing beneficiary date of birth, the beneficiary was assumed to be 3 years younger if the member was male and 3 years older if the member was female.



Appendix B: Summary of Actuarial Assumptions & Methods

Definitions of Technical Terms

Actuarial Accrued Liability. The difference between the actuarial present value of future benefits payments and the actuarial present value of future normal costs.

Actuarial Cost Method. A mathematical procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal cost and actuarial accrued liability.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.

Amortization. Paying off an interest-discounted amount with periodic payments of interest and principal – as opposed to paying off with a lump sum payment.

Experience Gain (Loss). The difference between actual actuarial costs and anticipated actuarial costs – during the period between two valuation dates.

Normal Cost. The actuarial cost allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and the actuarial value of assets. Sometimes referred to as “unfunded accrued liability.”



Appendix C: Summary of Plan Provisions

Benefit Tier

Effective July 1, 2013, Senate Bill 27 establishes two tiers of benefits under each PERA coverage plan:

Tier 1

- Current active members employed by a PERA affiliate on June 30, 2013
- Inactive members who did not receive a refund and have employee contributions on account on June 30, 2013
- Currently retired or will retire on or before June 30, 2013

Note: State and Municipal General members hired between July 1, 2010 and June 30, 2013 are grandfathered into Tier 1 coverage plans.

Tier 2

- Active members first hired on or after July 1, 2013
- Members who received a refund of employee contributions on or before June 30, 2013 and return to work for a PERA affiliate on or after July 1, 2013

Normal Retirement Eligibility Conditions

Tier 1

Applicable to all members:

- Any age with 25 or more years of credited service; or
- Age 60 or older with 20 or more years of credited service; or
- Age 61 or older with 17 or more years of credited service; or
- Age 62 or older with 14 or more years of credited service; or
- Age 63 or older with 11 or more years of credited services or
- Age 64 or older with 8 or more years of credited service; or
- Age 65 or older with 5 or more years of credited service.

Applicable to Municipal Police (Plans 3, 4, & 5) and Municipal Fire (Plans 3, 4, & 5) members:

- Any age with 20 or more years of credited service



Appendix C: Summary of Plan Provisions

Normal Retirement Eligibility Conditions (cont.)

Tier 2

Applicable to State General and Municipal General (Plan 1-4) members:

- Age 65 or older with 5 or more years of credited service; or
- Any age if the sum of the member's age and years of credited service equals at least 85, provided member has at least 5 years of credited service.

Applicable to State Police Officers, Adult Correctional Officers, Peace Officers, Juvenile Correctional Officers, Municipal Police, Municipal Fire, and Municipal Detention Officers:

- Age 60 or older with 5 or more years of credited service; or
- Any age with 25 or more years of credited service

Normal Retirement Pension Amount

The amount of normal retirement pension is based on:

- Final average salary:
 - For Tier 1 members, the average of salary for the 36 consecutive months of credited service producing the largest average;
 - For Tier 2 members, the average of salary for the 60 consecutive months of credited service producing the largest average;
- Credited service (years and months); and the
- Coverage plan.



Appendix C: Summary of Plan Provisions

The pension accrual factor and maximum pension, as a percent of final average salary, under each coverage plan are shown below:

Coverage Plan	Pension Factor Per Year of Credited Service		Maximum Pension as Percent of Final Average Salary
	Tier 1	Tier 2	Tier 1 & Tier 2
State General Member Coverage Plan 3	3.0%	2.5%	90%
Peace Officers Coverage Plan 3	3.0	3.0	90
State Police and Adult Corrections Officers Member Coverage Plan 1	3.0	3.0	90
Hazardous Duty (Juvenile Corrections Officer) Coverage Plan 2	3.0	3.0	90
Municipal General Member Coverage Plan 1	2.0	2.0	90
Coverage Plan 2	2.5	2.0	90
Coverage Plan 3	3.0	2.5	90
Coverage Plan 4	3.0	2.5	90
Municipal Detention Officer Coverage Plan 1	3.0	3.0	90
Municipal Police Member Coverage Plan 1	2.0	2.0	90
Coverage Plan 2	2.5	2.0	90
Coverage Plan 3	2.5	2.0	90
Coverage Plan 4	3.0	2.5	90
Coverage Plan 5	3.5	3.0	90
Municipal Fire Member Coverage Plan 1	2.0	2.0	90
Coverage Plan 2	2.5	2.0	90
Coverage Plan 3	2.5	2.0	90
Coverage Plan 4	3.0	2.5	90
Coverage Plan 5	3.5	3.0	90



Appendix C: Summary of Plan Provisions

Vested Termination of Membership (Employment)

Termination of employment and membership with at least 5 years of credited service. Accumulated member contributions must be left on deposit. Payment of the pension is available upon eligibility for normal retirement. In addition, certain disability and survivor pension provisions apply.

Normal and Optional Forms of Payment

The normal form of payment is for life. Optional contingent survivor beneficiary forms of payment are available on an actuarial equivalent basis. Total pension payments can never be less than the member's accumulated contributions.

Survivor Pensions – Death in the Line of Duty

Pensions are paid to the eligible spouse and eligible children if survivor coverage has not been elected under the Elective Survivor Pension Beneficiary provision. The amount of pension payable for life to an eligible spouse is the greater of 1) 50% of final average salary or 2) the accrued normal retirement pension reduced for option B election. The amount of pension payable to each eligible child is an equal share of 25% of final average salary. If there is not an eligible spouse or the eligible spouse dies, and if there are 2 or more eligible children, the amount of pension payable to each eligible child is an equal share of 50% of final average salary. An eligible child is an unmarried natural or adopted child who is under age 18. A child's pension terminates upon death, marriage or reaching age 18. The pension of any remaining eligible children is recalculated whenever a child's pension is terminated.

Survivor Pensions – Death Not in the Line of Duty

Requires 5 years of credited service. Benefit applies to members and vested former members who have not elected coverage under the Elective Survivor Pension Beneficiary provision. Pensions are paid to an eligible spouse OR eligible children. The amount of pension payable for the life of an eligible spouse is the greater of 1) 30% of final average salary or 2) accrued normal retirement pension reduced for option B election. An eligible child pension is paid if there is not an eligible spouse or following the death of an eligible spouse. The pension is payable to each child in equal shares. An eligible child is an unmarried natural or adopted child who is under age 18. A child's pension terminates upon death, marriage or reaching age 18. The pension of any remaining eligible children is recalculated whenever a child's pension is terminated.



Appendix C: Summary of Plan Provisions

Elective Survivor Beneficiary Pension

Applicable to members with 5 years of credited service. Also applicable to vested former members who have elected option B and designated a survivor pension beneficiary who has an insurable interest. The amount of pension is the amount of accrued normal retirement pension under optional form of payment B (100% continuation to beneficiary).

Disability Retirement

Applicable to members with 5 years of credited service. Also applicable to vested former members. The credited service requirement is waived if the disability is incurred in line of duty. The amount of disability pension is the accrued normal retirement pension at time of disability retirement. If the disability is in line of duty, the credited service used is the amount that would have been acquired when first eligible for normal retirement.

Cost-of-Living Increases

Effective July 1, 2020, there will be no COLA increases for fiscal years 2021, 2022, and 2023 (July 1, 2020, July 1, 2021, and July 1, 2022). In lieu of these COLAs, an annual non-compounding additional payment equal to 2% of annual benefit as of June 30, 2020 (inclusive of all past COLAs) will be payable.

Beginning July 1, 2023 and each July 1 thereafter, the COLA increase will be determined as an amount equal to the smoothed investment rate of return on the actuarial value of assets on June 30 of the preceding calendar year, less the COLA “hurdle rate,*” multiplied by the funded ratio on June 30 of the preceding calendar year; or 0.5%, whichever is greater, subject to the following:

- If the funded ratio of the fund is less than 100% on June 30 of the preceding calendar year, the COLA amount shall not exceed 3.0%.
- If the funded ratio of the fund is greater than or equal to 100% on June 30 of the preceding calendar year, the COLA amount shall not exceed 5.0%.
- The minimum COLA amount for any year will be 0.5%.

*The COLA “hurdle rate” is the investment rate of return required to fund a COLA in excess of 0.5% as determined by the fund’s actuaries.



Appendix C: Summary of Plan Provisions

Pensions are increased by the COLA amount determined above each July 1 subject to the following eligibility periods:

- Retirees who have been retired for at least 2 full calendar years.
- Retirees who attained at least age 65 and have been retired for at least 1 full calendar year.
- Disabled retirees who have been retired for at least 1 full calendar year.
- Survivor beneficiaries who have received a survivor pension for at least 2 full calendar years.
- Survivor beneficiaries of a deceased retiree who otherwise would have been retired for at least 2 full calendar years.

For certain retirees, pensions are increased each July 1 by 2.5% subject to the eligibility periods listed above, provided the conditions below are met:

- Retirees who retired with at least 25 years of service and whose annual pension is \$25,000 or less.
- Disabled retirees whose annual pension is \$25,000 or less.
- Retirees and survivor beneficiaries who attained at least age 75 prior to July 1, 2021.

Service Credit

Tier 1 Members in the State Police and Adult Corrections Officers Coverage Plan and members in the Municipal Detention Officers Coverage Plan receive 1.2 years of credited service for each year of service rendered. All other members receive 1.0 year of credited service for each year of service rendered.



Appendix C: Summary of Plan Provisions

Contributions by Members and Employers

Contributions by members and affiliated public employers are at the following rates shown below. The table reflects the changes resulting from the passage of Senate Bill 72.

Coverage Plan	Percent of Salary Member	Contribution Rate Employer
State Division¹		
State General Member Coverage Plan 3 ²	9.92%	18.24%
State Police Member and Adult Correctional Officer Member Coverage Plan 1	9.10	25.50
Hazardous Duty (Juvenile Corrections) Member Coverage Plan 2 ²	7.28	27.37
Municipal Division^{3,4}		
Municipal General Member Coverage Plan 1	8.50	7.65
Municipal General Member Coverage Plan 2	10.65	9.80
Municipal General Member Coverage Plan 3	14.65	9.80
Municipal General Member Coverage Plan 4	17.15	12.30
Municipal Detention Officer Member Coverage Plan 1	18.15	17.30
Municipal Police Member Coverage Plan 1	8.50	10.65
Municipal Police Member Coverage Plan 2	8.50	15.65
Municipal Police Member Coverage Plan 3	8.50	19.15
Municipal Police Member Coverage Plan 4	13.85	19.15
Municipal Police Member Coverage Plan 5	17.80	19.15
Municipal Fire Member Coverage Plan 1	9.50	11.65
Municipal Fire Member Coverage Plan 2	9.50	18.15
Municipal Fire Member Coverage Plan 3	9.50	21.90
Municipal Fire Member Coverage Plan 4	14.30	21.90
Municipal Fire Member Coverage Plan 5	17.70	21.90

Interest is credited to member contributions on each June 30 at the rates set annually by the Retirement Board. Effective July 1, 2012, the interest crediting rate for member contributions is 2%.

¹For employees whose annual salary is \$25,000 or less, the employee contribution rates shown above are reduced by 2.0%.

²Employee and employer rates will increase by 0.5% of payroll effective July 1, 2022, with another 0.5% increase each July 1 through FY 2024.

³For employees whose annual salary is \$25,000 or less, the employee contribution rates shown above are reduced by 1.50%.

⁴For all Municipal Coverage Plans, employee and employer rates will increase by 0.5% of payroll effective July 1, 2022, with another 0.5% increase each July 1 through FY 2026.



Appendix D: Risk Considerations

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the June 30, 2019 actuarial valuation.

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- external risks such as the regulatory and political environment.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates. The following discussion includes a few exhibits which summarize some historical information to help indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

The investment return on assets is the most obvious risk – and usually the primary risk – to funding a pension plan. To illustrate the magnitude of this risk, the following chart shows the Asset Volatility Ratio (AVR), defined as the fair value of assets divided by covered payroll.



Appendix D: Risk Considerations

HISTORICAL ASSET VOLATILITY RATIOS

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Actuarial Valuation Date	Market Value of Assets (\$ Millions)	Covered Payroll (\$ Millions)	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
6/30/2010	\$9,997.9	\$1,993.5	5.02	3.24%
6/30/2011	11,970.7	1,935.0	6.19	4.00%
6/30/2012	11,574.9	1,994.3	5.80	3.74%
6/30/2013	12,678.2	2,049.7	6.19	4.00%
6/30/2014	14,392.9	2,102.3	6.85	4.42%
6/30/2015	14,218.3	2,248.3	6.32	4.08%
6/30/2016	13,788.6	2,135.2	6.46	4.17%
6/30/2017	14,757.5	2,204.4	6.69	4.32%
6/30/2018	15,168.1	2,221.1	6.83	4.41%
6/30/2019	15,464.5	2,271.8	6.81	4.40%
6/30/2020	14,650.6	2,410.0	6.08	3.93%
6/30/2021	17,764.1	2,388.5	7.44	4.80%

*The impact of asset smoothing is not reflected in the impact on the Actuarial Contribution Rate (ACR). Current year assumptions are used for all years shown.

The assets as of June 30, 2021 are about 7.4 times the amount of covered payroll. Consequently, underperforming the investment return assumption by 10.00% (i.e., earn -2.75% for one year) is equivalent to about 74% of payroll. While the actual impact of this experience in the first year is mitigated by the asset smoothing method and amortization of the UAL, this table illustrates the risk associated with volatile investment returns. Such an event in one year would be expected to increase the actuarial contribution rate by 4.80% of payroll.



Appendix D: Risk Considerations

HISTORICAL CASH FLOWS

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that may cause significant concerns. This is a metric the investment consultants usually focus on when evaluating the asset allocation. The maturity of the system is the main contributor to the situation.

<u>Fiscal</u> <u>Year End</u>	<u>Market Value</u> <u>of Assets</u> <u>(MVA)</u>	<u>Contributions</u>	<u>Benefit Payments</u> <u>and Expenses</u>	<u>Net Cash Flow</u>	<u>Net Cash Flow</u> <u>as a Percent</u> <u>of MVA</u>
6/30/2010	\$ 9,997,858,552	531,740,943	685,224,059	(153,483,116)	-1.54%
6/30/2011	\$ 11,970,717,468	509,693,877	758,505,175	(248,811,298)	-2.08%
6/30/2012	\$ 11,574,935,613	527,945,980	824,595,317	(296,649,337)	-2.56%
6/30/2013	\$ 12,678,243,074	516,919,500	886,346,073	(369,426,573)	-2.91%
6/30/2014	\$ 14,392,853,706	544,249,023	961,424,665	(417,175,642)	-2.90%
6/30/2015	\$ 14,218,284,887	573,621,240	995,202,195	(421,580,955)	-2.97%
6/30/2016	\$ 13,788,598,482	587,817,775	1,065,994,548	(478,176,773)	-3.47%
6/30/2017	\$ 14,757,468,488	604,244,744	1,138,351,604	(534,106,860)	-3.62%
6/30/2018	\$ 15,168,116,441	602,297,355	1,192,333,605	(590,036,250)	-3.89%
6/30/2019	\$ 15,464,506,140	621,222,546	1,257,796,912	(636,574,366)	-4.12%
6/30/2020	\$ 14,650,589,800	719,405,773	1,310,406,573	(591,000,800)	-4.03%
6/30/2021	\$ 17,764,109,282	688,625,690	1,363,606,673	(674,980,983)	-3.80%



Appendix D: Risk Considerations

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. Historically, PERA has been funded with fixed contribution rates by both employees and the employer. In 2020, Senate Bill 72 implemented contribution increases to both employer and employee contribution rates. However, the combined statutory contribution rates have failed to meet the actuarial required contribution in each of the past ten years, when looking to fund the System over 25 years. We would also note that with the adoption of SB 72 and as more members enter the new lower cost Tier 2 benefit structures, the System is expected to be fully funded in the future, if all assumptions are met.

Funding a retirement system with fixed contribution rates creates some unique funding challenges. Given the extreme volatility associated with the underlying investments of the portfolio, wide variations in the actual return on the market value of assets is expected. However, when it occurs it can change the long-term funding outlook from positive to negative or vice versa. By the time a trend has been identified, it is possible for the funded status of the System to have seriously declined, requiring more substantive resources to compensate for the investment losses. A key change in the provisions is the addition of the COLA increase that is dependent on the funded ratio and actual investment returns of the System. This provision, which is effective July 1, 2023, should help mitigate some contribution rate risk and funded ratio volatility.

A key demographic risk for all retirement systems, including PERA, is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.



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PERA

Public Employees
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**New Mexico Judicial Retirement Fund
Annual Actuarial Valuation
as of June 30, 2021**





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The experience and dedication you deserve

October 28, 2021

The Retirement Board
Public Employees Retirement Association
Santa Fe, New Mexico

Members of the Board:

We have conducted the annual actuarial valuation of the New Mexico Judicial Retirement Fund as of June 30, 2021; the results of the valuation are contained in the following report. The annual valuation is used to determine the sufficiency of the statutory contribution rates and, if necessary, the amount required to fund the annual normal cost and fully amortize the unfunded actuarial accrued liability with annual payments over a 25-year period. The results of this valuation apply to the fiscal year beginning July 1, 2021 and ending June 30, 2022 (FY 2022). Information contained in our report for plan years ending prior to June 30, 2010 is based upon valuations performed by the Fund's prior actuary.

In performing the valuation, we relied on data supplied by the Public Employees Retirement Association (PERA) and performed limited tests on the data for consistency and reasonableness. In determining the Fund's liabilities, future events, such as investment returns, deaths, retirements, etc., are anticipated based upon the set of actuarial assumptions as approved by the Board. There were no assumption changes since the last valuation. The valuation reflects the passage of Senate Bill 122, which provides for a monthly distribution of \$100,000 to the Fund until achieving 100% funded status.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: fund experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This actuarial valuation was performed to determine the adequacy of statutory contributions to fund the plan. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.



Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Appendix D of this report provides a discussion of the risk considerations for the Fund in compliance with the guidance provided under Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51).

Annual actuarial valuations are performed for the Fund which re-measure the assets and liabilities and compute a new actuarially determined contribution. The Fund also has experience studies performed every four to five years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and periodic experience studies are practical ways to monitor and reassess risk.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise in the future of any adjustments that we believe would be appropriate.

This is to certify that the undersigned are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Fund.

Respectfully submitted,

A blue ink signature of John J. Garrett, written in a cursive style.

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

A blue ink signature of Bryan Hoge, written in a cursive style.

Bryan Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



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Section I: Board Summary



The table below summarizes the results of the June 30, 2021 actuarial valuation as compared with the prior year.

Table I-1: Comparative Summary of Principal Results

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 17,165,992	\$ 16,490,136
Total Valuation Payroll	\$ 17,680,972	\$ 16,984,840
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 45,975,720	\$ 48,544,753
Retired Members and Survivors	<u>130,559,770</u>	<u>122,210,894</u>
Total	\$ 176,535,490	\$ 170,755,647
Actuarial Value of Assets (AVA)	\$ 94,024,914	\$ 91,269,164
Funded Ratio	53.3 %	53.5 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ 82,510,576	\$ 79,486,483
Calculation of Required Contribution (Fiscal Year Ending)	June 30, 2022	June 30, 2021
Normal Cost		
Retirement	16.23 %	16.76 %
Termination	3.40 %	3.56 %
Pre-Retirement Survivors	0.99 %	1.03 %
Disability	<u>0.00 %</u>	<u>0.00 %</u>
Total Normal Cost	20.62 %	21.35 %
Administrative Expenses	0.50 %	0.50 %
UAAL 25-Year Amortization Rate	30.13 %	30.21 %
Reduction for SB122 Distribution	<u>(6.79)%</u>	<u>(7.07)%</u>
Actuarially Determined Contribution Rate	44.46 %	44.99 %
Actuarially Determined Contribution Amount	\$ 7,861,005	\$ 7,641,728
Statutory Contribution Rates		
Employer Contribution Rate	15.00 %	15.00 %
Expected Docket Fees	14.85 %	14.71 %
Member Contribution Rate	<u>10.50 %</u>	<u>10.50 %</u>
Total Statutory Rate	40.35 %	40.21 %
Expected Statutory Amount	\$ 7,134,272	\$ 6,829,604
Amortization Period Based on Statutory Rates*	41	44
Deficiency in Statutory Rate	4.11%	4.78%
Deficiency in Expected Statutory Amount	\$ 726,733	\$ 812,124

*The June 30, 2020 Amortization Period was 44 including SB122 amounts and infinite excluding SB122 amounts.



Section I: Board Summary

Summary of Key Findings

The funding policy for the Fund determines the employer contribution required to satisfy the annual normal cost plus an amount to fully amortize the unfunded actuarial accrued liability (UAAL) over a period not to exceed 25 years. This resulting contribution amount is compared to the expected statutory contribution amount to assess the sufficiency of the statutory contribution. The actuarially determined contribution rate for the Fund in the fiscal year ending June 30, 2022 (FY 2022) is 44.46% of covered payroll. This is a decrease of 0.53% of payroll from the total contribution requirement of 44.99% of covered payroll from the prior valuation.

The total normal cost contribution as a percent of valuation payroll decreased from 21.35% to 20.62%. The UAAL increased from \$79.5 million to \$82.5 million and the annual amortization amount decreased from 30.21% to 30.13% of payroll. The funded ratio of the Fund has decreased from 53.5% to 53.3%. The UAAL and funded ratio are reconciled in Table IV-3. We note the following key findings:

- The Fund experienced an actuarial gain on Fund assets of \$1,470,954 for the plan year related to the 7.25% expected investment return on the actuarial value of assets. This represents a 0.9% increase to the funded ratio. Table III-3 provides the calculation of the investment loss for this year.
- In addition, the Fund experienced a net increase of \$2,637,037 in liabilities due to non-investment related experience losses. The majority of this increase was due to granting a 2% COLA for the prior year.
- The Fund received \$183,582 less in contributions than expected. This represents a 0.1% decrease to the funded ratio.
- Senate Bill 122 provides for a monthly distribution of \$100,000 to the Fund until 100% funded. These changes resulted in a decrease of 6.79% to the actuarially determined contribution rate.

Section II of the report provides summarized information on the membership data used in the valuation. Section III covers the Fund's assets and Section IV covers the Fund's liabilities. The results of the valuation are provided in Section V and the accounting information is in Section VI. The appendices provide additional information on A) the Fund members, B) the actuarial assumptions and methods, and C) the summary of the benefit provisions of the Fund. It is important to note that all information contained in this report for periods prior to June 30, 2010 were produced by a prior actuarial consulting firm.



Section II: Membership Data

Data regarding the membership of the Fund for use in the valuation were furnished by PERA. The following tables summarize the membership data as of June 30, 2021 compared with that reported for the prior year.

Table II-1: Summary of Membership Data as of June 30, 2021

Group	June 30, 2021	June 30, 2020
Total Active Members	128	123
Inactive Members		
Deferred Vested	28	25
Other	<u>1</u>	<u>2</u>
Total Inactive Members	29	27
Retirees		
Service*	155	146
Disabled	2	2
Beneficiaries	<u>45</u>	<u>45</u>
Total Retirees	202	193
Totals	359	343

*Includes 12 Co-Payees as of June 30, 2021 and 10 Co-Payees as of June 30, 2020.

Table II-2: Historical Summary of Active Membership Valuation Data

Valuation Date	Number	Annual Payroll	Annual Average Pay	% Change in Average Pay
6/30/2021	128	\$ 17,165,992	\$ 134,109	0.03 %
6/30/2020	123	16,490,136	134,066	6.42 %
6/30/2019	124	15,621,802	125,982	(0.44)%
6/30/2018	125	15,817,424	126,539	6.59 %
6/30/2017	124	14,721,304	118,720	(0.01)%
6/30/2016	127	15,078,274	118,727	(0.04)%



Section II: Membership Data

Table II-3: Deferred Members, Retired Members and Beneficiaries as of June 30, 2021

Group	Number	Total Annual Benefits	Average Annual Benefits	Average Age
Deferred Vested	28	\$ 1,008,349	\$ 36,012	57.43
Retirees				
Service*	155	10,504,669	67,772	72.02
Disability	2	74,659	37,330	70.00
Survivors	45	2,166,289	48,140	76.18
Retiree Totals	202	\$ 12,745,617	\$ 63,097	72.93
Total	230	\$ 13,753,966	\$ 59,800	71.03

*Includes 12 Co-Payees as of June 30, 2021.



Section III: Fund Assets

The following tables provide information on the Fund's assets at market value and the development of the actuarial value of assets.

Table III-1: Market Value Reconciliation

	June 30, 2021	June 30, 2020
Beginning of Year Market Value	\$ 84,870,503	\$ 91,759,352
Audit Adjustment	-	-
Revised Beginning of Year Market Value	\$ 84,870,503	\$ 91,759,352
Revenues:		
Member Contributions	1,838,186	1,783,295
Appropriations	1,200,000	-
Docket Fees	2,625,987	2,499,127
Employer Contributions	1,800,395	2,184,003
Purchase of Service	-	-
Investment Income		
Interest, dividends, etc.	2,290,459	1,737,006
Realized/Unrealized gains (losses)	19,682,168	(2,636,746)
Security lending	11,409	17,761
Other Income	-	-
Settlement Award	-	-
Total Revenues	\$ 29,448,604	\$ 5,584,446
Expenditures:		
Benefit Payments	12,538,013	12,013,293
Refunds of Member Contributions	1,273	7,599
Investment Expenses	482,282	370,497
Administrative Expenses	70,969	81,906
Total Expenditures	\$ 13,092,537	\$ 12,473,295
End of Year Market Value	\$ 101,226,570	\$ 84,870,503

The market value rate of return for the plan year is 26.13%. The Fund's cash flow is -5.53% as a percentage of average market value compared to -6.38% last year.

Section III: Fund Assets



The actuarial value of assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The actuarial value of assets has been calculated by spreading the recognition of unexpected investment income over four years. The amount of unexpected investment income in each year is the difference between expected actuarial value investment income and actual market value investment income. Table III-2 below provides the calculation of the actuarial value of assets.

Table III-2: Development of Actuarial Value of Assets as of June 30, 2021

1. Actuarial Value Beginning of Year	\$	91,269,164
2. Market Value End of Year		101,226,570
3. Market Value Beginning of Year		84,870,503
4. Cash Flow		
a. Contributions	\$	6,264,568
b. Appropriations		1,200,000
c. Service Purchases		-
d. Benefit Payments and Refunds		(12,539,286)
e. Administrative Expenses		(70,969)
f. Other		-
g. Net	\$	(5,145,687)
5. Investment Income		
a. Market Total (2 - 3 - 4g)	\$	21,501,754
b. Assumed Rate		7.25 %
c. Amount for Immediate Recognition		6,430,483
d. Amount for Phased-In Recognition		15,071,271
6. Phased-In Recognition of Investment Income		
a. Current Year: $0.25 * 5d$	\$	3,767,818
b. First Prior Year (2019/2020)	\$ (7,724,043) x 25%	(1,931,011)
c. Second Prior Year (2018/2019)	\$ (959,114) x 25%	(239,779)
d. Third Prior Year (2017/2018)	\$ (504,294) x 25%	(126,074)
e. Total Recognized Investment Gain	\$	1,470,954
7. Audit Adjustment	\$	-
8. Actuarial Value End of Year (1 + 4g + 5c + 6e + 7)	\$	94,024,914
9. Difference Between Market & Actuarial Values (2 - 8)	\$	7,201,656
10. Rate of Return on Actuarial Value		8.91 %
11. Actuarial Value of Assets as a % of Market Value of Assets		92.9 %



Section III: Fund Assets

The actuarial valuation assumes the rate of investment return on the assets of the Fund is 7.25% annually. This assumption is based upon the reasonable long-term expected return on the assets. In each year, the Fund will experience actuarial gains and losses due to the actual investment return of the assets. Table III-3 provides the calculation of the gain or loss due to the investment experience on the actuarial value of assets for the year ended June 30, 2021.

Table III-3: Actuarial Investment Gain (Loss) for the Year Ended June 30, 2021

1. Beginning of Year Actuarial Value of Assets (AVA)	\$ 91,269,164
2. Employee and Employer Contributions	6,264,568
3. Appropriations	1,200,000
4. Benefit Payments	(12,539,286)
5. Administrative Expenses	(70,969)
6. Other	-
7. Interest $[1 \times 7.25\% + (2 + 3 + 4 + 5 + 6) \times 7.25\% \times 0.5]$	6,430,483
8. Expected End of Year AVA	92,553,960
9. Actual End of Year AVA	94,024,914
10. Actuarial Investment Gain (Loss) (9 - 8)	\$ 1,470,954



Section IV: Fund Liabilities

The total actuarial present value of benefits is the value as of the valuation date of all future benefits expected to be paid to current members of the Fund. An actuarial cost method allocates each individual's present value of benefits to past and future years of service. The actuarial accrued liability includes the portion of the active member present value of benefits allocated to past service as well as the entire present value of benefits for retirees, beneficiaries and inactive members. The portion of the actuarial present value allocated to the future service of active members is called the present value of future normal costs. Table IV-1 presents the calculation and allocation of the actuarial present value of benefits.

Table IV-1: Allocation of the Actuarial Present Value of Benefits as of June 30, 2021

	Actuarial Accrued Liability	Present Value of Future Normal Cost	Actuarial Present Value of Benefits
Active Members			
Service Retirement	\$ 35,121,180	\$ 19,422,893	\$ 54,544,073
Termination Benefits	1,516,540	4,572,399	6,088,939
Survivor Benefits	1,169,607	1,211,925	2,381,532
Disability Retirement	-	-	-
Total for Active Members	\$ 37,807,327	\$ 25,207,217	\$ 63,014,544
Inactive Members	\$ 8,168,393		\$ 8,168,393
Retirees and Beneficiaries			
Service Retirements	\$ 113,369,360		\$ 113,369,360
Beneficiaries	16,346,939		16,346,939
Disability Retirements	843,471		843,471
Total for Retirees and Beneficiaries	\$ 130,559,770		\$ 130,559,770
Total	\$176,535,490	\$ 25,207,217	\$ 201,742,707

Section IV: Fund Liabilities



Under the valuation funding method, an unfunded actuarial accrued liability (UAAL) exists to the extent that the actuarial accrued liability exceeds the actuarial value of assets as presented in Section III. The calculation of the UAAL as of the valuation date is shown in Table IV-2.

Table IV-2: Calculation of the Unfunded Actuarial Accrued Liability and Funded Ratio

	June 30, 2021	June 30, 2020
1. Actuarial Accrued Liability	176,535,490	170,755,647
2. Actuarial Value of Assets	94,024,914	91,269,164
3. Unfunded Actuarial Accrued Liability (1 - 2)	82,510,576	79,486,483
Funded Ratio (2 / 1)	53.3%	53.5%

Although the terminology used to describe the excess of the Fund's actuarial accrued liability over the Fund's actuarial value of assets is call the "unfunded" actuarial accrued liability, the actuarially determined contribution in the valuation includes an annual amortization payment required to fully amortize the UAAL within 25 years.

The funded ratio is the ratio of the actuarial value of assets to the actuarial accrued liability (Table IV-1) as of the valuation date. As of June 30, 2021, the funded ratio of the Fund is 53.3% as compared to a ratio of 53.5% as of June 30, 2020. The ratio is a commonly used measure of the funding progress and can be useful in reviewing the historical trend of a Fund's funding progress. Such a review should also consider the impact to this measure over the historical period due to changes to fund benefits, changes to the actuarial assumptions and methods, and the significant impact that investment experience can have on the ratio over short-term periods. We caution that no single "point in time" measure can provide a universal basis for comparing one plan's funded status to another.



Section IV: Fund Liabilities

The calculation of the Fund's actuarial assets and liabilities requires the use of several assumptions concerning the future experience of the Fund and its members. In each annual valuation, the latest year of actual experience is compared to that expected by the prior valuation. The differences are actuarial gains and losses which decrease or increase the UAAL. Table IV-3 provides the reconciliation of the UAAL.

Table IV-3: Reconciliation of the UAAL

	UAAL	Funded Ratio
1. Beginning of Year	\$ 79,486,483	53.5 %
2. Normal Cost	3,625,435	
3. Expected Contributions	(7,641,728)	
4. Other Income/Expense	70,969	
5. Interest [(1 x 7.25%) + (2 + 3 + 4) x 7.25% x 0.5]	5,619,752	
6. Expected End of Year	\$ 81,160,911	53.3 %
7. Actuarial Experience (Gain) / Loss		
Contribution Shortfall/(Surplus) (with interest)	\$ 183,582	(0.1)%
Investment Experience	(1,470,954)	0.9 %
Liability Experience	2,637,037	(0.8)%
Total Actuarial Experience (Gain) / Loss	\$ 1,349,665	
8. End of Year Prior to Plan/Assumption Changes (6 + 7)	\$ 82,510,576	0.0 %
9. Plan Changes	-	
10. Change in Actuarial Assumptions	-	0.0 %
11. Actual End of Year (8 + 9 + 10)	\$ 82,510,576	53.3 %



Section V: Actuarial Funding Calculation

Section IV of this report presented the Fund's actuarial accrued liability as the portion of the present value of benefits allocated to past years of service. The portion of the active members' present value of benefits allocated to future years of service is funded through annual normal cost contributions comprised of both active member and employer contributions.

The actuarially determined contribution rate is the percentage of valuation payroll necessary to fund the annual normal cost of the Fund and fully amortize the UAAL over 25 years. The amount calculated is expected to remain constant over the remaining amortization period and is provided in Table V-1.

Table V-1: Calculation of Actuarially Determined Contribution Rate

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$ 17,680,972	\$ 16,984,840
2. Present Value of Future Benefits	201,742,707	195,064,751
3. Present Value of Future Normal Costs	25,207,217	24,309,104
4. Actuarial Accrued Liability (2 - 3)	\$ 176,535,490	\$ 170,755,647
5. Actuarial Value of Assets	94,024,914	91,269,164
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 82,510,576	\$ 79,486,483
7. UAAL Amortization Payment (25 year funding)	\$ 5,326,594	\$ 5,131,369
a. Amortization Payment as a Percent of Payroll (7 / 1)	30.13%	30.21%
8. Total Normal Cost	\$ 3,646,006	\$ 3,625,435
a. Normal Cost as a Percent of Payroll (8 / 1)	20.62%	21.35%
9. Expected Administrative Expenses	\$ 88,405	\$ 84,924
a. Administrative Expense as a Percent of Payroll (9 / 1)	0.50%	0.50%
10. Reduction for SB122 Distribution	\$ 1,200,000	\$ 1,200,000
a. as a Percent of Payroll (10 / 1)	6.79%	7.07%
11. Actuarially Determined Contribution (ADC)	\$ 7,861,005	\$ 7,641,728
a. ADC Rate (7a + 8a + 9a - 10a)	44.46%	44.99%
12. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	15.00%	15.00%
b. Expected Docket Fees as a Percent of Payroll	14.85%	14.71%
c. Member Contribution Rate	10.50%	10.50%
d. Total Statutory Contribution Rate (a + b + c)	40.35%	40.21%
13. (Excess)/Shortfall of Statutory Rates (11a - 12d)	4.11%	4.78%



Section VI: Additional Disclosure Information

The tables provided in this section present information relevant for the annual financial reporting of the Fund. GASB Statement No. 67 required disclosure information will be provided in a separate supplemental report. Additional disclosure information is provided below.

Table VI-1: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Annual Payroll (c)	UAAL as a Percentage of Annual Payroll ((b - a) / c)
6/30/2021	\$ 94,024,914	\$ 176,535,490	\$82,510,576	53.3 %	\$17,165,992	480.7 %
6/30/2020	91,269,164	170,755,647	79,486,483	53.5 %	16,490,136	482.0 %
6/30/2019	92,081,178	167,198,535	75,117,357	55.1 %	15,621,802	480.8 %
6/30/2018	92,022,272	163,383,292	71,361,020	56.3 %	15,817,424	451.2 %
6/30/2017	92,137,316	149,412,786	57,275,470	61.7 %	14,721,304	389.1 %
6/30/2016	90,471,110	146,934,910	56,463,800	61.6 %	15,078,274	374.5 %
6/30/2015	88,249,418	141,281,155	53,031,737	62.5 %	15,084,263	351.6 %
6/30/2014	85,577,431	133,346,415	47,768,984	64.2 %	13,163,305	362.9 %
6/30/2013	80,007,287	143,745,971	63,738,684	55.7 %	13,226,142	481.9 %
6/30/2012	75,506,702	147,922,843	72,416,141	51.0 %	12,690,503	570.6 %

Table VI-2: Solvency Test

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 12,643,172	\$ 138,728,163	\$ 25,164,155	\$ 94,024,914	100.00%	58.66%	0.00%
6/30/2020	12,600,961	129,838,667	28,316,019	91,269,164	100.00	60.59	0.00
6/30/2019	11,618,040	125,839,968	29,740,527	92,081,178	100.00	63.94	0.00
6/30/2018	12,916,868	116,119,124	34,347,300	92,022,272	100.00	68.12	0.00
6/30/2017	12,589,634	106,164,363	30,658,789	92,137,316	100.00	74.93	0.00

Section VI: Additional Disclosure Information



Table VI-3: Schedule of Retirants Added to and Removed from Rolls

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	14	\$ 936,811	5	\$ 319,857	202	\$ 12,745,617	5.09%	\$ 63,097
6/30/2020	11	580,112	4	166,902	193	12,128,663	3.53%	62,843
6/30/2019	24	1,758,836	12	814,665	186	11,715,453	8.77%	62,986
6/30/2018	14	890,836	3	261,534	174	10,771,282	6.20%	61,904
6/30/2017	7	504,314	4	242,548	163	10,141,980	2.65%	62,221

Table VI-4: Summary of Actuarial Methods and Assumptions

Valuation Date	June 30, 2021
Actuarial cost method	Entry Age Normal
Amortization method	Level Percent of Payroll, Open
Payroll Growth Rate	3.00%
Remaining amortization period	25 years
Asset valuation method	4-year Smoothed Market
Actuarial assumptions:	
Investment rate of return*	7.25%
Administrative expenses	0.50% of payroll
Projected salary increases*	3.25% Annually
Post-Retirement Benefit Increases:	0.67% compounded annually
* Includes inflation at 2.50%	



Appendix A: Additional Membership Data

Table A-1: Schedule of Active Participant Data as of June 30, 2021

Nearest Age	Completed Years of Service							Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+		
30 to 34	0	1	0	0	0	0	0	1	\$ 127,067
35 to 39	5	1	0	0	0	0	0	6	\$ 802,922
40 to 44	9	4	1	0	0	0	0	14	\$ 1,868,464
45 to 49	10	7	5	0	0	0	0	22	\$ 2,935,463
50 to 54	8	7	3	1	4	0	0	23	\$ 3,107,333
55 to 59	3	2	2	8	0	3	0	18	\$ 2,395,037
60	1	1	2	1	0	0	0	5	\$ 668,824
61	0	0	0	0	1	0	0	1	\$ 127,067
62	3	0	0	0	2	0	0	5	\$ 685,048
63	0	2	4	1	0	0	0	7	\$ 941,720
64	2	0	1	2	0	0	0	5	\$ 672,402
65	1	1	1	0	0	0	0	3	\$ 401,294
66	2	0	0	0	0	0	0	2	\$ 274,560
67	0	1	0	0	0	0	0	1	\$ 133,765
68	1	0	2	0	0	0	0	3	\$ 401,294
69	0	2	0	1	0	0	0	3	\$ 403,083
70	0	0	1	2	0	0	0	3	\$ 417,727
71	0	0	0	0	0	0	0	0	\$ -
72	1	0	0	0	0	0	0	1	\$ 140,795
73	0	0	0	1	0	0	0	1	\$ -
74	0	1	2	1	0	0	0	4	\$ -
75	0	0	0	0	0	0	0	0	\$ -
76	0	0	0	0	0	0	0	0	\$ -
77	0	0	0	0	0	0	0	0	\$ -
78	0	0	0	0	0	0	0	0	\$ -
79	0	0	0	0	0	0	0	0	\$ -
80 & Over	0	0	0	0	0	0	0	0	\$ -
Total	46	30	24	18	7	3	0	128	\$17,165,992

Average Age: 54.73

Average Service: 9.05



Appendix A: Additional Membership Data

**Table A-2: Number of Annual Retirement Allowances of Benefit Recipients
as of June 30, 2021**

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
Normal Retirement Pensions			
Two Life 75% Survivor Pension:			
Retired Member Recipient	143	\$ 10,186,346	\$ 71,233
Survivor Recipient	39	\$ 1,859,345	\$ 47,676
Co-Payee Recipient	12	\$ 318,324	\$ 26,527
Total Normal Retirement Pensions	194	\$ 12,364,015	\$ 63,732
Disability Retirement Pensions			
Duty Disability	2	\$ 74,659	\$ 37,330
Non-Duty Disability	0	N/A	N/A
Survivor Recipient	0	N/A	N/A
Co-Payee Recipient	0	N/A	N/A
Total Disability Retirement Pensions	2	\$ 74,659	\$ 37,330
Pre-Retirement Survivor Pensions			
Survivor Spouse Recipient	6	\$ 306,943	\$ 51,157
Survivor Child Recipient	0	N/A	N/A
Total Pre-Retirement Survivor Pensions	6	\$ 306,943	\$ 51,157
Total Pensions Being Paid	202	\$ 12,745,617	\$ 63,097



Appendix A: Additional Membership Data

Table A-3: Distribution of Participants Receiving Benefits as of June 30, 2021

Attained Age	Retired Member*		Disabled Member		Survivor Beneficiaries		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
Under 40	0	\$ 0	0	\$ 0	2	\$ 9,726	2	\$ 9,726
40 to 44	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0	0
55 to 59	7	417,250	0	0	1	67,965	8	485,215
60 to 64	13	874,010	0	0	0	0	13	874,010
65 to 69	40	2,566,245	1	42,226	8	419,446	49	3,027,917
70 to 74	50	3,466,256	1	32,433	6	199,458	57	3,698,147
75 to 79	20	1,351,873	0	0	9	455,381	29	1,807,254
80 to 84	15	1,127,792	0	0	9	477,963	24	1,605,755
85 to 89	5	409,662	0	0	6	360,803	11	770,465
90 to 94	5	291,581	0	0	2	87,310	7	378,891
95 to 99	0	0	0	0	1	56,603	1	56,603
100 & Over	0	0	0	0	1	31,634	1	31,634
Total	155	\$ 10,504,669	2	\$ 74,659	45	\$ 2,166,289	202	\$ 12,745,617

*Includes 12 Co-Payees.

**Table A-4: Distribution of Retirees by Years of Service at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	Years of Credited Service at Retirement							
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total
Average Monthly Benefit	\$ 2,500	\$3,454	\$ 5,395	\$ 6,984	\$ 7,030	\$ 6,223	\$7,267	\$5,936
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees	8	17	31	48	18	11	10	143

**Table A-5: Distribution of Recent Retiree Ages at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	2016-17 Retirees	2017-18 Retirees	2018-19 Retirees	2019-20 Retirees	2020-21 Retirees	All Current Retirees
Number	4	8	16	6	10	143
Average Monthly Benefit at Retirement	\$ 8,285	\$ 7,808	\$ 6,833	\$ 5,928	\$ 6,266	\$ 5,912
Average Age at Retirement	65.65	65.55	64.97	65.14	63.84	62.70



Appendix A: Additional Membership Data

Table A-6: Status Reconciliation

	Active Members	Terminated Members *	Pension Recipients			Total
			Service Retired**	Disability Retired	All Beneficiaries	
June 30, 2020	123	27	146	2	45	343
Increase (Decrease) From:						
Service Retirement	(8)	(2)	10			
Disability Retirement						
Deaths	(1)		(3)		(2)	(6)
Survivors					2	2
Co-Payee			2			2
Other Terminations						
Vested Terminations	(4)	4				
Refund of Contributions						
New Entrants/Rehires	18					18
Data Adjustments						
June 30, 2021	128	29	155	2	45	359

* Includes 28 deferred vested members and 1 inactive members at June 30, 2021.

**Includes 12 Co-Payees at June 30, 2021



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Cost Methods Used for the Valuation

An actuarial cost method is a procedure for allocating the actuarial present value of benefits and expenses to time periods. The method used for this valuation is known as the individual entry-age actuarial cost method and has the following characteristics:

- (i) The annual normal costs for each individual active judge are sufficient to accumulate the value of the judge's pension at time of retirement.
- (ii) Each annual normal cost is a constant percentage of the judge's year-by-year projected pensionable compensation.

The individual entry-age actuarial cost method allocates the actuarial present value of each judge's projected benefits on a level basis over the judge's pensionable compensation between the entry age of the judge and the expected exit ages. Normal cost for each judge is based on the benefits payable to that judge. Expected administrative expenses of 0.50% of payroll is included in the calculation of the annual contribution requirement.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called the actuarial accrued liability. Deducting the actuarial value of assets from the actuarial accrued liability determines the unfunded actuarial accrued liability. Unfunded actuarial accrued liability was amortized as a level percent of payroll over 25 years to determine the computed contribution rate. This period is consistent with the policy established by the Retirement Board in October 1996.

Active judge payroll was projected to increase 3.00% per year for the purpose of determining the contribution needed to amortize the unfunded actuarial accrued liability.

The actuarial value of assets used for funding purposes is derived as follows: prior year actuarial value of assets is increased by contributions and expected investment income and reduced by refunds, benefit payments and expenses. To this amount 25% of the difference between expected and actual investment income for each of the previous four years is added. As of June 30, 2012, the actuarial value is no longer limited in the degree it can vary from market value by use of a 20% corridor. This change was recommended in the latest experience study and is consistent with the asset valuation method used in the other PERA plans.



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Assumptions Used for the Valuation

Economic Assumptions (effective with June 30, 2018 valuation, unless otherwise noted)

Assumed Rate of Investment Return. 7.25%, net of investment expenses.

Price Inflation. 2.50% per annum, compounded annually.

Real Investment Return. 4.75% per annum compounded annually.

Payroll Growth. 3.00% per year.

Salary Increases (effective with June 30, 2020 valuation). Annual salaries of active members are assumed to increase at an annual rate of 3.25%.

Administrative Expenses. 0.50% of payroll.

Demographic Assumptions

Rates of Retirement. These rates are used to measure the probability of an eligible judge retiring at the indicated ages.

Sample Ages	Percent Retiring During Year Following Attainment of Indicated Ages
50-54	15%
55-61	20
62	25
63-74	20
75+	100

A judge was assumed to be eligible for retirement after satisfying the following conditions:

	Pre 7/2005 Hire Date	Post 7/2005 Hire Date	Post 7/2014 Hire Date
Early Retirement Eligibility	Age 50 with 18 years of service	N/A	N/A
Normal Retirement Eligibility	Age 60 with 15 years of service; or age 65 with 5 years of service	Age 55 with 16 years of service; or age 65 with 5 years of service	Age 60 with 15 years of service; or age 65 with 8 years of service



Appendix B: Summary of Actuarial Assumptions and Methods

Rates of Disability. Beginning with the June 30, 2008 valuation, there are assumed to be no future disabled retirees.

Rates of Separation from Active Membership (effective with June 30, 2017 valuation). The rates are used to measure probabilities of active members terminating that status for a reason other than disability or death. The rates do not apply to judges who are eligible for retirement.

Sample Ages	Percent of Active Judges Separating Within the Next Year
20-34	1.00 %
37	2.00
42	2.50
47	3.00
52	3.50
57	4.00
62	4.50
65	4.50

Mortality Assumption (effective with June 30, 2018 valuation). RPH-2014 Blue Collar mortality table with female ages set forward one year. Future improvement in mortality rates is assumed using 60% of the MP-2017 projection scale generationally.

Sample Mortality Rates (Base Rates)								
Pre-Commencement			Post-Commencement			Post-Commencement		
Age	Male	Female	Age	Male	Female	Age	Male	Female
25	0.000733	0.000244	35	0.001793	0.001169	80	0.053460	0.042932
30	0.000717	0.000317	40	0.002156	0.001611	85	0.088524	0.072752
35	0.000797	0.000417	45	0.003275	0.002671	90	0.146859	0.125111
40	0.000958	0.000598	50	0.005604	0.004235	95	0.223428	0.197901
45	0.001455	0.001013	55	0.007342	0.005165	100	0.313988	0.291040
50	0.002490	0.001685	60	0.009893	0.006890	105	Disabled retirees use the same assumption as healthy lives.	
55	0.004071	0.002510	65	0.014089	0.010092	110		
60	0.006743	0.003606	70	0.021101	0.016038	115		
65	0.011612	0.005456	75	0.032952	0.026199	120		



Appendix B: Summary of Actuarial Assumptions and Methods

Miscellaneous and Technical Assumptions

Marriage Assumption:	All members are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses. At retirement 86% of members are assumed to be married for purposes of valuing death after retirement benefits.
Pay Increase Timing:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur at the beginning of the year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Neither disability nor withdrawal decrements operate during retirement eligibility.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report and the actual payroll payable at the time contributions are made.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.



Appendix B: Summary of Actuarial Assumptions and Methods

Definitions of Technical Terms

Accrued Service. Service credited under the system which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal cost and actuarial accrued liability.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.

Amortization. Paying off an amount with periodic payments of interest and principal – as opposed to paying off with a lump sum payment.

Experience Gain (Loss). The difference between actual actuarial costs and anticipated actuarial costs – during the period between two valuation dates.

Normal Cost. The actuarial cost allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and the funding value of assets. Sometimes referred to as the “unfunded accrued liability.”



Appendix C: Summary of Plan Provisions

Membership

Includes Metropolitan judges and all judges of district courts and justices of the Supreme Court and Court of Appeals. Judges in office on or before July 1, 1980 had the opportunity to choose coverage under the post July 1, 1980 plan upon filing of an irrevocable election prior to December 1, 1980.

Voluntary Retirement

A judge may voluntarily retire:

- 1) At age 65 with 5 or more years of service.
- 2) At age 60 with 15 or more years of service.

For members hired after July 1, 2005:

- 1) At age 65 with 5 or more years of service.
- 2) At age 55 with 16 or more years of service.

For members hired after June 30, 2014:

- 1) At age 65 with 8 or more years of service.
- 2) At age 60 with 15 or more years of service.

Retirement Pension

Pre 7-1-80 plan: 37.5% of one-year final average salary plus 7.5% of one-year final average salary for each year of service in excess of 5 years. Maximum is 75% of one-year final average salary (10 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five-year final average salary with a maximum of 85% of five-year final average salary.

Post 7-1-80 plan: 75% of one-year final average salary x 5% x (years of service prior to 7/1/2014 (not exceeding 15) plus 5). Maximum is 75% of one-year final average salary (15 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five-year final average salary with a maximum of 85% of five-year final average salary.

Post 7-1-05 plan: 3.75% of one-year final average salary for each year of service. Maximum is 75% of one-year final average salary (20 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five-year final average salary with a maximum of 85% of five-year final average salary.

Post 7-1-14 plan: 3.25% of five-year final average salary for each year of service. Maximum is 85% of five-year final average salary.

Total benefit is limited to 85% of five-year final average salary.



Appendix C: Summary of Plan Provisions

Early Retirement Pension

Applicable to judges between the ages of 50 and 60 with 18 or more years of service. The pension is equal to 70% of FAS plus $\frac{1}{2}\%$ of FAS multiplied by the number of complete years the age at retirement exceeds age 50. Members hired after July 1, 2005 are not eligible for early retirement.

Final Average Salary

For service credit earned before June 30, 2014, the salary received during the last one year in office prior to retirement. For service credit earned on or after July 1, 2014, the average salary received for the highest five-year consecutive period.

Deferred Retirement Pension

If judicial service terminates after 5 years of such service, the judge and spouse retain entitlement to benefits of the Fund. Five-year service requirement is waived if the result of a duty-related disability.

Pre 7-1-80 plan: 37.5% of one-year final average salary plus 7.5% of one-year final average salary for each year of service in excess of 5 years. Maximum is 75% of one-year final average salary (10 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five-year final average salary with a maximum of 85% of five-year final average salary.

Post 7-1-80 plan: 75% of one-year final average salary x 5% x (years of service prior to 7/1/2014 (not exceeding 15) plus 5). Maximum is 75% of one-year final average salary (15 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five-year final average salary with a maximum of 85% of five-year final average salary.

Post 7-1-05 plan: 3.75% of one-year final average salary for each year of service. Maximum is 75% of one-year final average salary (20 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five-year final average salary with a maximum of 85% of five-year final average salary.

Post 7-1-14 plan: 3.25% of five-year final average salary for each year of service. Maximum is 85% of five-year final average salary.

Total benefit is limited to 85% of five-year final average salary.

Payment of the judge's pension commences upon reaching the age and service requirement for voluntary retirement.



Appendix C: Summary of Plan Provisions

Survivor's Pension – Retired Judges

The surviving spouse of a retired judge hired prior to July 1, 2014 receives a pension of 75% of the judge's retirement pension until death. Pension is payable to deceased judge's minor and dependent children if there is no eligible surviving spouse. For a judge hired on or after July 1, 2014, any benefit the surviving spouse receives depends on the payment form elected by the judge at retirement.

Survivor's Pension – Active Judges

Applicable if judge had 5 (8 if hired after June 30, 2014) or more years of service. The surviving spouse of a judge hired prior to July 1, 2014 would receive 75% of the judge's vested pension until death. The surviving spouse of a judge hired after June 30, 2014 would receive the greater of 30% of final average salary or the accrued normal retirement pension under the 100% joint and survivor payment form. Pension is payable to deceased judge's minor and dependent children if there is no eligible surviving spouse.

Disability

Applicable if judge has 5 (8 if hired after June 30, 2014) or more years of service and becomes incapacitated to perform duties of office. The amount of the disability pension is equal to the judge's accrued vested benefit.

Cost-of-Living Increases

Effective July 1, 2014, there will be no COLA increases for 2014 and 2015. Starting July 1, 2016, annual 2% COLA increases will be subject to PERA's certification based on the Fund's current year and projected next year funded ratio being equal to or greater than 100%. At a minimum, a 2% COLA increase will be granted every third year. COLA increases are subject to the following eligibility periods:

- If member retires prior to July 1, 2014, COLA is payable after retirement has been in effect for at least 2 full calendar years.
- If member retires on or after July 1, 2014 but prior to July 1, 2015, COLA is payable after retirement has been in effect for at least 3 full calendar years.
- If member retires on or after July 1, 2015 but prior to July 1, 2016, COLA is payable after retirement has been in effect for at least 4 full calendar years.
- If member retires on or after July 1, 2016, COLA is payable after retirement has been in effect for at least 7 full calendar years.



Appendix C: Summary of Plan Provisions

If retired on account of disability or if at least age 65, the above waiting period is reduced to 1 full calendar year.

Judge's Contributions

Members contribute 10.5% of salary.

Refund of Judge's Contributions

If a judge leaves service or dies and no pension becomes payable, the accumulated contributions are refunded or paid to the designated beneficiary.

Public Payments

Payroll based contributions: 15.0% of salary. Dollar Contributions: \$38.00 from each civil case docket fee paid in the district court (increased from \$27.25 effective June 19, 1987) plus \$25.00 from each civil case docket fee and \$10.00 from each civil action jury fee paid in the metropolitan courts.

Other Service

PERA, MRA and ERA service may be combined with Judicial service for purposes of satisfying age and service requirements once a member has attained one month of Judicial service. When combining service, members may retire under the JRA after satisfying either the JRA or PERA age and service requirements for immediate benefits.



Appendix D: Risk Considerations

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the June 30, 2019 actuarial valuation.

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- external risks such as the regulatory and political environment.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates. The following discussion includes a few exhibits which summarize some historical information to help indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

The investment return on assets is the most obvious risk – and usually the primary risk – to funding a pension plan. To illustrate the magnitude of this risk, the following chart shows the Asset Volatility Ratio (AVR), defined as the fair value of assets divided by covered payroll.



Appendix D: Risk Considerations

HISTORICAL ASSET VOLATILITY RATIOS

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Actuarial Valuation Date	Market Value of Assets	Covered Payroll	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
6/30/2011	\$ 78,825,550	\$ 12,266,852	6.43	4.15%
6/30/2012	\$ 75,359,934	\$ 12,690,503	5.94	3.83%
6/30/2013	\$ 81,518,628	\$ 13,226,142	6.16	3.98%
6/30/2014	\$ 91,141,300	\$ 13,163,305	6.92	4.47%
6/30/2015	\$ 88,988,252	\$ 15,084,263	5.90	3.81%
6/30/2016	\$ 84,932,021	\$ 15,078,274	5.63	3.63%
6/30/2017	\$ 89,616,194	\$ 14,721,304	6.09	3.93%
6/30/2018	\$ 91,330,642	\$ 15,817,424	5.77	3.72%
6/30/2019	\$ 91,759,352	\$ 15,621,802	5.87	3.79%
6/30/2020	\$ 84,870,503	\$ 16,490,136	5.15	3.32%
6/30/2021	\$ 101,226,570	\$ 17,165,992	5.90	3.81%

*The impact of asset smoothing is not reflected in the impact on the Actuarial Contribution Rate (ACR). Current year assumptions are used for all years shown.

The assets as of June 30, 2021 are about 5.9 times the amount of covered payroll. Consequently, underperforming the investment return assumption by 10.00% (i.e., earn -2.75% for one year) is equivalent to about 59% of payroll. While the actual impact of this experience in the first year is mitigated by the asset smoothing method and amortization of the UAL, this table illustrates the risk associated with volatile investment returns. Such an event in one year would be expected to increase the actuarial contribution rate by 3.81% of payroll.



Appendix D: Risk Considerations

HISTORICAL CASH FLOWS

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that may cause significant concerns. This is a metric the investment consultants usually focus on when evaluating the asset allocation. The maturity of the system is the main contributor to the situation.

Actuarial Valuation Date	Market Value of Assets	Contributions	Benefit Payments and Expenses	Net Cash Flow	Net Cash Flow as a Percent of MVA
6/30/2011	\$ 78,825,550	5,142,469	7,141,608	(1,999,139)	-2.54%
6/30/2012	\$ 75,359,934	4,630,650	7,665,824	(3,035,174)	-4.03%
6/30/2013	\$ 81,518,628	4,967,040	8,277,164	(3,310,124)	-4.06%
6/30/2014	\$ 91,141,300	4,826,417	8,886,349	(4,059,932)	-4.45%
6/30/2015	\$ 88,988,252	5,775,456	9,440,162	(3,664,706)	-4.12%
6/30/2016	\$ 84,932,021	5,819,109	9,851,030	(4,031,921)	-4.75%
6/30/2017	\$ 89,616,194	6,159,844	10,175,837	(4,015,993)	-4.48%
6/30/2018	\$ 91,330,642	6,355,087	10,660,239	(4,305,152)	-4.71%
6/30/2019	\$ 91,759,352	6,422,329	11,521,283	(5,098,954)	-5.56%
6/30/2020	\$ 84,870,503	6,466,425	12,102,798	(5,636,373)	-6.64%
6/30/2021	\$ 101,226,570	7,464,568	12,610,255	(5,145,687)	-5.08%



Appendix D: Risk Considerations

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. Historically, the Fund has been funded with fixed contribution rates by both employees and the employer. In 2020, Senate Bill 122 implemented a monthly distribution of \$100,000 to the Fund until achieving 100% funded status. However, the combined statutory contribution rates have failed to meet the actuarial required contribution in each of the past ten years, when looking to fund the System over 25 years. We would note that with the adoption of SB 122 the Fund is expected to be fully funded in the future, if all assumptions are met.

Funding a retirement system with fixed contribution rates creates some unique funding challenges. Given the extreme volatility associated with the underlying investments of the portfolio, wide variations in the actual return on the market value of assets is expected. However, when it occurs it can change the long-term funding outlook from positive to negative or vice versa. By the time a trend has been identified, it is possible for the funded status of the System to have seriously declined, requiring more substantive resources to compensate for the investment losses.

A key demographic risk for all retirement systems is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.



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**New Mexico Magistrate Retirement Fund
Annual Actuarial Valuation
as of June 30, 2021**





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The experience and dedication you deserve

October 28, 2021

The Retirement Board
Public Employees Retirement Association
Santa Fe, New Mexico

Members of the Board:

We have conducted the annual actuarial valuation of the New Mexico Magistrate Retirement Fund as of June 30, 2021; the results of the valuation are contained in the following report. The annual valuation is used to determine the sufficiency of the statutory contribution rates and, if necessary, the amount required to fund the annual normal cost and fully amortize the unfunded actuarial accrued liability with annual payments over a 25-year period. The results of this valuation apply to the fiscal year beginning July 1, 2021 and ending June 30, 2022 (FY 2022). Information contained in our report for plan years ending prior to June 30, 2010 is based upon valuations performed by the Fund's prior actuary.

In performing the valuation, we relied on data supplied by the Public Employees Retirement Association (PERA) and performed limited tests on the data for consistency and reasonableness. In determining the Fund's liabilities, future events, such as investment returns, deaths, retirements, etc., are anticipated based upon the set of actuarial assumptions as approved by the Board. There were no assumption changes since the last valuation. The valuation reflects the passage of Senate Bill 122, which provides for a monthly distribution of \$100,000 to the Fund until achieving 100% funded status.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: fund experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This actuarial valuation was performed to determine the adequacy of statutory contributions to fund the plan. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.



Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Appendix D of this report provides a discussion of the risk considerations for the Fund in compliance with the guidance provided under Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51).

Annual actuarial valuations are performed for the Fund which re-measure the assets and liabilities and compute a new actuarially determined contribution. The Fund also has experience studies performed every four to five years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and periodic experience studies are practical ways to monitor and reassess risk.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise in the future of any adjustments that we believe would be appropriate.

This is to certify that the undersigned are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Fund.

Respectfully submitted,

A blue ink signature of John J. Garrett, written in a cursive style.

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

A blue ink signature of Bryan Hoge, written in a cursive style.

Bryan Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



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Section I: Board Summary



The table below summarizes the results of the June 30, 2021 actuarial valuation as compared with the prior year.

Table I-1: Comparative Summary of Principal Results

Valuation Date	June 30, 2021	June 30, 2020
Total Annual Payroll	\$ 6,106,006	\$ 5,914,106
Total Valuation Payroll	\$ 6,289,187	\$ 6,091,529
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 17,406,822	\$ 16,443,088
Retired Members and Survivors	<u>42,948,791</u>	<u>42,147,717</u>
Total	\$ 60,355,613	\$ 58,590,805
Actuarial Value of Assets (AVA)	\$ 32,644,797	\$ 31,274,386
Funded Ratio	54.1%	53.4%
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ 27,710,816	\$ 27,316,419
Calculation of Required Contribution (Fiscal Year Ending)	June 30, 2022	June 30, 2021
Normal Cost		
Retirement	13.03 %	12.60 %
Termination	5.86 %	5.58 %
Pre-Retirement Survivors	0.76 %	0.72 %
Disability	<u>0.00 %</u>	<u>0.00 %</u>
Total Normal Cost	19.65 %	18.90 %
Expected Administrative Expenses	0.50 %	0.50 %
UAAL 25-Year Amortization Rate	28.44 %	28.95 %
Reduction for SB122 Distribution	<u>(19.08)%</u>	<u>(19.70)%</u>
Actuarially Determined Contribution Rate	29.51 %	28.65 %
Actuarially Determined Contribution Amount	\$ 1,856,377	\$ 1,745,055
Statutory Contribution Rates		
Employer Contribution Rate	15.00 %	15.00 %
Expected Docket Fees	3.44 %	5.97 %
Member Contribution Rate	<u>10.50 %</u>	<u>10.50 %</u>
Total Statutory Rate	28.94 %	31.47 %
Expected Statutory Amount	\$ 1,820,091	\$ 1,917,004
Amortization Period Based on Statutory Rates	46	29
(Excess)/Deficiency in Statutory Rate	0.57 %	(2.82)%
Deficiency in Expected Statutory Amount	\$ 36,286	N/A



Section I: Board Summary

Summary of Key Findings

The funding policy for the Fund determines the employer contribution required to satisfy the annual normal cost plus an amount to fully amortize the unfunded actuarial accrued liability (UAAL) over a period not to exceed 25 years. This resulting contribution amount is compared to the expected statutory contribution amount to assess the sufficiency of the statutory contribution. The actuarially determined contribution rate for the Fund in the fiscal year ending June 30, 2022 (FY 2022) is 29.51% of covered payroll.

The total normal cost contribution as a percent of valuation payroll increased from 18.90% to 19.65%. The UAAL increased from \$27.3 million to \$27.7 million, resulting in a decrease to the annual amortization amount from 28.95% to 28.44% of payroll. The funded ratio has increased from 53.4% to 54.1%. The UAAL and funded ratio are reconciled in Table IV-3. We note the following key findings:

- The Fund experienced an actuarial gain on Fund assets of \$521,528 for the plan year related to the 8.95% investment return on the actuarial value of assets, which is more than the assumed rate of return of 7.25%. This represents a 0.8% increase to the funded ratio. Table III-3 provides the calculation of the investment loss for this year.
- The Fund experienced a net loss of \$825,033 on Fund liabilities due to non-investment related experience. This represents a 0.7% decrease to the funded ratio.
- The Fund received \$1,299,765 more in contributions than expected. This represents a 2.2% increase to the funded ratio.
- Senate Bill 122 provides for a monthly distribution of \$100,000 to the Fund until 100% funded. These changes resulted in a decrease of 19.08% to the actuarially determined contribution rate.

Section II of the report provides summarized information on the membership data used in the valuation. Section III covers the Fund's assets and Section IV covers the Fund's liabilities. The results of the valuation are provided in Section V and the accounting information is in Section VI. The appendices provide additional information on A) the Fund members, B) the actuarial assumptions and methods, and C) the summary of the benefit provisions of the Fund. It is important to note that all information contained in this report for periods prior to June 30, 2010 were produced by a prior actuarial consulting firm.

Section II: Membership Data



Data regarding the membership of the Fund for use in the valuation were furnished by PERA. The following table summarizes the membership data as of June 30, 2021 and is compared with that reported for the prior year.

Table II-1: Summary of Membership Data as of June 30, 2021

Group	June 30, 2021	June 30, 2020
Total Active Members	64	62
Inactive Members		
Deferred Vested	18	19
Other	<u>0</u>	<u>0</u>
Total Inactive Members	18	19
Retirees		
Service*	84	85
Disabled	2	2
Beneficiaries	<u>25</u>	<u>21</u>
Total Retirees	111	108
Totals	193	189

* Includes 4 Co-Payees as of June 30, 2021 and June 30, 2020.

Table II-2: Historical Summary of Active Membership Valuation Data

Valuation Date	Number	Annual Payroll	Annual Average Pay	% Change in Average Pay
6/30/2021	64	\$ 6,106,006	\$ 95,406	0.02 %
6/30/2020	62	5,914,106	95,389	5.99 %
6/30/2019	65	5,849,795	89,997	(0.00)%
6/30/2018	65	5,849,815	89,997	6.60 %
6/30/2017	65	5,487,517	84,423	0.09 %
6/30/2016	65	5,482,360	84,344	(0.10)%

Section II: Membership Data



Table II-3: Deferred Members, Retired Members and Beneficiaries as of June 30, 2021

Group	Number	Total Annual Benefits	Average Annual Benefits	Average Age
Deferred Vested	18	\$ 443,868	\$ 24,659	56.06
Retirees				
Service*	84	3,390,699	40,365	72.33
Disability	2	99,215	49,608	68.99
Survivors	<u>25</u>	<u>842,806</u>	33,712	72.56
Retiree Totals	111	\$ 4,332,720	\$ 39,034	72.32
Total	129	\$ 4,776,588	\$ 37,028	70.05

* Includes 4 Co-Payees.

Section III: Fund Assets



The following tables provide information on the Fund's assets at market value and the development of the actuarial value of assets.

Table III-1: Market Value Reconciliation

	June 30, 2021	June 30, 2020
Beginning of Year Market Value	\$ 29,070,669	\$ 31,797,388
Audit Adjustment	-	-
Revised Beginning of Year Market Value	\$ 29,070,669	\$ 31,797,388
Revenues:		
Member Contributions	651,699	650,354
Docket Fees	216,660	363,615
Employer Contributions	930,993	929,071
Appropriations	1,200,000	-
Purchase of Service	-	-
Investment Income		
Interest, dividends, etc.	794,580	600,779
Realized/Unrealized gains (losses)	6,832,245	(916,114)
Security lending	3,959	6,165
Other Income	-	-
Settlement Award		
Total Revenues	\$ 10,630,136	\$ 1,633,870
Expenditures:		
Benefit Payments	4,293,633	4,204,113
Refunds of Member Contributions	49,849	-
Investment Expenses	168,267	128,148
Administrative Expenses	24,759	28,328
Total Expenditures	\$ 4,536,508	\$ 4,360,589
End of Year Market Value	\$ 35,164,297	\$ 29,070,669

The market value rate of return for the plan year is 26.29%. The Fund's cash flow is (4.26)% as a percentage of average market value. A mature system such as the Magistrate Retirement Fund is expected to exhibit negative net cash flow as the number of members receiving benefit payments becomes a larger portion of total membership. We will continue to monitor this in each future valuation.

Section III: Fund Assets



The actuarial value of assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The actuarial value of assets has been calculated by spreading the recognition of unexpected investment income over four years. The amount of unexpected investment income in each year is the difference between expected actuarial value investment income and actual market value investment income. Table III-2 below provides the calculation of the actuarial value of assets.

Table III-2: Development of Actuarial Value of Assets as of June 30, 2021

1. Actuarial Value Beginning of Year		\$	31,274,386
2. Market Value End of Year			35,164,297
3. Market Value Beginning of Year (with audit adjustment)		\$	29,070,669
4. Cash Flow			
a. Contributions		\$	1,799,352
b. Appropriations			1,200,000
c. Service Purchases			-
d. Benefit Payments and Refunds			(4,343,482)
e. Administrative Expenses			(24,759)
f. Other			-
g. Net		\$	(1,368,889)
5. Investment Income			
a. Market Total (2 - 3 - 4g)		\$	7,462,517
b. Assumed Rate			7.25%
c. Amount for Immediate Recognition			2,217,771
d. Amount for Phased-In Recognition			5,244,746
6. Phased-In Recognition of Investment Income			
a. Current Year: 0.25 * 5d		\$	1,311,187
b. First Prior Year (2019/2020)	\$	(2,665,822) x 25%	(666,456)
c. Second Prior Year (2018/2019)	\$	(324,596) x 25%	(81,149)
d. Third Prior Year (2017/2018)	\$	(168,212) x 25%	(42,053)
e. Total Recognized Investment Gain		\$	521,529
7. Audit Adjustment		\$	-
8. Actuarial Value (1 + 4g + 5c + 6e + 7)		\$	32,644,797
9. Difference Between Market & Actuarial Values (2 - 8)			2,519,500
10. Rate of Return on Actuarial Value			8.95 %
11. Actuarial Value of Assets as a % of Market Value of Assets			92.84 %

The actuarial value of assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The actuarial value of assets has been calculated by spreading the recognition of unexpected investment income over four years. The amount of unexpected investment income in each year is the difference between expected actuarial value investment income and actual market value investment income. Table III-3 provides the calculation of the gain or loss due to the investment experience on the actuarial value of assets for the year ended June 30, 2021 (based on the 7.25% assumed rate of return in effect for the prior valuation).

Table III-3: Actuarial Investment Gain (Loss) for the Year Ended June 30, 2021

1. Beginning of Year Actuarial Value of Assets (AVA)	\$ 31,274,386
2. Employee and Employer Contributions	1,799,352
3. Appropriations	1,200,000
4. Benefit Payments	(4,343,482)
5. Administrative Expenses	(24,759)
6. Other	-
7. Interest $[1 \times 7.25\% + (2 + 3 + 4 + 5 + 6) \times 7.25\% \times 0.5]$	2,217,771
8. Expected End of Year AVA	32,123,268
9. Actual End of Year AVA	32,644,797
10. Actuarial Investment Gain (Loss) (9- 8)	\$ 521,529



Section IV: Fund Liabilities

The total actuarial present value of benefits is the value as of the valuation date of all future benefits expected to be paid to current members of the Fund. An actuarial cost method allocates each individual's present value of benefits to past and future years of service. The actuarial accrued liability includes the portion of the active member present value of benefits allocated to past service as well as the entire present value of benefits for retirees, beneficiaries and inactive members. The portion of the actuarial present value allocated to the future service of active members is called the present value of future normal costs. Table IV-1 presents the calculation and allocation of the actuarial present value of benefits.

Table IV-1: Allocation of the Actuarial Present Value of Benefits as of June 30, 2021

	Actuarial Accrued Liability	Present Value of Future Normal Cost	Actuarial Present Value of Benefits
Active Members			
Service Retirement	\$ 12,596,386	\$ 4,046,552	\$ 16,642,938
Termination Benefits	1,331,762	2,038,452	3,370,214
Survivor Benefits	302,257	234,039	536,296
Disability Retirement	-	-	-
Total for Active Members	\$ 14,230,405	\$ 6,319,043	\$ 20,549,448
Inactive Members	\$ 3,176,417		\$ 3,176,417
Retirees and Beneficiaries			
Service Retirements	\$ 34,649,506		\$ 34,649,506
Beneficiaries	7,099,130		7,099,130
Disability Retirements	1,200,155		1,200,155
Total for Retirees and Beneficiaries	\$ 42,948,791		\$ 42,948,791
Total	\$ 60,355,613	\$ 6,319,043	\$ 66,674,656



Section IV: Fund Liabilities

Under the valuation funding method, an unfunded actuarial accrued liability (UAAL) exists to the extent that the actuarial accrued liability exceeds the actuarial value of assets as presented in Section III. The calculation of the UAAL and Funded Ratio as of the valuation date is shown in Table IV-2.

Table IV-2: Calculation of the Unfunded Actuarial Accrued Liability and Funded Ratio

	June 30, 2021	June 30, 2020
1. Actuarial Accrued Liability	60,355,613	58,590,805
2. Actuarial Value of Assets	32,644,797	31,274,386
3. Unfunded Actuarial Accrued Liability (1 - 2)	27,710,816	27,316,419
Funded Ratio (2 / 1)	54.1%	53.4%

Although the terminology used to describe the excess of the Fund's actuarial accrued liability over the Fund's actuarial value of assets is call the "unfunded" actuarial accrued liability, the actuarially determined contribution in the valuation includes an annual amortization payment required to fully amortize the UAAL within 25 years.

The funded ratio is the ratio of the actuarial value of assets to the actuarial accrued liability (Table IV-1) as of the valuation date. As of June 30, 2021, the funded ratio of the Fund is 54.1% as compared to a ratio of 53.4% as of June 30, 2020. The ratio is a commonly used measure of the funding progress and can be useful in reviewing the historical trend of a Fund's funding progress. Such a review should also consider the impact to this measure over the historical period due to changes to fund benefits, changes to the actuarial assumptions and methods, and the significant impact that investment experience can have on the ratio over short-term periods. We caution that no single "point in time" measure can provide a universal basis for comparing one plan's funded status to another.



Section IV: Fund Liabilities

The calculation of the Fund's actuarial assets and liabilities requires the use of several assumptions concerning the future experience of the Fund and its members. In each annual valuation, the latest year of actual experience is compared to that expected by the prior valuation. The differences are actuarial gains and losses which decrease or increase the UAAL. Table IV-3 provides the reconciliation of the UAAL.

Table IV-3: Reconciliation of the UAAL

	UAAL	Funded Ratio
1. Beginning of Year	\$ 27,316,419	53.4 %
2. Normal Cost	1,151,145	
3. Expected Contributions	(1,745,055)	
4. Other Income/Expense	24,759	
5. Interest [(1 x 7.25%) + (2 + 3 + 4) x 7.25% x 0.5]	1,959,809	
6. Expected End of Year	\$ 28,707,077	51.8 %
7. Actuarial Experience (Gain) / Loss		
Contribution Shortfall/(Surplus) (with interest)	\$ (1,299,765)	2.2 %
Investment Experience	(521,529)	0.8 %
Liability Experience	825,033	(0.7)%
Total Actuarial Experience (Gain) / Loss	\$ (996,261)	
8. End of Year Prior to Plan/Assumption Changes (6 + 7)	\$ 27,710,816	54.1 %
9. Plan changes	-	
10. Change in Actuarial Assumptions	-	0.0 %
11. Actual End of Year (8 + 9 + 10)	\$ 27,710,816	54.1 %



Section V: Actuarial Funding Calculation

Section IV of this report presented the Fund's actuarial accrued liability as the portion of the present value of benefits allocated to past years of service. The portion of the active members' present value of benefits allocated to future years of service is funded through annual normal cost contributions comprised of both active member and employer contributions.

The employer's actuarially determined contribution rate is the percentage of valuation payroll necessary to fund the annual normal cost and fully amortize the UAAL over 25 years. The amount calculated is expected to remain constant over the remaining amortization period and is provided in Table V-1.

Table V-1: Calculation of Actuarially Determined Contribution Rate

	June 30, 2021	June 30, 2020
1. Total Valuation Payroll	\$ 6,289,187	\$ 6,091,529
2. Present Value of Future Benefits	66,674,656	64,691,794
3. Present Value of Future Normal Costs	6,319,043	6,100,989
4. Actuarial Accrued Liability (2 - 3)	\$ 60,355,613	\$ 58,590,805
5. Actuarial Value of Assets	32,644,797	31,274,386
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 27,710,816	\$ 27,316,419
7. UAAL Amortization Payment (25 year funding)	\$ 1,788,913	\$ 1,763,452
a. Amortization Payment as a Percent of Payroll (7 / 1)	28.44%	28.95%
8. Total Normal Cost	\$ 1,236,018	\$ 1,151,145
a. Normal Cost as a Percent of Payroll (8 / 1)	19.65%	18.90%
9. Expected Administrative Expenses	\$ 31,446	\$ 30,458
a. Administrative Expenses as a Percent of Payroll (9 / 1)	0.50%	0.50%
10. Reduction for SB122 Distribution	\$ 1,200,000	\$ 1,200,000
a. as a Percent of Payroll (10 / 1)	19.08%	19.70%
11. Actuarially Determined Contribution (ADC)	\$ 1,856,377	\$ 1,745,055
a. ADC Rate (7a + 8a + 9a - 10a)	29.51%	28.65%
12. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	15.00%	15.00%
b. Expected Docket Fees as a Percent of Payroll	3.44%	5.97%
c. Member Contribution Rate	10.50%	10.50%
d. Total Statutory Contribution Rate (a + b + c)	28.94%	31.47%
13. (Excess)/Shortfall of Statutory Rates (11a - 12d)	0.57%	(2.82)%



Section VI: Additional Disclosure Information

The tables provided in this section present information relevant for the annual financial reporting of the Fund. GASB Statement No. 67 required disclosure information will be provided in a separate supplemental report. Additional disclosure information is provided below.

Table VI-1: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Liability Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Annual Payroll (c)	UAAL as a Percentage of Annual Payroll ((b - a) / c)
6/30/2021	\$32,644,797	\$60,355,613	\$27,710,816	54.1 %	\$6,106,006	453.8 %
6/30/2020	31,274,386	58,590,805	27,316,419	53.4 %	5,914,106	461.9 %
6/30/2019	31,882,687	58,723,077	26,840,390	54.3 %	5,849,795	458.8 %
6/30/2018	32,331,750	58,099,481	25,767,731	55.6 %	5,849,815	440.5 %
6/30/2017	33,162,734	54,087,066	20,924,332	61.3 %	5,487,517	381.3 %
6/30/2016	33,059,864	53,546,860	20,486,996	61.7 %	5,482,360	373.7 %
6/30/2015	32,803,715	52,580,762	19,777,047	62.4 %	5,065,798	390.4 %
6/30/2014	32,970,978	51,140,415	18,169,437	64.5 %	3,515,567	516.8 %
6/30/2013	31,813,605	54,498,646	22,685,041	58.4 %	3,136,834	723.2 %
6/30/2012	30,878,948	58,037,075	27,158,127	53.2 %	3,213,712	845.1 %

Table VI-2: Solvency Test

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 5,566,695	\$ 46,125,208	\$ 8,663,710	\$32,644,797	100.00%	58.71%	0.00%
6/30/2020	5,068,019	45,542,311	7,980,475	31,274,386	100.00	57.54	0.00
6/30/2019	4,992,710	45,004,313	8,726,054	31,882,687	100.00	59.75	0.00
6/30/2018	4,681,462	41,973,554	11,444,465	32,331,750	100.00	65.88	0.00
6/30/2017	4,156,427	40,691,805	9,238,834	33,162,734	100.00	71.28	0.00
6/30/2016	3,654,856	41,202,695	8,689,309	33,059,864	100.00	71.37	0.00



Section VI: Additional Disclosure Information

Table VI-3: Schedule of Retirants Added to and Removed from Rolls

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	6	\$ 273,918	3	\$ 128,573	111	\$ 4,332,720	3.47%	\$ 39,034
6/30/2020	7	321,327	4	143,286	108	4,187,375	4.44%	38,772
6/30/2019	6	255,565	5	146,339	105	4,009,334	2.80%	38,184
6/30/2018	4	127,328	2	117,673	104	3,900,108	0.25%	37,501
6/30/2017	8	188,602	6	191,813	102	3,890,453	-0.08%	38,142
6/30/2016	4	93,126	6	211,449	100	3,893,664	-2.95%	38,937

Table VI-4: Summary of Actuarial Methods and Assumptions

Valuation Date	June 30, 2021
Actuarial cost method	Entry Age Normal
Amortization method	Level Percent of Payroll, Open
Payroll Growth Rate	3.00%
Remaining amortization period	25 years
Asset valuation method	4-year Smoothed Market
Actuarial assumptions:	
Investment rate of return*	7.25%
Administrative expenses	0.50% of payroll
Projected salary increases*	3.25% Annually
Post-Retirement Benefit Increases	0.67% compounded annually
* Includes inflation at 2.50%	

Appendix A: Additional Membership Data



Table A-1: Schedule of Active Participant Data as of June 30, 2021

Nearest Age	Completed Years of Service							Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+		
30 to 34	1	0	0	0	0	0	0	1	\$ 95,306
35 to 39	4	0	0	1	0	0	0	5	\$ 477,818
40 to 44	1	1	0	0	1	0	0	3	\$ 287,206
45 to 49	6	2	1	2	0	1	0	12	\$ 1,143,667
50 to 54	1	0	1	0	0	2	0	4	\$ 381,222
55 to 59	6	1	1	1	1	3	0	13	\$ 1,238,973
60	0	1	0	0	1	0	0	2	\$ 190,611
61	1	0	0	0	0	0	0	1	\$ 95,306
62	1	1	0	0	0	0	0	2	\$ 191,901
63	2	0	0	0	0	0	0	2	\$ 191,901
64	2	0	2	0	0	0	0	4	\$ 381,222
65	0	1	0	0	0	0	0	1	\$ 95,306
66	3	1	1	0	0	0	0	5	\$ 476,528
67	1	0	0	0	1	0	0	2	\$ 191,901
68	1	0	0	0	1	0	0	2	\$ 190,611
69	0	0	0	1	0	0	0	1	\$ 95,306
70	0	0	0	1	0	0	0	1	\$ 95,306
71	1	0	0	0	0	0	0	1	\$ 95,306
72	0	0	0	0	0	0	0	0	\$ -
73	0	0	0	0	0	0	0	0	\$ -
74	1	0	0	0	0	0	0	1	\$ 95,306
75	0	0	0	0	0	0	0	0	\$ -
76	0	0	0	0	0	0	0	0	\$ -
77	1	0	0	0	0	0	0	1	\$ 95,306
78	0	0	0	0	0	0	0	0	\$ -
79	0	0	0	0	0	0	0	0	\$ -
80 & Over	0	0	0	0	0	0	0	0	\$ -
Total	33	8	6	6	5	6	0	64	\$ 6,106,006

Average Age: 56.00

Average Service: 9.47



**Table A-2: Number of Annual Retirement Allowances of Benefit Recipients
as of June 30, 2021**

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
Normal Retirement Pensions			
Two Life 75% Survivor Pension:			
Retired Member Recipient	80	\$ 3,341,807	\$ 41,773
Survivor Recipient	23	\$ 762,994	\$ 33,174
Co-Payee Recipient	4	\$ 48,893	\$ 12,223
Total Normal Retirement Pensions	107	\$ 4,153,694	\$ 38,820
Disability Retirement Pensions			
Duty Disability	0	N/A	N/A
Non-Duty Disability	2	\$ 99,214	\$ 49,607
Survivor Recipient	0	N/A	N/A
Co-Payee Recipient	0	N/A	N/A
Total Disability Retirement Pensions	2	\$ 99,214	\$ 49,607
Pre-Retirement Survivor Pensions			
Survivor Spouse Recipient	2	\$ 79,812	\$ 39,906
Survivor Child Recipient	0	N/A	N/A
Total Pre-Retirement Survivor Pensions	2	\$ 79,812	\$ 39,906
Total Pensions Being Paid	111	\$ 4,332,720	\$ 39,034



Appendix A: Additional Membership Data

Table A-3: Distribution of Participants Receiving Benefits as of June 30, 2021

Attained Age	Retired Member*		Disabled Member		Survivor Beneficiaries		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
Under 40	0	\$0	0	\$0	1	\$ 24,196	1	\$ 24,196
40 to 44	0	0	0	0	1	48,209	1	48,209
45 to 49	0	0	0	0	1	38,925	1	38,925
50 to 54	2	40,045	0	0	0	0	2	40,045
55 to 59	7	263,263	0	0	1	17,067	8	280,330
60 to 64	5	164,524	0	0	2	71,469	7	235,993
65 to 69	18	729,214	1	61,096	4	108,421	23	898,731
70 to 74	19	859,524	1	38,120	2	86,064	22	983,708
75 to 79	21	766,804	0	0	2	92,781	23	859,585
80 to 84	4	161,560	0	0	5	154,443	9	316,003
85 to 89	4	235,585	0	0	4	139,186	8	374,771
90 to 94	4	170,180	0	0	2	62,045	6	232,225
95 to 99	0	0	0	0	0	0	0	0
100 & Over	0	0	0	0	0	0	0	0
Total	84	\$ 3,390,699	2	\$ 99,215	25	\$ 842,806	111	\$ 4,332,720

*Includes 4 Co-Payees.

**Table A-4: Distribution of Retirees by Years of Service at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	Years of Credited Service at Retirement							
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total
Average Monthly Benefit*	\$ 1,569	\$ 3,122	\$ 4,354	\$ 4,241	\$ 3,325	\$ 4,398	\$ 2,470	\$ 3,488
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees*	10	20	17	16	6	3	2	74

*Does not include 6 retirees with missing years of service at retirement.



Appendix A: Additional Membership Data

**Table A-5: Distribution of Recent Retiree Ages at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	2015-16 Retirees	2016-17 Retirees	2017-18 Retirees	2018-19 Retirees	2019-20 Retirees	2020-21 Retirees	All Current Retirees
Number	2	2	0	3	5	2	80
Average Monthly Benefit at Retirement	\$ 1,115	\$ 5,029	N/A	\$ 4,256	\$ 5,461	\$ 3,670	\$ 3,223
Average Age at Retirement	63.08	60.04	N/A	63.64	62.60	60.79	60.77

Table A-6: Status Reconciliation

	Active Members	Terminated Members	Pension Recipients			Total
			Service Retired*	Disability Retired	All Beneficiaries	
June 30, 2020	62	19	85	2	21	189
Increase (Decrease) From:						0
Service Retirement	(1)	(1)	2			0
Disability Retirement						0
Deaths	(1)		(3)			(4)
Survivors					4	4
Co-Payee						0
Other Terminations	(1)					(1)
Vested Terminations						0
Refund of Contributions						0
New Entrants/Rehires	5	(1)				4
Data Adjustments		1				1
June 30, 2021	64	18	84	2	25	193

*Includes 4 Co-Payees at 6/30/2021 and 6/30/2020.



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Cost Methods Used for the Valuation

An actuarial cost method is a procedure for allocating the actuarial present value of benefits and expenses to time periods. The method used for this valuation is known as the individual entry-age actuarial cost method and has the following characteristics:

- (i) The annual normal costs for each individual active magistrate are sufficient to accumulate the value of the magistrate's pension at the time of retirement.
- (ii) Each annual normal cost is a constant percentage of the magistrate's year-by-year projected compensation.

The individual entry-age actuarial cost method allocates the actuarial present value of each magistrate's projected benefits on a level basis over the magistrate's compensation between the entry-age of the magistrate and the expected exit ages. Expected administrative expenses of 0.50% of payroll is included in the calculation of the annual contribution requirement.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future costs is called the actuarial accrued liability. Deducting actuarial value of assets from the actuarial accrued liability determines the unfunded actuarial accrued liability. The unfunded actuarial accrued liability was amortized as a level percent of payroll over 25 years to determine the computed contribution for fiscal integrity. This period is consistent with the policy established by the Retirement Board in October 1996.

Active magistrate payroll was projected to increase 3.00% per year for the purpose of determining the contribution needed to amortize the unfunded actuarial accrued liability.

The actuarial value of assets used for funding purposes is derived as follows: prior year actuarial value of assets is increased by contributions and expected investment income and reduced by refunds, benefit payments and expenses. To this amount 25% of the difference between expected and actual investment income for each of the previous four years is added. As of June 30, 2012, the actuarial value is no longer limited in the degree it can vary from market value by use of a 20% corridor. This change was recommended in the latest experience study and is consistent with the asset valuation method used in the other PERA plans.



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Assumptions Used for the Valuation

Economic Assumptions (effective with June 30, 2018 valuation, unless otherwise noted)

Assumed Rate of Investment Return. 7.25%, net of investment expenses.

Price Inflation. 2.50% per annum, compounded annually.

Real Investment Return. 4.75% per annum compounded annually.

Payroll Growth. 3.00% per year.

Salary Increases (effective with June 30, 2020 valuation). Annual salaries of active members are assumed to increase at an annual rate of 3.25% per year.

Administrative Expenses. 0.50% of payroll.

Demographic Assumptions (effective with June 30, 2017 valuation)

Rates of Retirement. These rates are used to measure the probability of an eligible magistrate retiring at the indicated ages.

Active Magistrates Retiring Within the Year Following Attainment of Indicated Ages	
Ages	
45-59	30 %
60-65	35
66-69	30
70	100

A member was assumed to be eligible for normal retirement after attaining 24 years of service, regardless of age; age 60 with 15 years of service; or age 65 with 5 (8 if initially became a member on or after July 1, 2014) or more years of service, provided that the member had a minimum of 5 or 8 years of service under the Magistrate Retirement Fund.

Rates of Disability. Beginning with the June 30, 2008 valuation there are assumed to be no future disabled retirees.



Appendix B: Summary of Actuarial Assumptions and Methods

Rates of Separation from Active Membership. The rates are used to measure probabilities of active members terminating that status for a reason other than disability or death. The rates do not apply to magistrates who are eligible for retirement.

Ages	Percent of Active Magistrate Separating Within the Next Year
20	4.00 %
25	4.00
30	4.50
35	5.00
40	5.50
45	6.00
50	6.50
55	7.00
60	7.50

Mortality Assumption (effective with June 30, 2018 valuation). RPH-2014 Blue Collar mortality table with female ages set forward one year. Future improvement in mortality rates is assumed using 60% of the MP-2017 projection scale generationally.

Sample Mortality Rates (Base Rates)								
Pre-Commencement			Post-Commencement			Post-Commencement		
Age	Male	Female	Age	Male	Female	Age	Male	Female
25	0.000733	0.000244	35	0.001793	0.001169	80	0.053460	0.042932
30	0.000717	0.000317	40	0.002156	0.001611	85	0.088524	0.072752
35	0.000797	0.000417	45	0.003275	0.002671	90	0.146859	0.125111
40	0.000958	0.000598	50	0.005604	0.004235	95	0.223428	0.197901
45	0.001455	0.001013	55	0.007342	0.005165	100	0.313988	0.291040
50	0.002490	0.001685	60	0.009893	0.006890	105	Disabled retirees use the same assumption as healthy lives.	
55	0.004071	0.002510	65	0.014089	0.010092	110		
60	0.006743	0.003606	70	0.021101	0.016038	115		
65	0.011612	0.005456	75	0.032952	0.026199	120		



Appendix B: Summary of Actuarial Assumptions and Methods

Miscellaneous and Technical Assumptions

Marriage Assumption:	All members are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses. At retirement, 87% of members are assumed to be married for purposes of valuing death after retirement benefits.
Pay Increase Timing:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur at the beginning of year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Withdrawal decrements do not operate during retirement eligibility.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report and the actual payroll payable at the time contributions are made.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.



Appendix B: Summary of Actuarial Assumptions and Methods

Definitions of Technical Terms

Accrued Service. Service credited under the system which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs. Also referred to as “accrued liability” or “prior service liability.”

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

Actuarial Equivalent. A single amount or series of amounts of equal actuarial present value to another single amount or series of amounts, computed on the basis of appropriate actuarial experience estimates.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment. Also referred to as “present value.”

Amortization. Paying off an interest-discounted amount with periodic payments of interest and principal – as opposed to paying off with a lump sum payment.

Experience Gain (Loss). The difference between actual actuarial costs and anticipated actuarial costs – during the period between two valuation dates.

Normal Cost. The actuarial cost allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and the funding value of assets. Sometimes referred to as the “unfunded accrued liability.”



Appendix C: Summary of Plan Provisions

Membership

Includes all magistrates. Magistrates that received HJC/HB 216 exemptions prior to July 1, 2014 do not become members until the exemptions expire.

Voluntary Retirement

A magistrate may voluntarily retire: (1) at age 65 with 5 (8 if initially became a member on or after July 1, 2014) or more years of service; (2) at age 60 with 15 or more years of service; or (3) at any age with 24 or more years of service. Magistrates with one or more years of service in PERA, ERA or JRA may combine service credits to satisfy these voluntary retirement conditions.

Final Average Salary

For service credit earned before June 30, 2014, the salary received during the last 1 year in office prior to retirement. For service credit earned on or after July 1, 2014, the average salary received for the highest 5 year consecutive period.

Retirement Pension

Annual pension for service prior to 7/1/2014 is equal to:

75% of final average salary (FAS) x 5% x (years of service prior to 7/1/2014 (not exceeding 15) plus 5)

Maximum is 75% of FAS (15 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five year final average salary with a maximum of 85% of five year final average salary. For magistrates whose initial membership is on or after July 1, 2014, annual pension is 3.0% of five year final average salary for each year of service with a maximum of 85% of five year final average salary.

Total benefit is limited to 85% of five year final average salary.

Survivor's Pension – Retired Magistrates

The surviving spouse of a retired magistrate whose initial membership is prior to July 1, 2014 receives a pension of 75% of the magistrate's pension until death. Pension is payable to deceased magistrate's minor and dependent children if there is no eligible surviving spouse. For a magistrate whose initial membership is on or after July 1, 2014, any benefit the surviving spouse receives depends on the payment form elected by the magistrate at retirement.



Appendix C: Summary of Plan Provisions

Survivor's Pension – Active Magistrates

Applicable if magistrate had 5 (8 if initially became a member on or after July 1, 2014) or more years of service. The surviving spouse of a magistrate whose initial membership is prior to July 1, 2014 would receive 75% of magistrate's vested pension until death. The surviving spouse of a magistrate whose initial membership is on or after July 1, 2014 would receive the greater of 30% of final average salary or the accrued normal retirement pension under the 100% joint and survivor payment form. Pension is payable to deceased magistrate's minor and dependent children if there is no eligible surviving spouse.

Disability

Applicable if magistrate has 5 (8 if initially became a member on or after July 1, 2014) or more years of service and becomes incapacitated to perform duties of office. Magistrate would receive vested pension. Service requirement is waived if the disability is duty-related.

Deferred Retirement Pension (Vested Retirement)

If magistrate service terminates after 5 (8 if initially became a member on or after July 1, 2014) years of service, the magistrate and spouse retain entitlement to benefits of the fund.

Annual pension for service prior to 7/1/2014 is equal to:

75% of final average salary (FAS) x 5% x (years of service prior to 7/1/2014 (not exceeding 15) plus 5)

Maximum is 75% of FAS (15 or more years of service). For service credit earned on or after July 1, 2014, 3.5% of five year final average salary with a maximum of 85% of 5 year final average salary. For magistrates whose initial membership is on or after July 1, 2014, annual pension is 3.0% of five year final average salary for each year of service with a maximum of 85% of five year final average salary.

Total benefit is limited to 85% of five year final average salary.

Payment of the magistrate's pension commences at age 60 if the magistrate has 15 or more years of service or at age 65 if the magistrate has 5 (8 if initially became a member on or after July 1, 2014) or more years of service but less than 15 years of service.



Appendix C: Summary of Plan Provisions

Cost-of-Living Increases

Effective July 1, 2014, there will be no COLA increases for 2014 and 2015. Starting July 1, 2016, annual 2% COLA increases will be subject to PERA's certification based on the Fund's current year and projected next year funded ratio being equal to or greater than 100%. At a minimum, a 2% COLA increase will be granted every third year. COLA increases are subject to the following eligibility periods:

- If member retires prior to July 1, 2014, COLA is payable after retirement has been in effect for at least 2 full calendar years.
- If member retires on or after July 1, 2014 but prior to July 1, 2015, COLA is payable after retirement has been in effect for at least 3 full calendar years.
- If member retires on or after July 1, 2015 but prior to July 1, 2017, COLA is payable after retirement has been in effect for at least 4 full calendar years.
- If member retires on or after July 1, 2016, COLA is payable after retirement has been in effect for at least 7 full calendar years.

If retired on account of disability or if at least age 65, the above waiting period is reduced to 1 full calendar year.

Member Contributions

Members contribute 10.5% of salary beginning July 1, 2014

Refund of Magistrate's Contributions

If a magistrate leaves service or dies and no pension becomes payable, the accumulated contributions are refunded or paid to the designated beneficiary.

Public Payments

\$25.00 from each civil action docket fee and \$10 from each civil jury fee paid in the magistrate court. Statutory employer contributions are 15% of salary.



Appendix D: Risk Considerations

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the June 30, 2019 actuarial valuation.

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- external risks such as the regulatory and political environment.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates. The following discussion includes a few exhibits which summarize some historical information to help indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

The investment return on assets is the most obvious risk – and usually the primary risk – to funding a pension plan. To illustrate the magnitude of this risk, the following chart shows the Asset Volatility Ratio (AVR), defined as the fair value of assets divided by covered payroll.



Appendix D: Risk Considerations

HISTORICAL ASSET VOLATILITY RATIOS

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Actuarial Valuation Date	Market Value of Assets	Covered Payroll	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
6/30/2011	\$ 33,198,106	\$ 3,405,121	9.75	3.90%
6/30/2012	\$ 30,852,254	\$ 3,213,712	9.6	3.84%
6/30/2013	\$ 32,439,317	\$ 3,136,834	10.34	4.14%
6/30/2014	\$ 35,184,910	\$ 3,515,567	10.01	4.00%
6/30/2015	\$ 33,187,494	\$ 5,065,798	6.55	2.62%
6/30/2016	\$ 31,038,048	\$ 5,482,360	5.66	2.26%
6/30/2017	\$ 32,225,122	\$ 5,487,517	5.87	2.35%
6/30/2018	\$ 32,092,452	\$ 5,849,815	5.49	2.20%
6/30/2019	\$ 31,797,388	\$ 5,849,795	5.44	2.18%
6/30/2020	\$ 29,070,669	\$ 5,914,106	4.92	1.97%
6/30/2021	\$ 35,164,297	\$ 6,106,006	5.76	2.30%

*The impact of asset smoothing is not reflected in the impact on the Actuarial Contribution Rate (ACR). Current year assumptions are used for all years shown.

The assets as of June 30, 2021 are about 5.8 times the amount of covered payroll. Consequently, underperforming the investment return assumption by 10.00% (i.e., earn -2.75% for one year) is equivalent to about 58% of payroll. While the actual impact of this experience in the first year is mitigated by the asset smoothing method and amortization of the UAL, this table illustrates the risk associated with volatile investment returns. Such an event in one year would be expected to increase the actuarial contribution rate by 2.30% of payroll.



Appendix D: Risk Considerations

HISTORICAL CASH FLOWS

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that may cause significant concerns. This is a metric the investment consultants usually focus on when evaluating the asset allocation. The maturity of the system is the main contributor to the situation.

Actuarial			Benefit		Net Cash
Valuation	Market Value		Payments and	Net Cash	Flow as a
Date	of Assets	Contributions	Expenses	Flow	Percent of
					MVA
6/30/2011	\$ 33,198,106	1,257,878	3,011,024	(1,753,146)	-2.54%
6/30/2012	\$ 30,852,254	1,025,909	3,218,401	(2,192,492)	-4.03%
6/30/2013	\$ 32,439,317	1,158,405	3,432,647	(2,274,242)	-4.09%
6/30/2014	\$ 35,184,910	1,059,164	3,729,633	(2,670,469)	-4.45%
6/30/2015	\$ 33,187,494	1,426,244	4,002,751	(2,576,507)	-4.16%
6/30/2016	\$ 31,038,048	1,867,096	3,988,241	(2,121,145)	-4.83%
6/30/2017	\$ 32,225,122	1,885,718	3,988,281	(2,102,563)	-4.48%
6/30/2018	\$ 32,092,452	1,812,207	4,027,290	(2,215,083)	-4.71%
6/30/2019	\$ 31,797,388	1,875,825	4,109,379	(2,233,554)	-5.57%
6/30/2020	\$ 29,070,669	1,943,040	4,232,441	(2,289,401)	-7.88%
6/30/2021	\$ 35,164,297	2,999,352	4,368,241	(1,368,889)	-3.89%



Appendix D: Risk Considerations

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. Historically, the Fund has been funded with fixed contribution rates by both employees and the employer. In 2020, Senate Bill 122 implemented a monthly distribution of \$100,000 to the Fund until achieving 100% funded status. However, the combined statutory contribution rates have failed to meet the actuarial required contribution in each of the past ten years, when looking to fund the System over 25 years. We would note that with the adoption of SB 122 the Fund is expected to be fully funded in the future, if all assumptions are met.

Funding a retirement system with fixed contribution rates creates some unique funding challenges. Given the extreme volatility associated with the underlying investments of the portfolio, wide variations in the actual return on the market value of assets is expected. However, when it occurs it can change the long-term funding outlook from positive to negative or vice versa. By the time a trend has been identified, it is possible for the funded status of the System to have seriously declined, requiring more substantive resources to compensate for the investment losses.

A key demographic risk for all retirement systems is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.



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PERA

Public Employees
Retirement Association
of New Mexico

INVESTED IN TOMORROW.

**Legislative Division of the
Public Employees Retirement Association of New Mexico
Annual Actuarial Valuation
as of June 30, 2021**





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The experience and dedication you deserve

October 28, 2021

The Retirement Board
Public Employees Retirement Association
Santa Fe, New Mexico

Members of the Board:

We have conducted the annual actuarial valuation of the Legislative Division of the Public Employees Retirement Association (PERA) of New Mexico as of June 30, 2021; the results of the valuation are contained in the following report. The annual valuation is used to determine the contribution requirement that is necessary to fund the annual normal cost and fully amortize the unfunded actuarial accrued liability with annual payments over a 25-year period. The results of this valuation apply to the fiscal year beginning July 1, 2021 and ending June 30, 2022 (FY 2022). Information contained in our report for plan years prior to June 30, 2010 is based upon valuations performed by the association's prior actuary.

In performing the valuation, we relied on data supplied by the Public Employees Retirement Association (PERA) and performed limited tests on the data for consistency and reasonableness. In determining the Fund's liabilities, future events, such as investment returns, deaths, retirements, etc., are anticipated based upon the set of actuarial assumptions as approved by the Board. Senate Bill 72 established a new COLA structure effective July 1, 2020. Under SB 72, future COLAs beginning at July 1, 2023 are provided through a profit-sharing mechanism using PERA's asset performance. Based on Asset Liability Model (ALM) output, we assume future COLA rates equal the 30-year average COLA rates under the median ALM output, currently 1.60% annually.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This actuarial valuation was performed to determine the adequacy of statutory contributions to fund the plan. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.



Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Appendix D of this report provides a discussion of the risk considerations for this division of PERA in compliance with the guidance provided under Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51),

Annual actuarial valuations are performed for PERA which re-measure the assets and liabilities and compute a new actuarially determined contribution. PERA also has experience studies performed every four to five years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and periodic experience studies are practical ways to monitor and reassess risk.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise in the future of any adjustments that we believe would be appropriate.

This is to certify that the undersigned are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Plan.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'John J. Garrett'.

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Bryan Hoge'.

Bryan Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



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Section I: Board Summary



The table below summarizes the results of the June 30, 2021 actuarial valuation as compared with the prior year.

Table I-1: Comparative Summary of Principal Results

Valuation Date	June 30, 2021	June 30, 2020
Actuarial Accrued Liability (AAL)		
Active Members	\$ 11,279,660	\$ 12,093,273
Deferred Vested Members	617,886	582,597
Retired Members and Survivors	20,868,986	19,470,195
Total	\$ 32,766,532	\$ 32,146,065
Actuarial Value of Assets (AVA)	\$ 46,180,779	\$ 44,466,366
Funded Ratio	140.9%	138.3%
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ (13,414,247)	\$ (12,320,301)
Calculation of Required Contribution (Fiscal Year Ending)	June 30, 2022	June 30, 2021
Normal Cost		
Retirement	\$ 965,994	\$ 940,033
Pre-Retirement Survivors	44,436	48,545
Total Normal Cost	\$ 1,010,430	\$ 988,578
Less Expected Member Contribution	68,400	70,800
Employer Normal Cost	\$ 942,030	\$ 917,778
Expected Administrative Expenses	40,000	40,000
UAAL Amortization Amount (25 Years)	(1,137,339)	(1,044,588)
Actuarially Determined Contribution (not less than \$0)	\$ -	\$ -



Section I: Board Summary

Summary of Key Findings

The funding policy for the Plan determines the employer contribution required to fund the annual normal cost plus an amount to fully amortize the unfunded actuarial accrued liability (UAAL) over 25 years. This resulting contribution amount is compared to the expected statutory contribution amount to assess the sufficiency of the statutory contribution. The Plan has a significant surplus of assets over liabilities and the actuarially determined contribution for the Plan in the fiscal year ending June 30, 2022 (FY 2022) is \$0. The employer contribution requirement for FY 2021 was also \$0 as determined in the prior valuation.

The normal cost amount increased from \$988,578 to \$1,010,430. Beginning with the June 30, 2020 valuation, the annual expected administrative expenses of \$40,000 are included in the calculation of the actuarially determined contribution. The UAAL decreased from \$(12.3) million to \$(13.4) million and results in a decrease to the annual amortization amount from \$(1,044,588) to \$(1,137,339). The Plan's funded ratio has increased from 138.3% to 140.9%. We note the following key findings:

- The Plan experienced an actuarial gain on plan assets of \$754,271. This represents a 2.3% increase to the funded ratio. Table III-4 provides the calculation of the actuarial investment loss for this year.
- The Plan experienced a net gain of \$503,083 on plan liabilities due to non-investment related experience, which represents a 2.1% increase to the funded ratio.
- The Plan experienced a net loss of \$116,286 on plan liabilities due to the active legislators' assumed per diem rate increasing by more than the assumed rate. This represents a 0.5% decrease to the funded ratio.

Section II of the report provides summarized information on the membership data used in the valuation. Section III covers the Plan's assets and Section IV covers the Plan's liabilities. The results of the valuation are provided in Section V and the accounting information is in Section VI. The appendices provide additional information on: A) the Plan members, B) the actuarial assumptions and methods, and C) the summary of the benefit provisions of the plan. It is important to note that all information contained in this report for periods prior to June 30, 2010 were produced by a prior actuarial consulting firm.

Section II: Membership Data



Data regarding the membership of the Plan for use in the valuation were furnished by PERA. The following table summarizes the membership data as of June 30, 2021 and is compared with that reported for the prior year.

Table II-1: Summary of Membership Data as of June 30, 2021

Group	June 30, 2021	June 30, 2020
Total Active Members	114	118
Inactive Members*	22	25
Retirees		
Service*	160	155
Disabled	0	0
Beneficiaries	<u>44</u>	<u>40</u>
Total Retirees	204	195
Totals	340	338

* As of June 30, 2021, inactive members include 8 non-vested members with contributions on deposit. Service retirees include 4 co-payees.

Table II-2: Deferred Members, Retired Members and Beneficiaries as of June 30, 2021

Group	Number	Total Annual Benefits	Average Annual Benefits	Average Age
Deferred Vested	14	\$ 90,440	\$ 6,460	55.89
Retirees				
Service*	160	1,763,688	11,023	75.65
Disability	0	0	N/A	N/A
Survivors	<u>44</u>	<u>499,814</u>	11,359	80.89
Retiree Totals	204	\$2,263,502	\$ 11,096	76.78
Total	218	\$2,353,942	\$ 10,798	75.44

* Includes 4 co-payees.

Section III: Plan Assets



The following tables provide information on PERA's market value of assets and the development of the actuarial value of assets. The difference between the Fund's total market and actuarial value is allocated to each Division of PERA in relation to the percent of each Division's market value to the market value of the total Fund.

Table III-1: Total PERA Market Value Reconciliation

	June 30, 2021	June 30, 2020
Beginning of Year Market Value	\$ 14,691,984,206	\$ 15,507,545,549
Audit Adjustment	-	-
Revised Beginning of Year Market Value	\$ 14,691,984,206	\$ 15,507,545,549
Revenues:		
a. Member Contributions	\$ 298,572,637	\$ 289,776,597
b. Employer Contributions	379,184,992	367,524,721
c. Appropriations	-	55,900,000
d. Purchases of Service	10,979,261	7,376,041
e. Investment Income		
1. Interest, dividends, etc.	404,664,374	295,948,452
2. Realized/Unrealized gains (losses)	3,478,447,098	(457,794,648)
3. Security lending and other gains (losses)	2,016,817	3,072,416
f. Other Income	1,990,689	1,645,633
g. Settlement Award	-	-
h. Total Revenues	\$ 4,575,855,868	\$ 563,449,212
Expenditures:		
a. Benefit Payments	\$ 1,314,819,963	\$ 1,255,018,086
b. Refunds of member contributions	40,353,832	44,903,265
c. Investment expenses	85,987,601	64,770,855
d. Administrative expenses	12,730,398	14,318,349
e. Total Expenditures	\$ 1,453,891,794	\$ 1,379,010,555
End of Year Market Value	\$ 17,813,948,280	\$ 14,691,984,206

Section III: Plan Assets



The actuarial value of assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The actuarial value is first determined for the total PERA assets and is calculated by spreading the recognition of unexpected investment income over four years. The amount of unexpected investment income in each year is the difference between expected actuarial value investment income and actual market value investment income. Table III-2 provides the calculation of the actuarial value of assets for PERA.

**Table III-2: Development of Actuarial Value of Assets as of June 30, 2021
(Total PERA Fund Balance)**

1. Actuarial Value Beginning of Year	\$	15,782,305,304
2. Market Value End of Year		17,813,948,280
3. Revised Market Value Beginning of Year		14,691,984,206
4. Cash Flow		
a. Contributions & Appropriations	\$	677,757,629
b. Service Purchases		10,979,261
c. Benefit Payments and Refunds		(1,355,173,795)
d. Administrative Expenses		(12,730,398)
e. Other		1,990,689
f. Net	\$	(677,176,614)
5. Investment Income		
a. Market Total (2 - 3 - 4f)	\$	3,799,140,688
b. Assumed Rate		7.25 %
c. Amount for Immediate Recognition		1,119,669,482
d. Amount for Phased-In Recognition		2,679,471,206
6. Phased-In Recognition of Investment Income		
a. Current Year: $0.25 * 5d$	\$	669,867,802
b. First Prior Year (2019/2020)	$\$(1,328,985,588) \times 25\%$	(332,246,397)
c. Second Prior Year (2018/2019)	$\$ (150,214,662) \times 25\%$	(37,553,666)
d. Third Prior Year (2017/2018)	$\$ (73,898,297) \times 25\%$	(18,474,574)
e. Total Recognized Investment Gain	\$	281,593,165
7. Audit Adjustment	\$	-
8. Actuarial Value End of Year (1 + 4f + 5c + 6e + 7)	\$	16,506,391,337
9. Difference Between Market & Actuarial Values (2 - 8)	\$	1,307,556,943
10. Rate of Return on Actuarial Value		9.07 %
11. Actuarial Value as a Percentage of Market Value		92.66 %



Section III: Plan Assets

The actuarial valuation adjustment is the difference between the actuarial value of assets, derived in Table III-2, and the total PERA fund balances at market value. The adjustment is allocated to each division of PERA in proportion to the total PERA fund balance at market value. The portion allocated to the Legislative Division was approximately 0.28% of the total PERA fund balance and is calculated in Table III-3.

Table III-3: Allocation of Actuarial Value of PERA Assets as of June 30, 2021

	Legislative Division	PERA Totals
Member Contribution Fund	\$ 772,206	\$ 2,851,406,582
Employer Contribution Fund	36,112,696	4,423,360,474
Retirement Reserve Fund	12,954,096	10,539,181,224
Total Fund Balances	\$ 49,838,998	\$ 17,813,948,280
Actuarial Valuation Adjustment	(3,658,219)	(1,307,556,943)
Total Actuarial Value of Assets	\$ 46,180,779	\$ 16,506,391,337

The actuarial valuation assumes the rate of investment return on the assets of the Plan is 7.25%. This assumption is based upon the reasonable long-term expected return on the assets. In each year, the Plan will experience actuarial gains and losses due to the actual investment return of the assets. Table III-4 provides the calculation of the gain or loss due to the investment experience on the actuarial value of assets for the year ended June 30, 2021.

Table III-4: Actuarial Investment Gain (Loss) for the Year Ended June 30, 2021

1. Beginning of Year Actuarial Value of Assets (AVA)	\$ 44,466,366
2. Employee and Employer Contributions	111,200
3. Benefit Payments	(2,265,611)
4. Administrative Expenses	(35,645)
5. Other	5,574
6. Interest $[1 \times 7.25\% + (2 + 3 + 4 + 5) \times 7.25\% \times 0.5]$	3,144,624
7. Expected End of Year AVA	\$ 45,426,508
8. Actual End of Year AVA	46,180,779
9. Actuarial Investment Gain (Loss) (8 - 7)	\$ 754,271



Section IV: Plan Liabilities

The total actuarial present value of benefits is the value of all future benefits expected to be paid to current members of the Plan as of the valuation date. An actuarial cost method allocates each individual's present value of benefits to past and future years of service. The actuarial accrued liability includes the portion of the active member present value of benefits allocated to past service as well as the entire present value of benefits for retirees, beneficiaries and inactive members. The portion of the actuarial present value allocated to the future service of active members is called the present value of future normal costs. Table IV-1 presents the calculation and allocation of the actuarial present value of benefits.

Table IV-1: Allocation of the Actuarial Present Value of Benefits as of June 30, 2021

	Actuarial Accrued Liability	Present Value of Future Normal Cost	Actuarial Present Value of Benefits
Active Members			
Service Retirement	\$ 10,894,710	\$ 4,679,030	\$ 15,573,740
Disability Retirement	-	-	-
Survivor Benefits	384,950	180,574	565,524
Total for Active Members	\$ 11,279,660	\$ 4,859,604	\$ 16,139,264
Inactive Members	\$ 617,886		\$ 617,886
Retirees and Beneficiaries			
Service Retirements	\$ 17,281,778		\$ 17,281,778
Disability Retirements	-		-
Beneficiaries	3,587,208		3,587,208
Total for Retirees and Beneficiaries	\$ 20,868,986		\$ 20,868,986
Total	\$32,766,532	\$4,859,604	\$37,626,136



Section IV: Plan Liabilities

Under the valuation funding method, an unfunded actuarial accrued liability (UAAL) exists to the extent that the actuarial accrued liability exceeds the actuarial value of assets as presented in Section III. The calculation of the UAAL as of the valuation date is shown in Table IV-2.

Table IV-2: Calculation of the Unfunded Actuarial Accrued Liability and Funded Ratio

	June 30, 2021	June 30, 2020
1. Actuarial Accrued Liability	\$ 32,766,532	\$ 32,146,065
2. Actuarial Value of Assets	<u>46,180,779</u>	<u>44,466,366</u>
3. Unfunded Actuarial Accrued Liability (1 - 2)	\$ (13,414,247)	\$(12,320,301)
Funded Ratio (2 / 1)	140.9%	138.3%

Although the terminology used to describe the excess of the Plan's actuarial accrued liability over the Plan's actuarial value of assets is call the "unfunded" actuarial accrued liability, the actuarially determined contribution in the valuation includes an amortization payment amount sufficient to fully amortize the UAAL within 25 years.

The funded ratio of the Plan is the ratio of the actuarial value of assets to the actuarial accrued liability as of the valuation date. As of June 30, 2021, the funded ratio of the Plan is 140.9% as compared to a ratio of 138.3% as of June 30, 2020. The ratio is a commonly used measure of the funding progress and can be useful in reviewing the historical trend of a plan's funding progress. Such a review should also consider the impact to this measure over the historical period due to changes to plan benefits, changes to the actuarial assumptions and methods, and significant impact that investment experience can have on the ratio over short-term periods. We caution that no single "point in time" measure can provide a universal basis for comparing one plan's funded status to another.



Section IV: Plan Liabilities

The calculation of the Plan's actuarial assets and liabilities requires the use of several assumptions concerning the future experience of the Plan and its members. In each annual valuation, the latest year of actual experience is compared to that expected by the prior valuation. The differences are actuarial gains and losses which decrease or increase the UAAL. Table IV-3 provides the reconciliation of the UAAL.

Table IV-3: Reconciliation of the UAAL

	UAAL	Funded Ratio
1. Beginning of Year	\$ (12,320,301)	138.3 %
2. Normal Cost	988,578	
3. Expected Contributions	(70,800)	
4. Other Income + Expenses	30,071	
5. Interest [$1 \times 7.25\% + (2 + 3 + 4) \times 7.25\% \times 0.5$]	(858,862)	
6. Expected End of Year	\$ (12,231,314)	136.9 %
7. Actuarial Experience (Gain) / Loss		
Additional Contributions (with interest)	\$ (41,865)	0.1 %
Investment Experience	(754,271)	2.3 %
Loss due to Per Diem rate increase more than 3%	116,286	(0.5)%
Liability Experience	(503,084)	2.1 %
Assumption Changes	-	0.0 %
Total Actuarial Experience (Gain) / Loss	\$ (1,182,933)	
8. Actual End of Year (6 + 7)	\$ (13,414,247)	140.9 %



Section V: Actuarial Funding Calculation

Section IV of this report presented the Plan's actuarial accrued liability as the portion of the present value of benefits allocated to past years of service. The portion of the active members' present value of benefits allocated to future years of service is funded through annual normal cost contributions comprised of both active member and employer contributions. The portion of the total annual normal cost amount in excess of the expected amount of active member contributions is the employer portion of the Plan's normal cost. The normal cost amount was developed as of the valuation date and presented in Table V-1.

The employer's minimum contribution necessary to satisfy the funding policy is the dollar amount required to fund the annual normal cost of the Plan and fully amortize the UAAL over 25 years in constant dollar amounts. The calculation of the contribution requirement is provided in Table V-1.

**Table V-1: Calculation of Required Employer Contribution
for Fiscal Year Ending June 30, 2021**

1. Present Value of Future Benefits	\$ 37,626,136
2. Present Value of Future Normal Costs	4,859,604
3. Actuarial Accrued Liability (1 - 2)	\$ 32,766,532
4. Actuarial Value of Assets	46,180,779
5. Unfunded Actuarial Accrued Liability (UAAL) (3 - 4)	\$ (13,414,247)
6. UAAL Amortization Payment (25 years)	(1,137,339)
7. Total Normal Cost	1,010,430
8. Less: Expected Employee Contribution	68,400
9. Employer Normal Cost (7-8)	942,030
10. Expected Administrative Expenses	40,000
11. Actuarially Determined Contribution (6 + 9 + 10, not less than \$0)	\$ -



Section VI: Additional Disclosure Information

The tables provided in this section present information relevant for the annual financial reporting of the Fund. GASB Statement No. 67 required disclosure information will be provided in a separate supplemental report. Additional disclosure information is provided below.

Table VI-1: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)
6/30/2021	\$ 46,180,779	\$32,766,532	\$(13,414,247)	140.9 %
6/30/2020	44,466,366	32,146,065	(12,320,301)	138.3 %
6/30/2019	43,139,113	31,520,834	(11,618,279)	136.9 %
6/30/2018	42,602,900	30,939,745	(11,663,155)	137.7 %
6/30/2017	42,479,371	28,056,686	(14,422,685)	151.4 %
6/30/2016	40,450,852	27,942,951	(12,507,901)	144.8 %
6/30/2015	36,868,121	26,610,331	(10,257,790)	138.5 %
6/30/2014	33,392,919	25,833,342	(7,559,577)	129.3 %
6/30/2013	28,939,243	25,127,311	(3,811,932)	115.2 %
6/30/2012	25,168,813	27,429,263	2,260,450	91.8 %
6/30/2011	23,508,201	26,347,359	2,839,158	89.2 %
6/30/2010	22,125,806	26,675,356	4,549,550	82.9 %
6/30/2009	21,156,210	24,345,140	3,188,930	86.9 %
6/30/2008	19,999,435	21,414,312	1,414,877	93.4 %
6/30/2007	17,142,953	19,591,914	2,448,961	87.5 %

Section VI: Additional Disclosure Information



Table VI-2: Solvency Test

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ 772,206	\$ 21,486,872	\$ 10,507,454	\$ 46,180,779	100.00%	100.00%	100.00%
6/30/2020	823,365	20,052,792	11,269,908	44,466,366	100.00	100.00	100.00
6/30/2019	751,334	21,102,594	9,666,906	43,139,113	100.00	100.00	100.00
6/30/2018	808,527	18,493,679	11,637,539	42,602,900	100.00	100.00	100.00
6/30/2017	753,758	18,105,164	9,197,764	42,479,371	100.00	100.00	100.00

Table VI-3: Schedule of Retirants Added to and Removed from Rolls

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	17	\$ 285,334	8	\$ 139,483	204	\$ 2,263,502	6.89 %	\$ 11,096
6/30/2020	6	87,219	5	44,912	195	2,117,651	2.04 %	10,860
6/30/2019	17	255,728	6	48,710	194	2,075,344	11.08 %	10,698
6/30/2018	5	95,699	8	112,239	183	1,868,326	(0.88)%	10,209
6/30/2017	14	218,597	10	83,281	186	1,884,866	7.73 %	10,134



Table VI-4: Summary of Actuarial Methods and Assumptions

Valuation Date	June 30, 2021
Actuarial cost method	Entry Age Normal
Amortization method	Level Dollar, Open
Remaining amortization period	25 years
Asset valuation method	4-year Smoothed Market
Actuarial assumptions:	
Investment rate of return*	7.25%
Administrative Expenses	\$40,000 annually
Projected increase in per diem rate	3.00%
Post-retirement benefit increases	1.60% compounded annually, based upon 30 year average of median COLA output from latest Asset Liability Model.
	(2.50% for certain retirees and disabled participants age 75 or older or with annual benefits less than \$25,000 and at least 25 years of service at retirement)
* Includes inflation at 2.50%	



Appendix A: Additional Membership Data

Table A-1: Schedule of Active Participant Data as of June 30, 2021

Nearest Age	Completed Years of Service							Total
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	
Under 30	1							1
30 to 34	1	2						3
35 to 39	4	1						5
40 to 44	8	2						10
45 to 49	6	2	3	1				12
50 to 54	3	4	3					10
55 to 59	5	4	2			1		12
60	1			1	1			3
61	2	2						4
62	1			1	2			4
63	3	2						5
64	2		1		1			4
65		2				1		3
66		1						1
67	1	1	1					3
68	1	2		1		1	1	6
69	1	2	2					5
70	1				1			2
71	2	1	2	2		1		8
72	1	1		2				4
73								
74	2			1		1	1	5
75								
76	1							1
77					1			1
78								
79				1				1
80 & Over	1							1
Total	48	29	14	10	6	5	2	114

Average Age: 58.25

Average Service: 8.44



Appendix A: Additional Membership Data

**Table A-2: Number of Annual Retirement Allowances of Benefit Recipients
as of June 30, 2021**

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
Normal Retirement Pensions			
Single Life Pension Terminating Upon Death	99	\$ 1,020,780	\$ 10,311
Two Life 100% Survivor Pension			
Retired Member Recipient	52	642,416	12,354
Survivor Recipient	25	276,249	11,050
Two Life 50% Survivor Pension			
Retired Member Recipient	11	134,556	12,232
Survivor Recipient	6	30,735	5,123
Total Normal Retirement Pensions	193	\$ 2,104,736	\$ 10,905
Pre-Retirement Survivor Pensions			
Spouse Recipient	11	\$ 158,766	\$ 14,433
Total Pre-Retirement Survivor Pensions	11	\$ 158,766	\$ 14,433
Total Pensions Being Paid	204	\$ 2,263,502	\$ 11,096



Appendix A: Additional Membership Data

Table A-3: Distribution of Participants Receiving Benefits as of June 30, 2021

Attained Age	Retired Member		Survivor Beneficiaries		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
Under 40			1	\$ 5,352	1	\$ 5,352
40 to 44						
45 to 49	2	\$ 22,315			2	22,315
50 to 54	4	43,032	1	6,982	5	50,014
55 to 59	7	97,329	1	7,586	8	104,915
60 to 64	7	72,796			7	72,796
65 to 69	23	277,043	3	59,075	26	336,118
70 to 74	36	405,867	4	59,477	40	465,344
75 to 79	28	343,715	6	61,948	34	405,663
80 to 84	20	183,220	9	106,311	29	289,531
85 to 89	24	234,489	8	44,142	32	278,631
90 to 94	8	67,838	9	141,523	17	209,361
95 to 99			2	7,418	2	7,418
100 & Over	1	16,044			1	16,044
Total	160	\$ 1,763,688	44	\$ 499,814	204	\$ 2,263,502

**Table A-4: Distribution of Retirees by Years of Service at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	Years of Credited Service at Retirement							
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total
Average Monthly Benefit*	\$540	\$465	\$848	\$1,117	\$1,387	\$1,166	\$1,707	\$929
Number of Retirees*	9	34	47	24	20	7	10	151

* Does not include 5 retirees with missing years of service at retirement.



Appendix A: Additional Membership Data

**Table A-5: Distribution of Recent Retiree Ages at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	2016-17 Retirees	2017-18 Retirees	2018-19 Retirees	2019-20 Retirees	2020-21 Retirees	All Current Retirees
Number	11	3	12	1	11	156
Average Monthly Benefit at Retirement	\$1,117	\$1,435	\$1,648	\$5,293	\$1,449	\$1,039
Average Attained Age at Retirement	67.70	68.33	64.42	56.42	71.18	64.06

Table A-6: Status Reconciliation

	Active Members	Terminated Members *	Pension Recipients			Total
			Service Retired**	Disability Retired	All Beneficiaries	
June 30, 2020	118	25	155	0	40	338
Increase (Decrease) From:						
Service Retirement	(11)		11			
Disability Retirement						
Deaths	(1)		(8)			(9)
Survivors					4	4
Co-Payee			2			2
Other Pension Terminations						
Vested Terminations						
Non-Vested Terminations		(3)				(3)
New Entrants/Rehires	8					8
Data Adjustments						
June 30, 2021	114	22	160	0	44	340

* Includes 14 deferred vested members, 8 terminated members with contributions on deposit at June 30, 2021.

** Includes 4 co-payees.



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Cost Methods Used for the Valuation

An actuarial cost method is a procedure for allocating the actuarial present value of benefits and expenses to time periods. The method used for this valuation is known as the entry age normal level dollar cost method and has the following characteristics:

- i) The total present value of projected benefits of each individual is allocated on a level basis over service from entry age to retirement age. The portion of this present value allocated to the valuation year is the normal cost.
- ii) The actuarial liability is the accumulation of past normal costs on the valuation date.

Board Funding Policy: Amortize the unfunded actuarial accrued liability (the difference between the actuarial accrued liability and accrued assets) over an open 30-year period. This is done in accordance with PERA Board funding objectives adopted October 1996. As of June 30, 2021, funding value of assets exceeded accrued liabilities. The excess was amortized over 25 years and applied as a credit to the computed employer normal cost and expected administrative expenses.

The actuarial value of assets used for funding purposes is derived as follows: prior year total actuarial value of assets for each PERA division is increased by contributions and expected investment income and reduced by refunds, benefit payments and expenses. To this amount 25% of the difference between expected and actual investment income for each of the previous four years is added. The actuarial value of assets for each division is allocated in proportion to the total PERA Fund balance at market value.



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Assumptions Used for the Valuation

The rate of investment return (effective June 30, 2018): 7.25% per annum net of investment expenses.

Annual Post-retirement Cost of Living Adjustment rate: 1.60% per year beginning 7/1/2023.

Administrative expenses: \$40,000.

The rates of separation from active membership: None.

The rates of active member disability: None.

The rate of increase in the per diem was 3.0% per annum. This assumption was first used in the June 30, 2004 valuation and was based on an observed trend in the per diem rate prior to that valuation. The current assumed per diem rate is \$194.

The rate of retirement from active membership (effective with the June 30, 2020 valuation): 50% of members were assumed to retire immediately upon satisfying age and service requirements, with 100% assumed to retire at age 80.

It was assumed that any service rendered by a legislator prior to the valuation date and not already purchased would not be purchased.



Appendix B: Summary of Actuarial Assumptions and Methods

Mortality Assumption: RPH-2014 Blue Collar mortality table with female ages set forward one year. Future improvement in mortality rates is assumed using 60% of the MP-2017 projection scale generationally.

Sample Mortality Rates (Base Rates)								
Pre-Commencement			Post-Commencement			Post-Commencement		
Age	Male	Female	Age	Male	Female	Age	Male	Female
25	0.000733	0.000244	35	0.001793	0.001169	80	0.053460	0.042932
30	0.000717	0.000317	40	0.002156	0.001611	85	0.088524	0.072752
35	0.000797	0.000417	45	0.003275	0.002671	90	0.146859	0.125111
40	0.000958	0.000598	50	0.005604	0.004235	95	0.223428	0.197901
45	0.001455	0.001013	55	0.007342	0.005165	100	0.313988	0.291040
50	0.002490	0.001685	60	0.009893	0.006890	105	Disabled retirees use the same assumption as healthy lives.	
55	0.004071	0.002510	65	0.014089	0.010092	110		
60	0.006743	0.003606	70	0.021101	0.016038	115		
65	0.011612	0.005456	75	0.032952	0.026199	120		



Appendix B: Summary of Actuarial Assumptions and Methods

Miscellaneous and Technical Assumptions

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	N/A.
Decrement Timing:	Decrements are assumed to occur at the beginning of the year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study without adjustment for multiple decrement table effects.
Incidence of Contributions:	Contributions are assumed to be received at the beginning of the year.
Normal Form of Benefit:	Straight life.
Credited Service:	Service nearest the whole year is used to determine the amount of benefit payable.



Appendix B: Summary of Actuarial Assumptions and Methods

Definitions of Technical Terms

Actuarial Accrued Liability. The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs.

Actuarial Cost Method. A mathematical procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal cost and actuarial accrued liability.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.

Amortization. Paying off an amount with periodic payments of interest and principal – as opposed to paying off with a lump sum payment.

Experience Gain (Loss). The difference between actual actuarial costs and anticipated actuarial costs – during the period between two valuation dates.

Normal Cost. The actuarial cost allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and the actuarial value of assets. Sometimes referred to as “unfunded accrued liability.”



Appendix C: Summary of Plan Provisions

Voluntary Retirement

Plan 1 and Plan 1 Enhanced:

Age 65 with 5 or more years of credited service; age 64 with 8 or more years of credited service; age 63 with 11 or more years of credited service; age 60 with 12 or more years of credited service; or any age with 14 or more years of credited service.

Plan 2:

Age 65 with 5 or more years of credited service or any age with 10 or more years of credited service.

Superannuation Annuity

Plan 1: \$250 a year times credited service.

Plan 1 Enhanced: \$500 a year times credited service.

Plan 2: 11% of the per diem rate in effect, pursuant to Section 2-1-8 NMSA on the January 1 of the calendar year that the member retires multiplied by 60 and further multiplied by credited service.

Deferred Annuity

A Legislative member who terminates with 5 or more years of credited service may apply for a superannuation annuity upon reaching voluntary retirement date, provided accumulated contributions are not withdrawn. The annuity is based upon Legislative service credit at time of termination.

Survivor Pensions – Death in the Line of Duty

Pensions are paid to the eligible spouse and eligible children if survivor coverage has not been elected under the Elective Survivor Pension Beneficiary provision. The amount of pension payable for life to an eligible spouse is 80% of the accrued normal retirement pension.



Appendix C: Summary of Plan Provisions

Survivor Pensions – Death Not In the Line of Duty

Requires 5 years of credited service. Benefit applies to members and vested former members who have not elected coverage under the Elective Survivor Pension Beneficiary provision. Pensions are paid to an eligible spouse OR eligible children. The amount of pension payable for the life of an eligible spouse is up to 80% of accrued normal retirement pension. An eligible child pension is paid if there is not an eligible spouse or following the death of an eligible spouse. The amount of pension payable to each eligible child is an equal share of 50% of accrued normal retirement pension. An eligible child is an unmarried natural or adopted child who is under age 18. A child's pension terminates upon death, marriage or reaching age 18. The pension of any remaining eligible children is recalculated whenever a child's pension is terminated.

Member's Contributions

Plan 1: \$100 for each year of credited service.
Plan 1 Enhanced: \$200 for each year of credited service
Plan 2: \$600 for each year of credited service.

Elective Survivor Beneficiary Pension

Applicable to members with 5 or more years of credited service and vested former members who have elected option B and designated a survivor pension beneficiary who has an insurable interest. The amount of pension is the amount of accrued normal retirement pension under optional form of payment B (100% continuation to beneficiary).

Disability Retirement

Applicable to members and vested former members with 5 or more years of credited service. The 5 year credited service requirement is waived if the disability is incurred in the line of duty. The amount of disability pension is the accrued normal retirement pension at time of disability retirement. If the disability is in the line of duty, the credited service used is the amount that would have been acquired when first eligible for normal retirement.

State's Contributions

Annual appropriations to finance portions of benefits not financed by members' contributions, determined by actuarial valuation.



Appendix C: Summary of Plan Provisions

Cost-of-Living Increases

Effective July 1, 2020, there will be no COLA increases for fiscal years 2021, 2022, and 2023 (July 1, 2020, July 1, 2021, and July 1, 2022). In lieu of these COLAs, an annual non-compounding additional payment equal to 2% of annual benefit as of June 30, 2020 (inclusive of all past COLAs) will be payable.

Beginning July 1, 2023 and each July 1 thereafter, the COLA increase will be determined as an amount equal to the smoothed investment rate of return on the actuarial value of assets on June 30 of the preceding calendar year, less the COLA “hurdle rate,*” multiplied by the funded ratio on June 30 of the preceding calendar year; or 0.5%, whichever is greater, subject to the following:

- If the funded ratio of the fund is less than 100% on June 30 of the preceding calendar year, the COLA amount shall not exceed 3.0%.
- If the funded ratio of the fund is greater than or equal to 100% on June 30 of the preceding calendar year, the COLA amount shall not exceed 5.0%.
- The minimum COLA amount for any year will be 0.5%.

Pensions are increased by the COLA amount determined above each July 1 subject to the following eligibility periods:

- Retirees who have been retired for at least 2 full calendar years.
- Retirees who attained at least age 65 and have been retired for at least 1 full calendar year.
- Disabled retirees who have been retired for at least 1 full calendar year.
- Survivor beneficiaries who have received a survivor pension for at least 2 full calendar years.
- Survivor beneficiaries of a deceased retiree who otherwise would have been retired for at least 2 full calendar years.

For certain retirees, pensions are increased each July 1 by 2.5% subject to the eligibility periods listed above, provided the conditions below are met:

- Retirees who retired with at least 25 years of service and whose annual pension is \$25,000 or less.
- Disabled retirees whose annual pension is \$25,000 or less.
- Retirees and survivor beneficiaries who attained at least age 75 prior to July 1, 2020.

*The COLA “hurdle rate” is the investment rate of return required to fund a COLA in excess of 0.5% as determined by the fund’s actuaries.



Appendix D: Risk Considerations

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the June 30, 2019 actuarial valuation.

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- external risks such as the regulatory and political environment.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates. The following discussion includes a few exhibits which summarize some historical information to help indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

The investment return on assets is the most obvious risk – and usually the primary risk – to funding a pension plan.



Appendix D: Risk Considerations

HISTORICAL CASH FLOWS

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that may cause significant concerns. This is a metric the investment consultants usually focus on when evaluating the asset allocation. The maturity of the system is the main contributor to the situation.

Actuarial Valuation Date	Market Value of Assets	Contributions	Benefit Payments and Expenses	Net Cash Flow	Net Cash Flow as a Percent of MVA
6/30/2010	\$ 18,067,287	2,041,200	1,238,536	802,664	4.44%
6/30/2011	\$ 23,737,231	2,646,327	1,282,394	1,363,933	5.75%
6/30/2012	\$ 25,088,375	2,891,627	1,320,655	1,570,972	6.26%
6/30/2013	\$ 29,497,852	2,466,600	1,478,775	987,825	3.35%
6/30/2014	\$ 35,646,813	2,466,800	1,617,774	849,026	2.38%
6/30/2015	\$ 37,243,656	2,462,500	1,634,020	828,480	2.22%
6/30/2016	\$ 38,059,885	2,463,400	1,778,396	685,004	1.80%
6/30/2017	\$ 41,449,421	1,057,700	1,897,287	(839,587)	-2.03%
6/30/2018	\$ 42,366,200	49,600	1,930,078	(1,880,478)	-4.44%
6/30/2019	\$ 43,039,409	96,650	2,020,264	(1,923,614)	-4.47%
6/30/2020	\$ 41,394,406	1,171,586	2,187,495	(1,015,909)	-2.45%
6/30/2021	\$ 49,838,998	111,200	2,295,682	(2,184,482)	-4.38%



Appendix D: Risk Considerations

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. Historically, the Fund has been funded with fixed contributions by both employees and the employer. The Fund has maintained a significant surplus of assets over liabilities for the last ten years.

Funding a retirement system with fixed contribution rates creates some unique funding challenges. Given the extreme volatility associated with the underlying investments of the portfolio, wide variations in the actual return on the market value of assets is expected. However, when it occurs it can change the long-term funding outlook from positive to negative or vice versa. By the time a trend has been identified, it is possible for the funded status of the System to have seriously declined, requiring more substantive resources to compensate for the investment losses.

A key demographic risk for all retirement systems is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.



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PERA

Public Employees
Retirement Association
of New Mexico

INVESTED IN TOMORROW.

**Volunteer Firefighters Retirement Fund of New Mexico
Annual Actuarial Valuation
as of June 30, 2021**





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The experience and dedication you deserve

October 28, 2021

The Retirement Board
Public Employees Retirement Association
Santa Fe, New Mexico

Members of the Board:

We have conducted the annual actuarial valuation of the Volunteer Firefighters Retirement Fund as of June 30, 2021; the results of the valuation are contained in the following report. The annual valuation is used to determine the sufficiency of the statutory contribution rates and, if necessary, the amount required to fund the annual normal cost and fully amortize the unfunded actuarial accrued liability with annual payments over a 25-year period. The results of this valuation apply to the fiscal year beginning July 1, 2021 and ending June 30, 2022 (FY 2022). Information contained in our report for plan years ending prior to June 30, 2010 is based upon valuations performed by the Fund's prior actuary.

In performing the valuation, we relied on data supplied by the Public Employees Retirement Association (PERA) and performed limited tests on the data for consistency and reasonableness. In determining the Fund's liabilities, future events, such as investment returns, deaths, retirements, etc., are anticipated based upon the set of actuarial assumptions as approved by the Board.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: fund experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This actuarial valuation was performed to determine the adequacy of statutory contributions to fund the plan. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Actuarial valuations include the risk that actual future measurements will deviate from expected future measurements due to actual experience that is different than the actuarial assumptions.



The primary areas of risk in this actuarial valuation are:

- Investment Risk – the potential that investment returns will be different than expected.
- Longevity and Other Demographic Risks – the potential that mortality or other demographic experience will be different than expected.
- Contribution Risk – The potential that actual contributions are different than the actuarially determined contributions.

Annual actuarial valuations are performed for PERA which re-measure the assets and liabilities and compute a new actuarially determined contribution. PERA also has experience studies performed every four to five years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and periodic experience studies are practical ways to monitor and reassess risk.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise in the future of any adjustments that we believe would be appropriate.

This is to certify that the undersigned are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Fund.

Respectfully submitted,

A blue ink signature of John J. Garrett, written in a cursive style.

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

A blue ink signature of Bryan Hoge, written in a cursive style.

Bryan Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



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Section I: Board Summary



The table below summarizes the results of the June 30, 2021 actuarial valuation as compared with the prior year.

Table I-1: Comparative Summary of Principal Results

Valuation Date	June 30, 2021	June 30, 2020
Actuarial Accrued Liability (AAL)		
Active Members	\$ 17,295,152	\$ 17,510,145
Deferred Vested Members	4,599,224	4,821,553
Non-Vested Inactive Members*	244,699	718,655
Retired Members and Survivors	<u>28,011,888</u>	<u>27,289,313</u>
Total	\$ 50,150,963	\$ 50,339,666
Actuarial Value of Assets (AVA)	\$ 78,490,185	\$ 73,916,369
Funded Ratio	156.5 %	146.8 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - AVA)	\$ (28,339,222)	\$ (23,576,703)
Calculation of Required Contribution (Fiscal Year Ending)	June 30, 2022	June 30, 2021
Normal Cost		
Retirement	\$ 1,449,121	\$ 1,477,389
Termination	406,994	415,597
Pre-Retirement Survivors	33,556	34,252
Disability	<u>-</u>	<u>-</u>
Total Normal Cost	\$ 1,889,671	\$ 1,927,238
Expected Administrative Expenses	60,000	60,000
UAAL Amortization Amount (25 Years)	<u>(2,402,767)</u>	<u>(1,998,973)</u>
Actuarially Determined Contribution (not less than \$0)	\$ -	\$ -

* Members with at least 5 years of service and a last reported date within the last 5 years who are not valued as active are valued similarly to deferred vested members in order to recognize potential liability these members hold.



Section I: Board Summary

Summary of Key Findings

The funding policy for the Fund determines the employer contribution required to fund the annual normal cost plus an amount to fully amortize the unfunded actuarial accrued liability (UAAL) over 25 years. This resulting contribution amount is compared to the expected statutory contribution amount to assess the sufficiency of the statutory contribution. The Fund has maintained a significant surplus of assets over liabilities.

The Fund's normal cost contribution decreased from \$1,927,238 to \$1,889,671. The annual amount of expected administrative expenses is added to the normal cost in the calculation of the actuarial determined contribution. The surplus of the Fund's actuarial value of assets over the actuarial accrued liability results in a negative UAAL amount which has decreased from \$(23,576,703) to \$(28,339,222). The funded ratio of the Fund increased from 146.8% to 156.5%. We note the following key findings:

- The Fund experienced an actuarial gain on Fund assets of \$1,357,913 as a result of investment return on the actuarial value of assets being more than the assumed rate. This represents a 2.5% increase to the funded ratio. Table III-3 provides the calculation of the investment gain for this year.
- The Fund experienced a net actuarial gain of \$2,977,461 on Fund liabilities due to non-investment related experience. This represents a 8.8% increase to the funded ratio.
- The Fund received \$777,188 more in contributions than the actuarially determined amount which results in a 1.5% increase to the funded ratio.

Section II of the report provides summarized information on the membership data used in the valuation. Section III covers the Fund's assets and Section IV covers the Fund's liabilities. The results of the valuation are provided in Section V and additional disclosure information is in Section VI. The appendices provide additional information on: A) the Fund members, B) the actuarial assumptions and methods, and C) the summary of the benefit provisions of the Fund. It is important to note that all information contained in this report for periods prior to June 30, 2010 were produced by a prior actuarial consulting firm.



Section II: Membership Data

Data regarding the membership of the Fund for use in the valuation were furnished by PERA. The following table summarizes the membership data as of June 30, 2021 and is compared with that reported for the prior year.

Table II-1: Summary of Membership Data as of June 30, 2021

Group	June 30, 2021	June 30, 2020
Total Active Members	7,830	8,014
Deferred Vested Members	296	309
Non-Vested Inactive Members	19	58
Retirees		
Service*	1,468	1,424
Disabled	0	0
Beneficiaries	<u>122</u>	<u>113</u>
Total Retirees	1,590	1,537
Total	9,735	9,918

Table II-2: Deferred Members, Retired Members and Beneficiaries as of June 30, 2021

Group	Number	Total Annual Benefits	Average Annual Benefits	Average Age
Deferred Vested	296	\$ 451,500	\$ 1,525	61.48
Retirees				
Service*	1,468	2,673,000	1,821	69.98
Disability	0	0	N/A	N/A
Survivors	<u>122</u>	<u>123,798</u>	1,015	74.83
Retiree Totals	1,590	\$2,796,798	\$ 1,759	70.36
Total	1,886	\$3,248,298	\$ 1,722	68.96

*Includes 1 co-payee

Section III: Fund Assets



The following tables provide information on the Fund's market value of assets and cash flow.

Table III-1: Market Value Reconciliation

	June 30, 2021	June 30, 2020
Beginning of Year Market Value	\$ 68,836,980	\$ 71,836,631
Audit Adjustment	-	-
Revised Beginning of Year Market Value	\$ 68,836,980	\$ 71,836,631
Revenues:		
Member Contributions	-	-
Employer Contributions/Appropriations	750,000	750,000
Purchases of Service	-	-
Investment Income		
Interest, dividends, etc.	1,912,188	1,387,214
Realized/Unrealized gains (losses)	16,437,291	(2,154,175)
Security lending	9,531	14,368
Other Income	125	-
Settlement Award	-	-
Total Revenues	\$ 19,109,135	\$ (2,593)
Expenditures:		
Benefit Payments	2,757,990	2,625,832
Refunds of Member Contributions	-	-
Investment Expenses	409,123	304,019
Administrative Expenses	60,201	67,207
Total Expenditures	\$ 3,227,314	\$ 2,997,058
End of Year Market Value	\$ 84,718,801	\$ 68,836,980

The market value rate of return for the plan year was 26.47%. The Fund's cash flow is (2.69)% as a percentage of average market value.

Section III: Fund Assets



The actuarial value of assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The actuarial value of assets has been calculated by spreading the recognition of unexpected investment income over four years. The amount of unexpected investment income in each year is the difference between expected actuarial value investment income and actual market value investment income. Table III-2 provides the calculation of the amount of the current year excess investment income to be phased-in as well as the amount of deferred investment income from prior years calculated in the development of the actuarial value of assets.

Table III-2: Development of Actuarial Value of Assets as of June 30, 2021

1. Actuarial Value Beginning of Year	\$	73,916,369
2. Market Value End of Year		84,718,801
3. Market Value Beginning of Year (with audit adjustment)		68,836,980
4. Cash Flow		
a. Contributions	\$	750,000
b. Service Purchases		-
c. Benefit Payments and Refunds		(2,757,990)
d. Administrative Expenses		(60,201)
e. Other		125
f. Net	\$	(2,068,066)
5. Investment Income		
a. Market Total (2 - 3 - 4f)	\$	17,949,887
b. Assumed Rate		7.25 %
c. Amount for Immediate Recognition		5,283,969
d. Amount for Phased-In Recognition		12,665,918
6. Phased-In Recognition of Investment Income		
a. Current Year: $0.25 \times 5d$	\$	3,166,480
b. First Prior Year (2020)	\$ (6,206,995) x 25%	(1,551,749)
c. Second Prior Year (2019)	\$ (669,317) x 25%	(167,329)
d. Third Prior Year (2018)	\$ (357,957) x 25%	(89,489)
e. Total Recognized Investment Gain	\$	1,357,913
7. Audit Adjustment	\$	-
8. Actuarial Value End of Year (1 + 4f + 5c + 6e + 7)	\$	78,490,185
9. Difference Between Market & Actuarial Values (2 - 8)	\$	6,228,616
10. Rate of Return on Actuarial Value		9.11 %
11. Actuarial Value of Assets as a % of Market Value of Assets		92.6 %



Section III: Fund Assets

The actuarial valuation assumes the rate of investment return on the assets of the Fund is 7.25% annually. This assumption is based upon the reasonable long-term expected return on the assets. In each year, the Fund will experience actuarial gains and losses due to the actual investment return of the assets. Table III-3 provides the calculation of the gain or loss due to the investment experience on the actuarial value of assets for the year ended June 30, 2021.

Table III-3: Actuarial Investment Gain (Loss) for the Year Ended June 30, 2021

1. Beginning of Year Actuarial Value of Assets (AVA)	\$ 73,916,369
2. Employee and Employer Contributions	750,000
3. Benefit Payments	(2,757,990)
4. Administrative Expenses	(60,201)
5. Other	125
6. Interest $[1 \times 7.25\% + (2 + 3 + 4 + 5) \times 7.25\% \times 0.5]$	5,283,969
7. Expected End of Year AVA	77,132,272
8. Actual End of Year AVA	78,490,185
9. Actuarial Investment Gain (Loss) (8 - 7)	\$ 1,357,913



Section IV: Fund Liabilities

The total actuarial present value of benefits is the value as of the valuation date of all future benefits expected to be paid to current members of the Fund. An actuarial cost method allocates each individual's present value of benefits to past and future years of service. The actuarial accrued liability includes the portion of the active member present value of benefits allocated to past service as well as the entire present value of benefits for retirees, beneficiaries and inactive members. The portion of the actuarial present value allocated to the future service of active members is called the present value of future normal costs. Table IV-1 presents the calculation and allocation of the actuarial present value of benefits.

Table IV-1: Allocation of the Actuarial Present Value of Benefits as of June 30, 2021

	Actuarial Accrued Liability	Present Value of Future Normal Cost	Total Actuarial Present Value
Active Members			
Service Retirement	\$14,651,699	\$ 8,297,796	\$22,949,495
Termination Benefits	2,351,115	2,854,099	5,205,214
Disability Retirement	-	-	-
Survivor Benefits	292,338	216,852	509,190
Total for Active Members	\$17,295,152	\$11,368,747	\$28,663,899
Inactive Vested Members and Inactive Holding Liability	\$ 4,843,923		\$ 4,843,923
Retirees and Beneficiaries			
Service Retirements	\$27,024,797		\$27,024,797
Disability Retirements	-		-
Beneficiaries	987,091		987,091
Total for Retirees and Beneficiaries	\$28,011,888		\$28,011,888
Total	\$50,150,963	\$11,368,747	\$61,519,710



Section IV: Fund Liabilities

Under the valuation funding method, an unfunded actuarial accrued liability (UAAL) exists to the extent that the actuarial accrued liability exceeds the actuarial value of assets as presented in Section III. The calculation of the UAAL and Funded Ratio as of the valuation date is shown in Table IV-2.

Table IV-2: Calculation of the Unfunded Actuarial Accrued Liability and Funded Ratio

	June 30, 2021	June 30, 2020
1. Actuarial Accrued Liability	50,150,963	50,339,666
2. Actuarial Value of Assets	78,490,185	73,916,369
3. Unfunded Actuarial Accrued Liability (1 - 2)	(28,339,222)	(23,576,703)
Funded Ratio (2 / 1)	156.5%	146.8%

The funded ratio is the ratio of the actuarial value of assets (Table III-2) to the actuarial accrued liability (Table IV-1) as of the valuation date. As of June 30, 2021, the funded ratio of the Fund is 156.5% as compared to a ratio of 146.8% as of June 30, 2020. The ratio is a commonly used measure of the funding progress and can be useful in reviewing the historical trend of a Fund's funding progress. Such a review should also consider the impact to this measure over the historical period due to changes to Fund benefits, changes to the actuarial assumptions and methods, and the significant impact that investment experience can have on the ratio over short-term periods. We caution that no single "point in time" measure can provide a universal basis for comparing one Fund's funded status to another.



Section IV: Fund Liabilities

The calculation of the Fund's actuarial assets and liabilities requires the use of several assumptions concerning the future experience of the Fund and its members. In each annual valuation, the latest year of actual experience is compared to that expected by the prior valuation. The differences are actuarial gains and losses which decrease or increase the UAAL. Table IV-3 provides the reconciliation of the UAAL.

Table IV-3: Reconciliation of the UAAL

	UAAL	Funded Ratio
1. Beginning of Year	\$ (23,576,703)	146.8 %
2. Normal Cost	1,927,238	
3. Expected Contributions	-	
4. Other Income/Expense	60,076	
5. Interest [$1 \times 7.25\% + (2 + 3 + 4) \times 7.25\% \times 0.5$]	(1,637,271)	
6. Expected End of Year	\$ (23,226,660)	143.7 %
7. Actuarial Experience (Gain) / Loss		
Additional Contributions (with interest)	\$ (777,188)	1.5 %
Investment Experience	(1,357,913)	2.5 %
Liability Experience	(2,977,461)	8.8 %
Total Actuarial Experience (Gain) / Loss	\$ (5,112,562)	
8. End of Year Prior to Assumption/Method/Plan Changes (6 + 7)	\$ (28,339,222)	156.5 %
9. Assumption/Method Changes	-	0.0 %
10. Plan Changes	-	
11. Actual End of Year (8 + 9 + 10)	\$ (28,339,222)	156.5 %



Section V: Actuarial Funding Calculation

Section IV of this report presented the Fund's actuarial accrued liability as the portion of the present value of benefits allocated to past years of service. The portion of the active members' present value of benefits allocated to future years of service is funded through annual normal cost contributions from the employer. The normal cost amount was developed as of the valuation date and presented in Table V-1.

The minimum contribution to satisfy the funding policy is the dollar amount necessary to fund the annual normal cost and expected administrative expenses of the Fund and fully amortize the UAAL over 25 years in constant dollar amounts. This resulting contribution amount is compared to the expected statutory contribution amount to assess the sufficiency of the statutory contribution. As this Fund is in a significant surplus funded position, the annual amortized amount of the surplus offsets most of the Fund's annual normal cost amount. The calculation of the contribution requirement is provided in Table V-1.

**Table V-1: Calculation of Actuarially Determined Contribution
for Fiscal Year Ending June 30, 2021**

1. Present Value of Future Benefits	\$ 61,519,710
2. Present Value of Future Normal Costs	11,368,747
3. Actuarial Accrued Liability (1 - 2)	\$ 50,150,963
4. Actuarial Value of Assets	78,490,185
5. Unfunded Actuarial Accrued Liability (UAAL) (3 - 4)	\$ (28,339,222)
6. UAAL Amortization Payment (25 years)	(2,402,767)
7. Total Normal Cost	1,889,671
8. Expected Administrative Expenses	60,000
9. Total Normal Cost and Administrative Expenses	1,949,671
Actuarially Determined Contribution (6 + 9)	\$ -



Section VI: Additional Disclosure Information

The tables provided in this section present information relevant for the annual financial reporting of the Fund. GASB Statement No. 67 required disclosure information will be provided in a separate supplemental report. Additional disclosure information is provided below.

Table VI-1: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)
6/30/2021	\$ 78,490,185	\$ 50,150,963	\$ -	156.5 %
6/30/2020	73,916,369	50,339,666	-	146.8 %
6/30/2019	72,011,279	50,518,860	-	142.5 %
6/30/2018	69,674,334	49,235,772	-	141.5 %
6/30/2017	67,985,320	46,388,453	-	146.6 %
6/30/2016	64,899,802	45,256,278	-	143.4 %
6/30/2015	61,575,304	43,916,392	-	140.2 %
6/30/2014	57,997,323	41,516,826	-	139.7 %
6/30/2013	52,179,180	37,766,300	-	138.2 %
6/30/2012	47,382,330	28,219,348	-	167.9 %

Table VI-2: Solvency Test

Aggregate Accrued Liabilities For					Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
Valuation Date	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2021	\$ -	\$ 32,855,811	\$ 17,295,152	\$ 78,490,185	N/A	100.00%	100.00%
6/30/2020	-	32,829,521	17,510,145	73,916,369	N/A	100.00	100.00
6/30/2019	-	31,110,078	19,408,782	72,011,279	N/A	100.00	100.00
6/30/2018	-	30,285,764	18,950,008	69,674,334	N/A	100.00	100.00
6/30/2017	-	28,060,938	18,327,515	67,985,320	N/A	100.00	100.00

Section VI: Additional Disclosure Information



Table VI-3: Schedule of Retirants Added to and Removed from Rolls

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2021	92	\$ 159,999	39	\$ 60,700	1,590	\$ 2,796,798	3.68%	\$ 1,759
6/30/2020	131	229,000	23	40,500	1,537	2,697,499	7.51%	1,755
6/30/2019	103	166,999	28	45,300	1,429	2,508,999	5.10%	1,756
6/30/2018	164	290,000	21	33,100	1,354	2,387,300	12.06%	1,763
6/30/2017	123	231,999	25	41,300	1,211	2,130,400	9.83%	1,759

Table VI-4: Summary of Actuarial Methods and Assumptions

Valuation Date	June 30, 2021
Actuarial cost method	Entry Age, Level Dollar
Amortization method	Level Dollar, Open
Remaining amortization period	25 years
Asset valuation method	4-year Smoothed Market
Actuarial assumptions:	
Administrative Expenses	\$60,000 annually
Investment rate of return*	7.25%
* Includes inflation at 2.50%	

Appendix A: Additional Membership Data



Table A-1: Schedule of Active Participant Data as of June 30, 2021

Nearest Age	Completed Years of Service							Total
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	
Under 30	2,016	141	5	0	0	0	0	2,162
30 to 34	812	202	44	7	0	0	0	1,065
35 to 39	601	163	59	24	1	0	0	848
40 to 44	508	166	80	33	13	2	0	802
45 to 49	336	115	59	33	15	11	0	569
50 to 54	309	127	76	37	23	12	5	589
55 to 59	269	125	69	34	17	7	4	525
60	54	17	15	4	5	2	1	98
61	44	20	9	5	1	4	1	84
62	43	25	13	5	4	0	0	90
63	54	24	4	0	1	2	1	86
64	53	19	7	5	4	1	1	90
65	45	18	5	2	4	0	0	74
66	45	14	8	2	1	2	0	72
67	36	24	5	2	1	1	0	69
68	51	23	12	4	0	0	0	90
69	34	18	3	1	0	0	0	56
70	39	11	5	2	2	1	0	60
71	37	12	7	1	2	0	0	59
72	35	11	3	2	3	1	0	55
73	27	18	3	3	0	0	0	51
74	23	24	8	1	0	0	0	56
75	20	8	3	1	0	0	0	32
76	12	11	4	1	1	0	0	29
77	14	10	2	0	0	0	0	26
78	10	7	3	0	0	0	0	20
79	12	5	2	4	0	0	0	23
80 & Over	24	19	6	1	0	0	0	50
Total	5,563	1,377	519	214	98	46	13	7,830

Average Age: 42.03

Average Service: 3.71



Appendix A: Additional Membership Data

**Table A-2: Number of Annual Retirement Allowances of Benefit Recipients
as of June 30, 2021**

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
Two Life 66 2/3% Survivor Pension	1,467	2,672,250	1,822
Single Life Pension	123	124,548	1,013
Total Normal Retirement Pensions	1,590	\$2,796,798	\$ 1,759
Total Pensions Being Paid	1,590	\$2,796,798	\$ 1,759

Table A-3: Distribution of Participants Receiving Benefits as of June 30, 2021

Attained Age	Retired Member*		Survivor		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
Under 40						
40 to 44						
45 to 49			0	\$ -	0	\$ -
50 to 54			2	1,600	2	1,600
55 to 59	113	\$ 222,000	1	2,000	114	224,000
60 to 64	295	586,500	11	12,000	306	598,500
65 to 69	330	610,500	18	19,800	348	630,300
70 to 74	320	576,000	24	22,400	344	598,400
75 to 79	228	379,500	34	34,200	262	413,700
80 to 84	121	195,000	19	18,600	140	213,600
85 to 89	51	85,500	9	9,600	60	95,100
90 to 94	8	13,500	2	1,800	10	15,300
95 to 99	2	4,500	2	1,800	4	6,300
100 & Over						
Total	1,468	\$2,673,000	122	\$123,798	1,590	\$2,796,798

* Includes 1 co-payee



Appendix A: Additional Membership Data

**Table A-4: Distribution of Retirees by Years of Service at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	Years of Credited Service at Retirement							Total
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	
Average Monthly Benefit	\$0	\$0	\$125	\$125	\$125	\$250	\$250	\$152
Number of Retirees	0	0	833	249	70	265	50	1,467

**Table A-5: Distribution of Recent Retiree Ages at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

	2016-17 Retirees	2017-18 Retirees	2018-19 Retirees	2019-20 Retirees	2020-21 Retirees	All Current Retirees
Number	112	148	79	114	74	1,467
Average Monthly Benefit at Retirement	\$163	\$151	\$149	\$151	\$155	\$140
Average Attained Age at Retirement	62.23	62.01	62.60	64.85	64.57	61.45



Appendix A: Additional Membership Data

Table A-6: Status Reconciliation

	Active Members	Vested Terminated Members	Non-Vested Inactive Members*	Pension Recipients			Total
				Service Retired**	Disability Retired	All Beneficiaries	
June 30, 2020	8,014	309	58	1,424	0	113	9,918
Increase (Decrease) From:							
Service Retirement	(64)	(10)	(1)	75			
Disability Retirement							
Deaths	(30)	(3)		(33)		(6)	(72)
Survivors						15	15
Co-Payee							
Other Pension Terminations							
Vested Terminations	(3)	3					
Non-Vested Terminations	(595)		3				(592)
New Entrants/Rehires	506	(3)	(3)				500
Data Corrections/Changes	2	0	(5)	2			(1)
Released After 5 Years			(33)				(33)
June 30, 2021	7,830	296	19	1,468	0	122	9,735

* Members with at least 5 years of service and a last reported date within the last 5 years are valued similarly to deferred vested members in order to recognize potential liability these members hold.

**Includes 1 co-payee



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Cost Methods Used for the Valuation

An actuarial cost method is a procedure for allocating the actuarial present value of benefits and expenses to time periods. The method used for this valuation is known as the entry age normal level dollar cost method and has the following characteristics:

- i) The total present value of projected benefits of each individual is allocated on a level basis over service from entry age to retirement age. The portion of this present value allocated to the valuation year is the normal cost.
- ii) The actuarial liability is the accumulation of past normal costs on the valuation date.

Unfunded actuarial accrued liability, which is the difference between the actuarial accrued liability and the actuarial value of assets, is amortized on a level dollar basis over a 25-year period beginning with the June 30, 2020 valuation (the previous amortization period was 30 years). As of June 30, 2021, actuarial value of assets exceeded accrued liabilities. The excess was amortized over 25 years and applied as a credit to the computed normal cost and expected administrative expenses.

The actuarial value of assets used for funding purposes is derived as follows: prior year actuarial value of assets is increased by contributions and expected investment income and reduced by refunds, benefit payments and expenses. To this amount 25% of the difference between expected and actual investment income for each of the previous four years is added.



Appendix B: Summary of Actuarial Assumptions and Methods

Actuarial Assumptions Used for the Valuation (based on an experience study for the four-year period ending June 30, 2019)

The rate of investment return: 7.25% per annum net of investment expenses.

The expected administrative expenses: \$60,000 which is included in the calculation of the actuarial determined contribution amount.

The rates of separation from active membership were as follows:

Sample Ages	Years of Service	Percent of Active Members Separating Within Next Year
ALL	0	12.0%
	1	11.0
	2	10.0
	3	8.0
	4	6.0
25	5 & Over	4.0
30		4.0
35		4.0
40		4.0
45		4.0
50		5.0
55		5.0
60		6.0



Appendix B: Summary of Actuarial Assumptions and Methods

The rates of retirement from active membership were as follows:

Ages	Percent of Active Members Retiring Within Next Year
55	35.0%
56	30.0
57	25.0
58	20.0
59	20.0
60	20.0
61	20.0
62	25.0
63	25.0
64	25.0
65	25.0
66	25.0
67	25.0
68	25.0
69	25.0
70	100.0



Appendix B: Summary of Actuarial Assumptions and Methods

Mortality Assumption: RPH-2014 Blue Collar mortality table with female ages set forward one year. Future improvement in mortality rates is assumed using 60% of the MP-2017 projection scale generationally.

Sample Mortality Rates (Base Rates)								
Pre-Commencement			Post-Commencement			Post-Commencement		
Age	Male	Female	Age	Male	Female	Age	Male	Female
25	0.000733	0.000244	35	0.001793	0.001169	80	0.053460	0.042932
30	0.000717	0.000317	40	0.002156	0.001611	85	0.088524	0.072752
35	0.000797	0.000417	45	0.003275	0.002671	90	0.146859	0.125111
40	0.000958	0.000598	50	0.005604	0.004235	95	0.223428	0.197901
45	0.001455	0.001013	55	0.007342	0.005165	100	0.313988	0.291040
50	0.002490	0.001685	60	0.009893	0.006890	105	Disabled retirees use the same assumption as healthy lives.	
55	0.004071	0.002510	65	0.014089	0.010092	110		
60	0.006743	0.003606	70	0.021101	0.016038	115		
65	0.011612	0.005456	75	0.032952	0.026199	120		



Appendix B: Summary of Actuarial Assumptions and Methods

Miscellaneous and Technical Assumptions

Marriage Assumption:	All members are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses. At retirement, 90% of members are assumed to be married for purposes of valuing death after retirement benefits.
Pay Increase Timing:	N/A.
Decrement Timing:	Decrements of all types are assumed to occur at the beginning of the year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Neither disability nor withdrawal decrements operate during retirement eligibility.
Incidence of Contributions:	Contributions are assumed to be received in the middle of the year.
Normal Form of Benefit:	A 66-2/3% automatic joint and survivor payment is the assumed normal form of benefit for married members. Straight life is the assumed normal form of benefit for single members.
Benefit Service:	Service nearest the whole year is used to determine the amount of benefit payable.
Average Entry Age:	Age 38.31 was assumed in cases where insufficient data was provided. Active members were assumed to accrue 0.65 years of service credit in each future year.
Non-Vested Inactive Members:	Members with at least 5 years of service and a last reported date within the last 5 years are valued similarly to deferred vested members in order to recognize potential liability these members hold.



Appendix B: Summary of Actuarial Assumptions and Methods

Definitions of Technical Terms

Actuarial Accrued Liability. The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal cost and actuarial accrued liability.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.

Amortization. Paying off an interest-discounted amount with periodic payments of interest and principal – as opposed to paying off with a lump sum payment.

Experience Gain (Loss). The difference between actual actuarial costs and anticipated actuarial costs – during the period between two valuation dates.

Normal Cost. The actuarial cost allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and the actuarial value of assets. Sometimes referred to as “unfunded accrued liability.”



Appendix C: Summary of Fund Provisions

Membership

Includes any active volunteer non-salaried firefighter whose first year of service credit was earned on or after age 16.

Service Credit

A year of service credit may be granted upon required certification for each year the member

- (1) attended 50% of all scheduled fire drills,
- (2) attended 50% of all scheduled business meetings, and
- (3) participated in at least 50% of all emergency response calls which the fire department held him responsible to attend.

Retirement Eligibility

A member may retire (1) with a full retirement annuity at age 55 with 25 or more years of service credit or (2) with a reduced retirement annuity at age 55 with 10 or more years of service credit.

Retirement Annuity

The full retirement annuity is \$250 per month. The reduced retirement annuity is \$125 per month.

Surviving Spouse Annuity

The surviving spouse of a deceased annuitant receives an annuity equal to $\frac{2}{3}$ of the retirement annuity being paid at the time of the member's death. The annuity ceases upon the surviving spouse's marriage or death.

Surviving Dependent Child

If there is no surviving spouse, then a surviving dependent child will receive an annuity equal to $\frac{2}{3}$ of the retirement annuity being paid at the time of the member's death. The annuity will cease upon the earlier of the dependent child's 18th birthday or death.

Vested Retirement Annuity

Any member with at least 10 years of service credit who ceases to be a volunteer non-salaried firefighter is eligible for a deferred retirement annuity commencing at age 55. The monthly amount is \$250 if the member has at least 25 years of service credit and \$125 if the member has between 10 and 25 years of service credit.

Public Payments

\$750,000 annually from the State's fire protection fund



Appendix D: Risk Considerations

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the June 30, 2019 actuarial valuation.

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- external risks such as the regulatory and political environment.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates. The following discussion includes a few exhibits which summarize some historical information to help indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

The investment return on assets is the most obvious risk – and usually the primary risk – to funding a pension plan.



Appendix D: Risk Considerations

HISTORICAL CASH FLOWS

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that may cause significant concerns. This is a metric the investment consultants usually focus on when evaluating the asset allocation. The maturity of the system is the main contributor to the situation.

Actuarial Valuation Date	Market Value of Assets	Contributions	Benefit Payments and Expenses	Net Cash Flow	Net Cash Flow as a Percent of MVA
6/30/2010	\$ 38,938,999	750,000	665,211	84,789	0.22%
6/30/2011	\$ 47,641,091	750,000	781,845	(31,845)	-0.07%
6/30/2012	\$ 47,363,279	750,000	856,453	(106,453)	-0.22%
6/30/2013	\$ 53,312,473	750,000	968,742	(218,742)	-0.41%
6/30/2014	\$ 61,923,262	750,000	1,463,259	(713,259)	-1.15%
6/30/2015	\$ 62,103,236	750,000	1,663,783	(913,783)	-1.47%
6/30/2016	\$ 61,049,688	750,000	1,830,833	(1,080,833)	-1.77%
6/30/2017	\$ 66,400,768	750,000	2,081,151	(1,331,151)	-2.00%
6/30/2018	\$ 69,287,453	750,000	2,375,374	(1,625,374)	-2.35%
6/30/2019	\$ 71,836,631	750,000	2,518,776	(1,768,776)	-2.46%
6/30/2020	\$ 68,836,980	750,000	2,693,039	(1,943,039)	-2.82%
6/30/2021	\$ 84,718,801	750,000	2,818,066	(2,068,066)	-2.44%



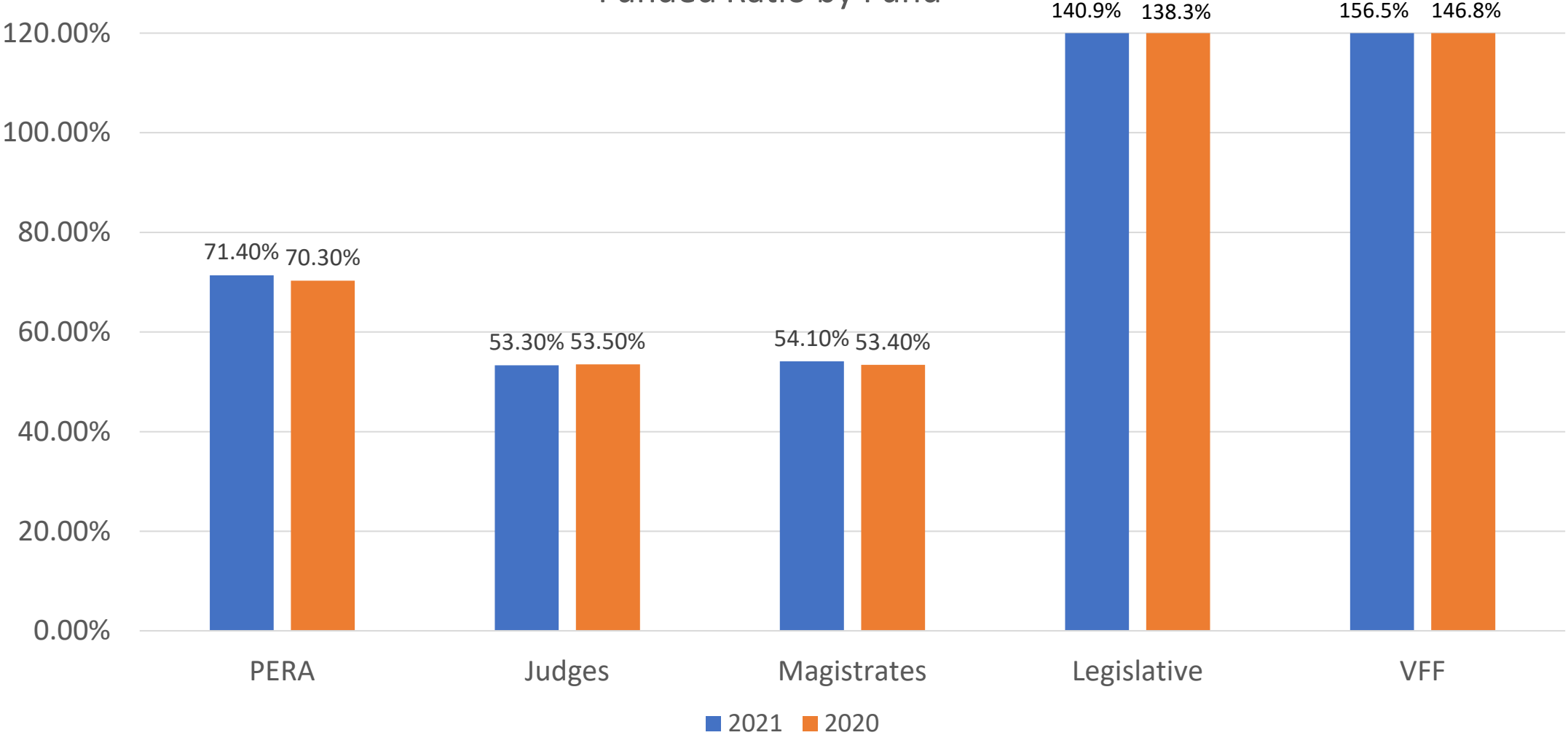
Appendix D: Risk Considerations

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. Historically, the Fund has been funded with fixed contributions by both employees and the employer. The Fund has maintained a significant surplus of assets over liabilities for the last ten years.

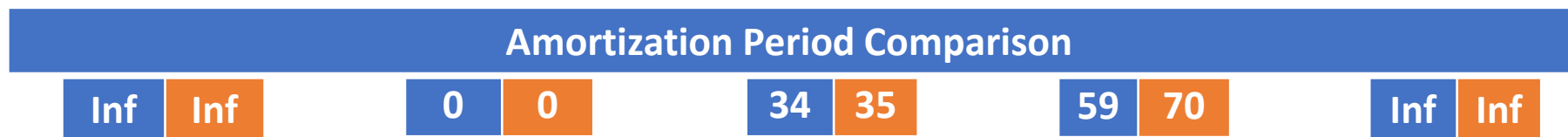
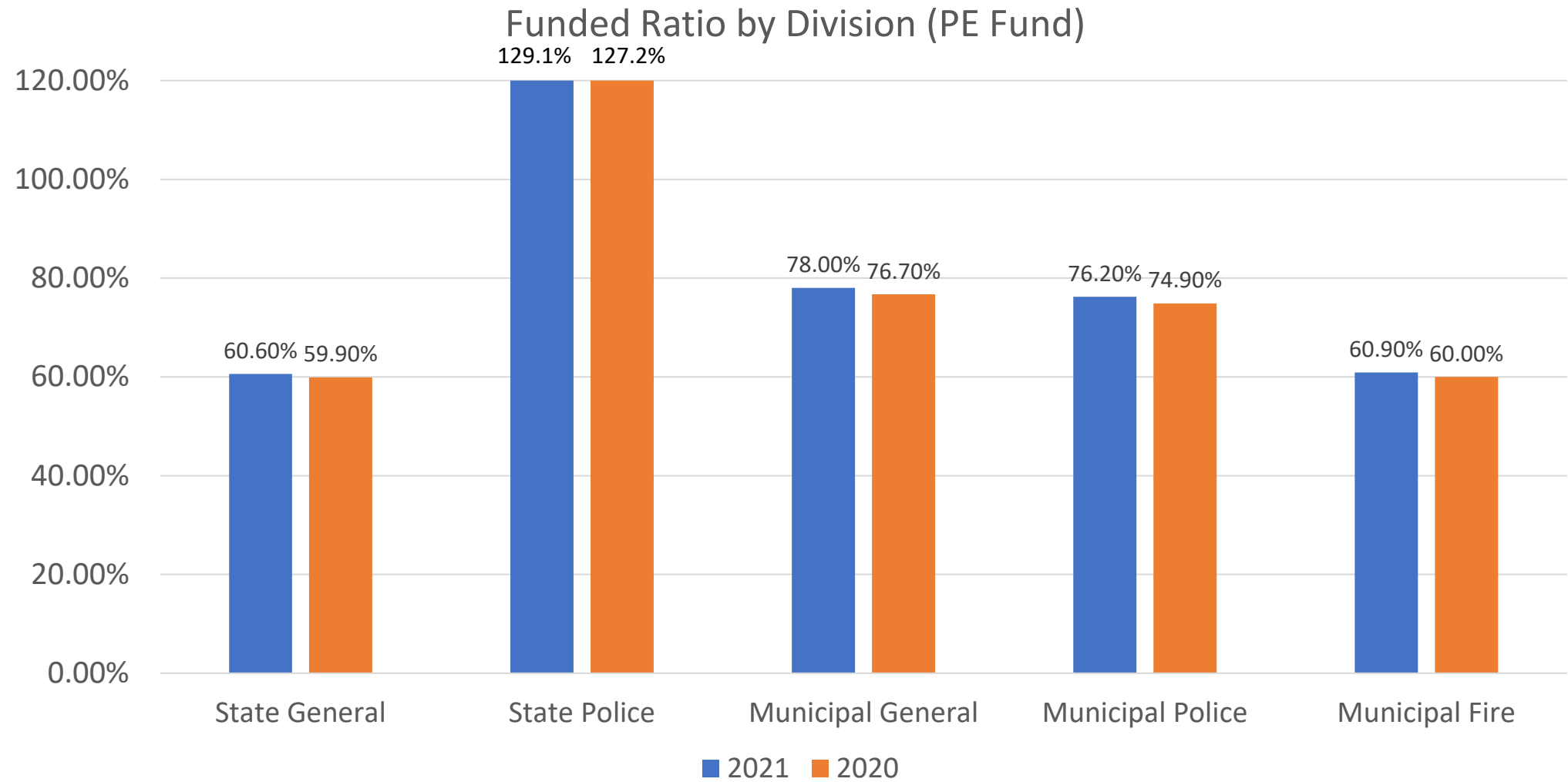
Funding a retirement system with fixed contribution rates creates some unique funding challenges. Given the extreme volatility associated with the underlying investments of the portfolio, wide variations in the actual return on the market value of assets is expected. However, when it occurs it can change the long-term funding outlook from positive to negative or vice versa. By the time a trend has been identified, it is possible for the funded status of the System to have seriously declined, requiring more substantive resources to compensate for the investment losses.

A key demographic risk for all retirement systems is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.

Funded Ratio by Fund



Amortization Period Comparison			
72	106	41	44
46	29	0	0
0	0	0	0



Chief Investment Officer Update

Reporting: August 31, 2021
Presentation Date: October 28, 2021

Investment Principles:

- Achieve a steady, compounding return that minimizes uncompensated risk
- Focus on allocating risk
- Separate Alpha and Beta
- Effectively manage costs
- Institute comprehensive risk management
- Keep long term view

Key Strategic Goals:

- Sustain the Trust Fund for current and future retirees
- Set Strategic asset allocation to meet the actuarial assumed return over the long run
- Produce returns that meet or exceed benchmarks
- Be cost-efficient

Asset Allocation & Cash Activity:

The Fund's market value increased by \$385 million in August, to \$18.2b. Another new all-time high, and the first time in PERA's history to hold a market value above \$18b.

For the month of August, PERA transferred \$71 million from the cash account to the operating account (STO) for beneficiary payments and operating expenses. This amount represents 63% of the total benefit payments paid. FYTD, the Fund has paid out \$226m in benefits payments, from that balance \$149m (66%) was funded from investment activity.

The Fund held 15% of tier 1 (liquidity) assets and remains in compliance with IPS guidelines.

Asset weights at the end of August were within policy ranges, and in compliance with IPS guidelines:

	<u>Target</u>	<u>Actual</u>	<u>Range</u>
Global Equity	36.6%	36.0%	+/- 5%
Risk Reduction	18.3%	18.6%	+/- 3%
Credit	14.6%	14.7%	+/- 4%
Real Assets	20.1%	20.0%	+/- 4%
Multi-Risk	10.4%	10.7%	+/- 4%

Implementation Update:

On September 22, 2021, one multi-proposal structural study was presented to PRISM and moved forward to receive unanimous agreement by our Portfolio Fit and Process Review Team on September 29, 2021:

- Discontinued use of the LGIMA Global Equity Structural Overlay and the LGIMA TAA Overlay due to implementation outcomes that did not meet original expectations. Original expectations of this program were intended to eliminate off-benchmark systematic risk generated by PERA's active Global Public Stock managers, through the neutralization of off-benchmark beta via synthetic exposure. Furthermore, as unintentional active risk was mitigated, idiosyncratic risk re-spend was allowed through the TAA Overlay. Discontinuation of such overlay programs is expected to decrease active risk, significantly, decrease gross and net notional Fund exposure, and minimize future Fund costs
- Rebalanced physical Global Public Stock exposures to eliminate excessive regional and factor-based tilts across active management. This rebalance included slight sizing reductions from 5 of the 6 active Global Public Stock managers in the portfolio. This rebalance is intended to re-allocate physical exposures to be more benchmark aligned, while reducing active risk, and decreasing the portfolio's dependence on synthetic exposure management

Note: All completed opportunities are subject to satisfactory legal review, prior to final execution.



Implementation Update (Continued):

- Initiated engagement of PERA's current manager in good standing, State Street Global Advisors, to implement a passive Russell 1000 separate account strategy. Such engagement is intended to further assist in the elimination of PERA's existing small-cap and non-US active tilts. Procurement for this engagement was in accordance with PERA's Investment Procurement Policy, and Investment Staff completed a full Request for Information ("RFI") process, prior to formal engagement. Selection of a passive provider was based on historical effectiveness of replication, as measured by Tracking Error, and the lowest fee structure proposed
- Terminated engagement with PERA's US Small/Mid Growth active manager, TimesSquare, with proceeds to be allocated to newly engaged State Street Russell 1000 passive separate account. This termination is intended to eliminate the overlapping US SMID Cap exposure to the investment universe that exists between this manager and Kayne Anderson Rudnick, as well as further decrease the structural tilt and level of active risk that exists between manager composition and the Global Public Stock Policy index. Strategy termination and transition of assets will be facilitated by PERA's third party transition manager, Russell Investments. Engagement of Russell's transition services were conducted in accordance with PERA's Investment Procurement process, prior to formal engagement. Selection of a transition manager was based on lowest bid provided by PERA's three contracted transition managers

Note: All completed opportunities are subject to satisfactory legal review, prior to final execution.

Market Summary:

For another month, on a 7-month consecutive rally, U.S. equities posted strong positive performance once again. Broad equity markets increased by close to 3% in August, despite the ongoing concerns of COVID resurgence or rising inflation, and generally boosted risk-on assets such as equities, REITS, and credit. 10-year bond yields trended upward for the month, driving pricing lower, and indicating slight investor optimism in future economic growth. With this shift, bond markets experienced a slightly negative month. Finally, commodities struggled for the month, prompted solely by the decline in energy driven by COVID concerns and its impact on near term demand.

As we reflect on market fundamentals, we can confirm that the economic environment appears to be more challenging because of the growing influence of inflation, ongoing concerns of COVID, and the anticipation of upcoming Fed tapering. However, regardless of the economic environment, the Fund is positioned to balance such economic risks, and remain consistently liquid and diversified through various market regimes.

Performance Summary:

During the month of August, the Fund was up 2.49% and 22.19% for the 1-year period. Implementation outpaced the Policy benchmark for the same periods, producing positive excess return of 1.49% and 2.36%, respectively. This theme of outperformance remained consistent across all measurable times horizons for this reporting period. On an absolute measurement basis, the Fund continues to generate strong returns, and met or exceeded the assumed rate of return of 7.25% for nearly all measurable time horizons. For the FYTD, the fund marked a 4.17%, well above the month-over-month expectation relative to PERA's actuarial rate of return. Manager selection continued to display positive value-add, reflecting consistent outperformance vs the Fund's Dynamic Selection index for all measurable time periods.

Contributors: For the month, all asset classes outperformed their Policy benchmarks and produced positive alpha, when compared to their selection benchmarks (dynamic indexes). Over the last year, Global Equity and Credit allocations continued to benefit from rallying betas and strong selection initiatives. Global Equity exceeded its Policy benchmark by 639bps and exceeded selection measurements by 441bps. Credit exceeded its Policy by 968bps, while also exceeding selection expectations by 586bps. In both instances, the primary driver of outperformance was attributable to alternative and illiquid allocations that rallied significantly stronger than their public market betas; Private Equity, Alternative Credit, and Illiquid Credit outperformed Policy benchmarks by 31.66% (61.77% absolute net return), 20.27% (29.30% absolute net return), and 10.56% (19.59% absolute net return), respectively.

Detractors: Over the last year, Real Assets continued to struggle with tracking its rallying beta, primarily due to larger allocations to illiquid market opportunities. Within these strategies public market betas have soared, and illiquid valuations have not kept pace, producing negative excess results of 10.95% in Illiquid Real Assets, and 21.81% in Illiquid Real Estate. Although this underperformance is significant, Illiquid Real Estate results, relative to its selection benchmark, continue to produce positive selection alpha of 13.31%. No immediate changes to illiquid positioning are being considered in the short term. Staff will continue to consistently deploy complimentary illiquid exposure to further diversify risk within these portfolios. Finally, Liquid Real Estate and Liquid Real Assets remain a focus for Staff, as Global Real Estate and MLP exposures continue to underperform for the 1-year period. An active risk reduction is being considered to address this underperformance.

as of: August 31, 2021	MTD	FYTD	1-Year	3-Year	5-Year	7-Year
Total Fund	2.5%	4.2%	22.2%	9.8%	9.3%	7.2%
Policy Index	1.0%	2.5%	19.8%	9.4%	9.0%	7.2%
Value Add	1.5%	1.7%	2.4%	0.4%	0.3%	0.0%
Selection Contribution	1.7%	2.2%	3.3%	1.3%	0.9%	0.7%
Allocation Contribution	-0.2%	-0.5%	-1.0%	-0.9%	-0.6%	-0.7%
Global Equity	4.7%	6.5%	33.8%	15.1%	15.0%	10.9%
Policy Index	2.4%	3.2%	27.4%	12.9%	13.6%	10.4%
Value Add	2.3%	3.3%	6.4%	2.2%	1.4%	0.5%
Selection Contribution	2.7%	4.2%	4.4%	2.4%	1.6%	1.0%
Allocation Contribution	-0.4%	-0.9%	2.0%	-0.1%	-0.2%	-0.6%
Risk Reduction	0.1%	1.3%	2.4%	5.8%	3.5%	3.6%
Policy Index	-0.2%	0.9%	0.0%	5.4%	3.1%	3.3%
Value Add	0.3%	0.3%	2.4%	0.4%	0.3%	0.3%
Selection Contribution	0.3%	0.4%	2.4%	0.4%	0.3%	0.2%
Allocation Contribution	0.0%	-0.1%	0.0%	0.0%	0.1%	0.1%
Credit	1.6%	2.0%	17.8%	7.1%	6.4%	4.6%
Policy Index	0.8%	0.9%	8.1%	6.6%	5.8%	4.7%
Value Add	0.8%	1.1%	9.7%	0.5%	0.6%	-0.1%
Selection Contribution	1.3%	1.4%	5.9%	2.0%	1.0%	0.3%
Allocation Contribution	-0.5%	-0.3%	3.8%	-1.6%	-0.3%	-0.3%
Real Assets	2.9%	4.0%	20.6%	5.5%	5.6%	4.1%
Policy Index	0.4%	2.4%	30.3%	7.8%	7.7%	5.0%
Value Add	2.5%	1.6%	-9.7%	-2.3%	-2.1%	-1.0%
Selection Contribution	2.6%	2.3%	3.2%	0.6%	0.1%	0.2%
Allocation Contribution	-0.1%	-0.7%	-12.9%	-2.9%	-2.3%	-1.2%
Multi-Risk	-0.2%	5.2%	32.6%			
Policy Index	-0.1%	5.3%	32.8%			
Value Add	-0.1%	-0.1%	-0.3%			

September Internal Performance Estimate:

- The Fund's market value saw its first dip since January 2021, dropping by approx. \$374m, to \$17.8b
- Internal Fund estimates reflect a monthly return of approx. -1.8% and a FY22 YTD return of 2.3%
- Policy returns for the 1-month and FY22 YTD periods were -2.3% and 0.05%, respectively
- Theme across asset classes: capital preservation in a declining month

Note: Estimated and subject to change.

Staffing Update

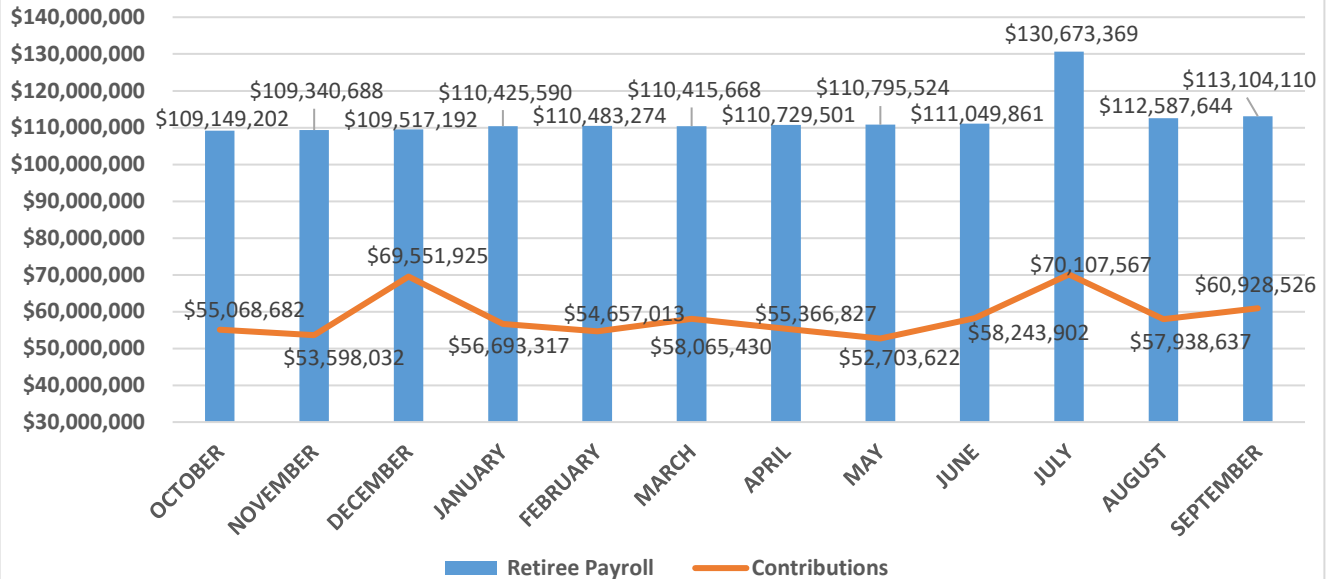
No change to staffing since last update; actively recruiting for two recent vacancies, effective August 6th and 11th, 2021:

- Investment Account Manager, Operations (Classified FTE)
- Investment Associate, Alpha (Gov. Ex. FTE.)



EXECUTIVE DIRECTOR'S REPORT PERA BOARD MEETING – October 28, 2021

Retiree Payroll vs: Total Contributions - October 2020 - September 2021

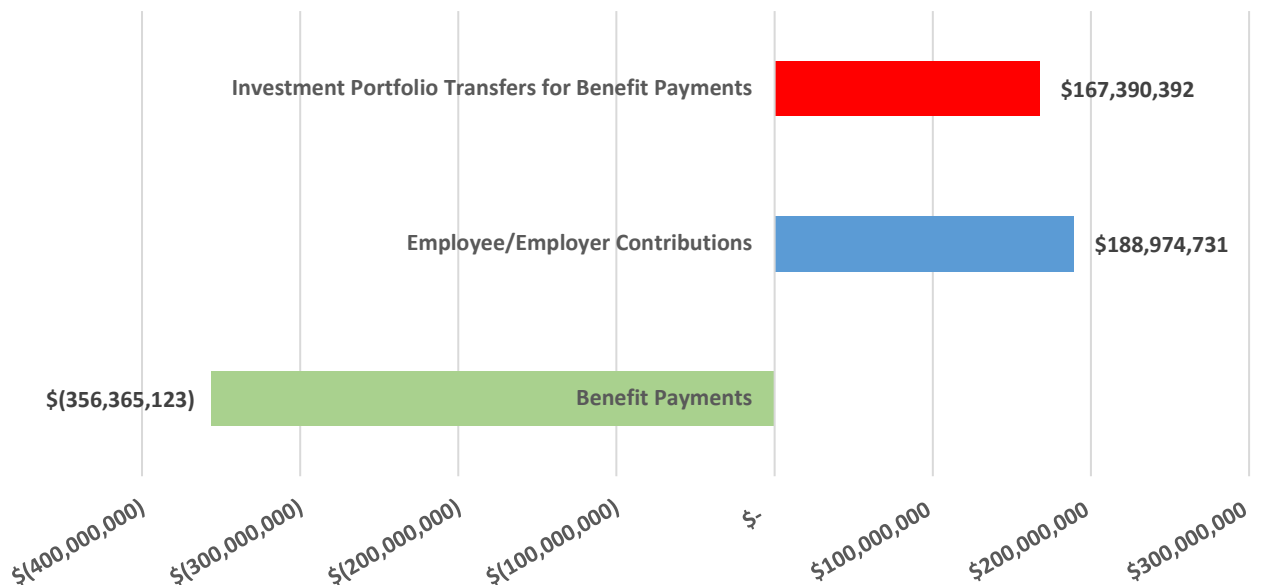


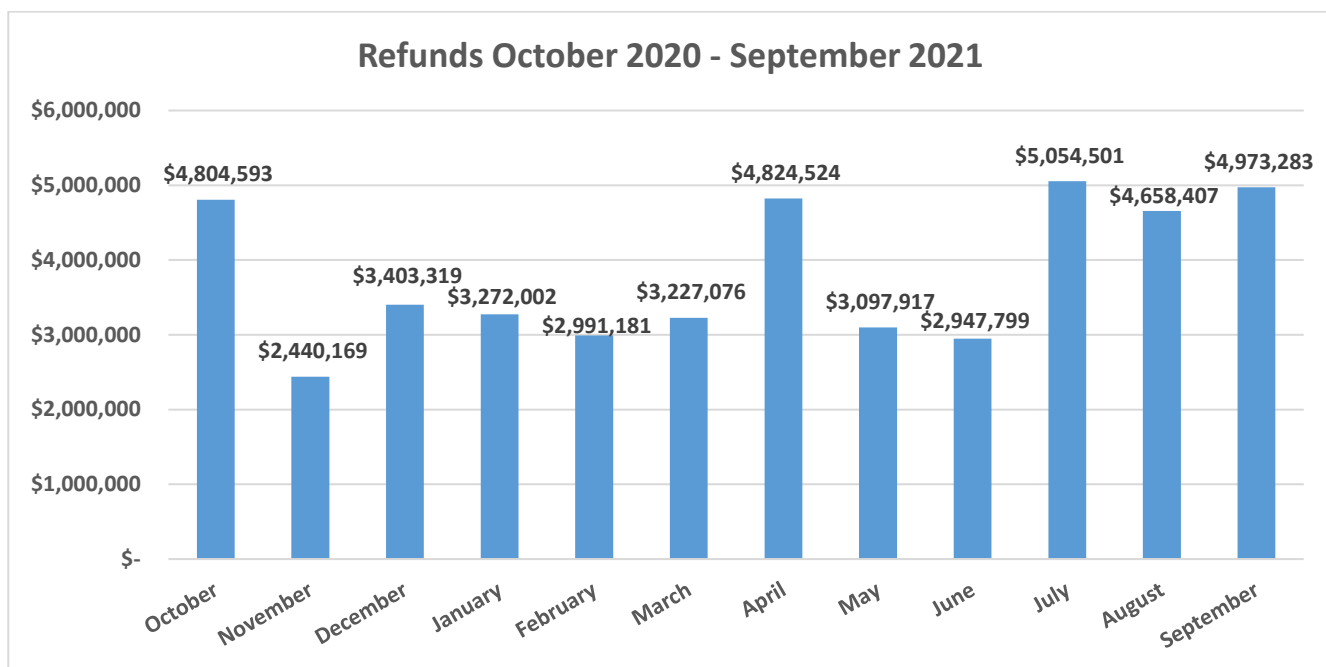
Total Retiree Payroll = \$1,348,271,623

Total Contributions: \$ 702,923,480

**** Due to adjustments to Employer reports contributions amounts are subject to change**

FY22 Contributions: Investment Income & Contributions thru September 2021





**** Total Refunds Paid during this period was \$45,694,771**

VACANCY REPORT			
Position	Division	Date Vacated	Status
Attorney	Legal Division	4/30/2019	On Hold
Chief Financial Officer III	ASD	5/2/2020	On Hold
IT Database Administrator II	IT	5/29/2021	On Hold
Chief Investment Officer	Investments	6/4/2021	
General Counsel	Legal	9/10/2021	
IT Network Administrator II	IT	10/16/2021	Pending Posting
ASD Director	Administrative Services	10/18/2021	

PERA has 87 authorized FTE and currently has 7 vacancies

ADDITIONS/DEPARTURES/PROMOTIONS			
Employee	Position/Division	Date Started/Vacated	Status
Miranda Montoya	Records Manager	10/16/2021	Promotion
Anna Williams	Deputy Executive Director	10/18/2021	Promotion

2021 AIR TIME PURCHASES	
Plan Type	October Purchases
State Plan 3	5
Municipal Plan 1	0
Municipal Plan 2	3
Municipal Plan 3	3
Municipal Plan 4	0
Municipal Detention Plan 1	0
Municipal Fire Plan 5	4
Municipal Police Plan 3	0
Municipal Police Plan 4	0
Municipal Police Plan 5	4
State Police/Corrections Plan	<u>3</u>
TOTAL:	22

2021 AIR TIME PURCHASES	
No. of Months	October Purchases
1	1
2	0
3	0
4	0
5	1
6	1
7	0
8	0
9	1
10	1
11	1
12	<u>16</u>
TOTAL:	22

PERA SmartSave Items of Interest – September 2021			
<u>County by Region North - Chris Day</u>	<u>Individual Meetings</u>	<u>Tele-outreach</u>	<u>In Person</u>
San Juan	1	3	10
Santa Fe	5	16	4
Taos	4		
<u>County by Region Central</u>	<u>Individual Meetings</u>	<u>Tele-outreach</u>	<u>In Person</u>
Bernalillo	6	5	8
<u>County by Region South - Linda Miller</u>	<u>Individual Meetings</u>	<u>Tele-outreach</u>	<u>In Person</u>
Chaves		2	
Dona Ana	7	11	
Eddy		5	
Grant		3	
Lea		1	
Luna		3	
Otero		4	
Sierra		2	
Socorro		1	
SmartSave Assets as of 9/30/2021 - \$810,128,723			
SmartSave Participants as of 9/30/2021 – 22,947			

Independent Contracts Reviewed – September 2021	
Entity	# of Contracts Reviewed September 2021
New Mexico Legislative Finance Committee	1
Martin Luther King Jr. Commission	1
New Mexico Department of Health	3
New Mexico Livestock Board	1
New Mexico Energy, Minerals & Natural Resources Department	1
Second Judicial District Attorney	2
Village of Corrales Municipal Court	1
Law Officer of the Public Defender	<u>1</u>
Total:	11
Reviewed, but “Not in Pay Status”	
Second Judicial District Attorney	1
New Mexico Energy, Minerals & Natural Resources Department	<u>1</u>
Total:	2
<u>Total Contracts Reviewed</u>	13

RETIREE HEALTH CARE AUTHORITY BOARD MEETING October 5, 2021

The regular board meeting of the Board of Directors for the Retiree Health Care Authority was held on October 5, 2021 at 9:30 am via Go-To Meeting due to the Governors Executive Order 2020-004 declaring a state of public health emergency due to COVID-19.

Committee Reports:

- Executive Committee did not meet, but Mr. Crandall discussed the Agenda with Mr. Archuleta
- The Legislative committee met and discussed items on today's agenda

The Executive Directors update included the following:

- HR updates/Operations/COVID-19
 - o Introduction to Jess Biggs, Director of Communication and Member Engagement
 - o 12 candidates applied for CFO and interviews are scheduled for October 15
 - o Annual audit is underway yet delayed due to lack of CFO, but they anticipate meeting the deadline of November 24.
- PBM RFP -Discussed timeline for RFP and scoring criteria. Best and final interviews are anticipated in late January/Early February. Board approval is required and a special meeting may be scheduled.
- Wise and Well Event – took place on September 29th, received positive feedback from attendees. The first fall switch enrollment meetings have begun, nine more scheduled.
- FEMA Grant – DFA and Department of Homeland Security have indicated that RHCA is eligible for grant money through FEMA's safe opening and Operation Work Eligible for Public Assistance interim policy. RHCA has spent \$1,500-2,000 for office cleaning, PPE equipment and sanitizing workstations. The bulk of expense has been related to testing and related treatment, which is about \$10 million, the RHCA has notified DFA its intent to pursue any money available for these expenses.
- Legislative – presented FY23 appropriation requests to the LFC on September 23
- Lopez v. NMRHCA, N.M. Ct. App. No. A-1-CA-39121 – the plaintiff filed the appellate memorandum in opposition to the Court's opposed disposition finding in the RHCA's favor

SIC report on Fund Balance –

- As of August 31, 2021 - \$1,066,210,297; another all-time high



Action Items:

FY23 Special Appropriation Request - Approved

Mr. Archuleta reviewed a summary of requests which is threefold:

- Bar Authority – 5% appropriation
- Special appropriation of \$9,237,866.13 plus the cost of September's claims (\$1-1.5 million) to cover expenses related to COVID-19 testing and treatment on the self-insured side
- Request \$15 million to cover projected costs associated with the elimination of cost sharing related to SB 317 between January 1, 2022 and December 31, 2026.

Rule Change– Approved

The purpose of the rule is to align the RHCA's definition of salary to that of PERA.
(Hearing took place September 24 with no comment and no public attendance.)

FY22 Medicare Advantage Contract Amendments- Approved

Requested approval to amend the UnitedHealthcare, Presbyterian Health Plan, Blue Cross Blue Shield and Humana Medicare Advantage contracts to reflect the monthly charges, plan summaries, performance guarantees, and gain share agreements applicable to the 2022 Calendar year.

The November meeting has been cancelled. The next meeting is scheduled for December 7, 2021.

**New Mexico
Public Employees Retirement Association
PERA Board Meeting
September 30, 2021**

1. Call to Order

This meeting of the New Mexico PERA Board was held on the date cited above via Zoom tele/video conferencing. Acting Chair Francis Page called the meeting to order at approximately 9:15 a.m.

2. Pledge of Allegiance.

Diana Rosales Ortiz led the Pledge of Allegiance.

Acting Chair Page announced that Maggie Toulouse Oliver had lost a family member and would therefore not be attending today's meeting. He offered his condolences and prayers to her family.

3. Roll Call

The meeting attendance met quorum with the following members present;

Board Members Present

Francis Page, Acting Chair
Lawrence Davis
Tim Eichenberg
Paula Fisher
Loretta Naranjo Lopez
Steve Neel [out at 12:15 pm]
Shirley Ragin
Roberto Ramirez
Diana Rosales Ortiz
Claudia Armijo [sworn in at 11:30am]

Board Member Absent

John Melia
Maggie Toulouse Oliver

Staff

Greg Trujillo, Acting Executive Director
Trish Winter, Executive Assistant
Anna Williams, CFO
Kristin Varela, Acting CIO
LeAnne Larranaga Ruffy, Acting Deputy CIO
Misty Schoeppner, Acting General Counsel
Geraldine Garduno, Asst. General Counsel
Jessica Trujillo, HR Manager
Christina Perea, Outreach Bureau Chief
Christina Gauthier, Outreach Bureau
Ron Gallegos, Chief Information Officer
Karyn Lujan, SmartSave Plan Manager

Staff (continued)

Angela Romero, Abq Office Manager
Sara Hume, Director of Beta
Frank Mihail, Director
Jovanna Archuleta, Investments

Other

Steve DiGirolamo, Wilshire Consulting
Ernie Marquez, Automated Election Systems
Greg Smithkier, NM Attorney General's Office
Rowen Descallan, Journalist with Pagaentmedia
Merrilee Danneman
Joseph Kerns

4. Approval of Agenda. [Exhibit 1]

Tim Eichenberg moved to approve the agenda. Shirley Ragin seconded the motion.

Lawrence Davis proposed the removal of Item 7. E (3) from the Agenda. He stated that the Board had not complied with the process required before the appointment of a new Board member. This would lead to the invalidation of any action taken on the item.

He further pointed out that according to New Mexico Administrative Code 2.80.200.30, the Board needs to first formally adopt a resolution. He requested further details from the Acting General Counsel, Misty Schoeppner.

Ms. Schoeppner stated that the process is not set out in Board Policy. She further stated that based on past Board precedent, when there's been an election result that is so close in time to the resignation of a Board member, in this case, the State position, there is a precedent to go ahead and appoint the newly elected Board member to begin their term immediately rather than waiting until January.

She added that it is within the Board's discretion to dispense with the resolution process because of the timing.

Mr. Davis asked if the authority of the Chair overrides New Mexico Administrative Code. Ms. Schoeppner stated that it does not and added that this is a discretionary matter.

Mr. Davis pointed out that the Board Policy states that the PERA Board would comply with New Mexico Administrative Code and reiterated that it does not grant the Board Chair authority to override that Code.

Ms. Naranjo Lopez requested to see the Statute that Mr. Davis was referring to. She also reiterated that Board appointments have always been done like this. It is about precedence. She also wondered why Mr. Davis had not brought this up for discussion before the meeting.

Steve Neel pointed out the Board needs to ensure that the process is followed since they were already under a lot of scrutiny to check whether they are abiding by the bylaws and statutes.

He suggested that the process be paused to allow Ms. Schoeppner to do some research and provide more information at the next Board meeting.

Ms. Ragin echoed Mr. Neel's sentiments that the right process should be followed.

Ms. Schoeppner agreed to do some research and provide a legal opinion on the matter.

Ms. Naranjo Lopez requested clarification on the New Mexico Administrative Code 2.80.200.30. she also inquired if the appointment can be done now then the paperwork be filled in later.

Ms. Schoeppner explained that the decision to include Item 7. E. 3 on the Agenda was based on past precedent.

Mr. Davis moved to amend the agenda to remove Item 7. E. 3 and move it to the October meeting. Steve Neel seconded the motion. The motion to amend failed by a roll call vote of 6-3 as follows;

Francis Page	No
Lawrence Davis	Yes
Tim Eichenberg	No
Paula Fisher	No
Loretta Naranjo Lopez	No
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	No
Diana Rosales Ortiz	No

Back to the original motion to approve the agenda as is by Tim Eichenberg and seconded by Shirley Ragin. The motion passed unanimously by a roll call vote as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	Yes
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes

Mr. Neel requested a chance to explain his vote on the approval of the agenda and stated that it was based on the need to move forward.

Mr. Davis reiterated his request to get legal opinion from General Counsel. He added that his vote to approve the agenda was based on her statement that the Board could move forward on the matter.

Ms. Schoeppner agreed to provide a written legal opinion regarding the process.

5. Approval of the Consent Agenda. [Exhibit 2]

Ms. Naranjo Lopez requested removing the Rules & Administration Committee Charter off the consent agenda to the regular Agenda, Item 6.A

Tim Eichenberg moved to approve the Consent Agenda as amended. Roberto Ramirez seconded the motion. The motion passed by a unanimous roll call vote as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	Yes
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes

6. Unfinished Business

A. Items removed from the Consent Agenda. [Exhibit 3]

Ms. Naranjo Lopez explained that she proposed that the changes to the Board rules be removed because there have been numerous financial crimes against New Mexico PERA in recent years. The rules, which are meant to prevent crimes, were used to take an estimated \$5 billion from PERA out of pocket and opportunity costs.

She further expressed concerns that the rules give more power to the executive director and leave the Board without the possibility of following their fiduciary responsibility. She proposed that they vote against the rules and evaluate them thoroughly.

Ms. Naranjo Lopez moved to **not** approve the Rules & Administration Committee Charter. There was no second.

Francis Page moved to approve the Rules & Administration Committee Charter. Shirley Ragin seconded the motion. The motion passed by a roll call vote of 8 to 1 as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes

Loretta Naranjo Lopez	No
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes

Mr. Davis inquired about the changes in the Rules & Administration Committee Charter. The Chair of the Rules & Administration Committee, Paula Fisher stated that no major changes were made other than adding the electronic voting process that had already been discussed and approved at the September meeting.

Mr. Eichenberg requested Mr. Trujillo to outline the changes made to the rules.

Mr. Trujillo stated that the Charter is something that each committee needs to approve annually. The Rules & Administration Committee had not done so up until this year. He felt that there is some confusion on the rule-making that will be heard on November 9. That's when the Board and the public will comment on the potential changes.

Mr. Trujillo further stated that it was a finding as part of the governance audit that committee hadn't annually approved charters as required by the Board policies. He added that no significant changes were made as per the draft on the Board portal.

Ms. Naranjo Lopez stated that she was referring to the actual rule changes, but that no major changes were made on the Charter.

Ms. Rosales Ortiz explained that this was only about an update on the Charter, not the rules. It was a governance issue that had not been brought up before and it had not been updated. Mr. Davis asked Ms. Rosales Ortiz to explain what changed, as the Vice Chair of the Rules & Administration Committee since there was no red-line version of the document.

Mr. Trujillo pulled up the previous Charter that was approved in 2019 when Mr. Davis was the Rules Committee Chair. He noted that the only changes made were the version, the date it was adopted, and the new committee chair. Everything else that was adopted in 2019 remained the same.

Ms. Naranjo Lopez explained that her 'no' vote was because she felt that the rules needed to be thoroughly evaluated to ensure that Statute was followed.

7. New Business.

A. PERA 75th Anniversary Presentation. *[Exhibit 4]*

Mr. Trujillo introduced Ms. Christina Perea, she is the Head of the Member Outreach Bureau overseeing volunteer firefighters as well as all retirement and pre-retirement seminars, and any education that employers and members need.

He stated that next year would be PERA's 75th anniversary and Ms. Perea and her team were doing some groundwork. Ms. Perea is also the reigning La Reina the Santa Fe Fiesta for 2021 and is exceptional at her work.

Outreach Bureau Chief, Christina Perea thanked Mr. Trujillo and said that she was a proud PERA employee. She also introduced the Planning Committee for the 75th anniversary as follows;

- i. **Christina Gauthier** is part of the PERA Outreach Bureau. She has been with PERA for over 16 years.
- ii. **Vince Jaramillo**- A PERA retiree. He was also a PERA employee for many years.
- iii. **Felicia Lujan** – She is part of the State Record Center and Archives. She is the certified digital information manager and director and has been with the New Mexico State Archives for over 20 years.
- iv. **Leslie Miller** – Has been with PERA for over 16 years.
- v. **Christina Perea** – Head of PERA Outreach.
- vi. **Greg Trujillo**- Acting Executive Director.
- vii. **Jose Trujillo** – Part of PERA Outreach.

Ms. Perea hoped to have some Board members be part of the Committee. She further outlined the layout of the 50th celebration where past executive directors, Board chairs, and Board members had been brought in to speak on the day of the celebration.

For the 75th anniversary, Ms. Perea and her team are planning on a celebration for the whole year. A majority of the events will be virtual to allow more employees to participate.

The kickoff celebration is scheduled for January 3, 2022. PERA's history will be discussed as part of the kickoff virtual seminar. Several different fun facts will be there including the original bill, a list of past executive directors, and past Board chairs. There are also pictures where people will be identifying the very first executive director and others.

There will be monthly informational seminars for the virtual participants. Different individuals will also be highlighted every month. Speakers will be present for the seminar. Pictures will be printed and put up throughout the building.

Some of the monthly virtual seminars will include military appreciation month, women's history month, wellness month, a haunted history month, et cetera. A quick Google search of the old PERA building will bring up about 20 different website links on members talking about haunting encounters in the building. Articles and blogs have even been written about it.

Several fun activities will also be held on PERA's social media platforms which include Facebook, YouTube, Instagram, and Twitter. PERA all-stars will be highlighted on all of these platforms. There will also be throwback Thursday and fun-fact Friday posts. Other regular posts will be done of important or helpful information.

Mr. Eichenberg suggested the idea of doing gold seal stamps with the 75th-anniversary logo on them. This could be engraved on everything that is mailed out so that members are aware of how long PERA has been around. He also suggested that they include information on the amount of money that has been paid out over the last 75 years.

Ms. Perea stated that there is a branding plan in place already and going forward this will include putting a 75th-anniversary logo on all letters, handbooks, forms, et cetera. She also stated that Ms. Anna Williams was putting together information on how much had been paid out in benefits.

There will be comprehensive annual financial reports and information on how the fund has grown over time. There will be information on what happened to PERA by decade like who was the president, governor, lieutenant governor, Chair, or executive director during those different times. They will also be looking at blockbuster hits, songs, or world trends for different years.

Ms. Perea stated that there will be an end of the year virtual celebration and depending on pandemic rules, the celebration might be in person. Several things that happened during the year will be highlighted at the celebration. Ms. Perea indicated that several other fun things are planned for the celebration.

Ms. Rosales Ortiz further stated that she had been approached by several members from the state branch asking for information on the money that they have been contributing. She felt that that information would be beneficial, especially to the young members.

In response to Ms. Rosales Ortiz, Ms. Perea stated that July 1 will be financial independence month. Talks will include how SmartSave can help individuals achieve financial independence. Ms. Kristin Varela and Ms. Karyn Lujan would also be consulted to touch on investment tips and strategies.

September will be retirement preparedness month. It will touch on everything about retirees and their financial planning. Ms. Perea will provide an outline of all the seminars before January for the Board to take a look at and give their inputs.

Mr. Davis thanked Ms. Perea and her team for their great work with the presentation. He also appreciated all PERA staff and added that without its staff members, PERA is nothing. Ms. Perea echoed Mr. Davis' sentiments. Mr. Neel also appreciated Ms. Perea and all PERA staff.

B. Resolution No. 21-03 Calling for Annual Board Meeting

Acting Chair Francis Page stated that the annual Board meeting of the members of PERA New Mexico is today, September 30, 2021, at 9 o'clock. This is what was approved in January 2021.

C. Board Chair's Message to Members and Retirees. [Exhibit 5]

Acting Chair Page gave out his address to PERA staff, Board members, and members at large. He stated that he is a retiree representative and that the goal of his message was to provide the status of PERA and to give a direction of where PERA is going into the future.

He acknowledged that calendar year 2021 was challenging but noted that PERA continues to be strong with fund assets reaching an all-time high of \$18.2 billion in closing the fiscal year, and 24.02% in returns. This is one of the highest returns in PERA's history.

He congratulated Ms. Anna Williams, CFO, and the Administrative Services Divisions, ASD, staff, for their great work as PERA was awarded the certificate of achievement for excellence in financial reporting from the Government Finance Officers Association, GFOA.

He also congratulated Acting Deputy CIO, Ms. LeAnne Larranaga Ruffy, who was one of four women named to Trusted Insights list of top public pension investment officers, a national publication.

He outlined some of the challenges that threaten to impede PERA's progress as follows; COVID-19 issues, loss of the executive director, loss of the chief investment officer, loss of the general counsel, pending approval.

Despite the mentioned challenges, Chair Page indicated that PERA Board and staff are moving forward with taking care of PERA's business, as always.

Mr. Page stated that PERA's immediate priority is to name a permanent Executive director. PERA Board will then work to develop and implement a strategic plan to develop a road map for PERA's future.

The Board will also need to establish a governance committee to ensure a developed strategic plan is implemented and followed and overseeing Board conduct. They will also need to conduct an evaluation of the PERA funds and continue to clear up all external and internal audit findings or findings of other agencies.

He noted that a lot of work has been done throughout the year, but more work still needs to be done to continue the success of PERA. He attributed the success of PERA to staff, who have laid a strong foundation despite political pressure.

Mr. Page concluded by stating that he desires to maintain a solid pension fund and organization. He then introduced the PERA Board members and allowed them to give brief statements.

Tim Eichenberg, is the Ex-Officio Treasurer, stated that he agreed with the Chair's presentation. He appreciated the staff for the remarkable job they do. He stated that he has been on the Board for almost seven years and found that the dedication of staff and their hard work is excellent.

Lawrence Davis echoed Mr. Eichenberg's comments regarding the staff. He thanked the interim staff and all PERA staff at large for their continued support to the fund. He stated that he longed to be a PERA Board member because the organization strikes dear to his heart since his direct family are retirees of PERA. He further pointed out that from the continued presentations by staff, it was clear that they loved their job. He urged them to keep up the good work.

Shirley Ragin also echoed previous sentiments on staff. She added that the PERA staff were a huge pillar of her growth for the several years she has been on the Board. She recognized that the staff continue doing their work with enthusiasm despite the obstacles they encounter.

Diana Rosales Ortiz also echoed the sentiments of several Board members.

Loretta Naranjo Lopez introduced herself as the retiree representative on the New Mexico PERA Board. She has been on the Board since 2005 and has many retired family members who benefit from the PERA fund.

Steve Neel reiterated the appreciation to the PERA staff, especially the interims. He recognized Ms. LeAnne Larranaga Ruffy and Mr. Greg Trujillo for the exceptional job, especially during COVID.

Roberto Ramirez also thanked staff for their work. He indicated that this is his first year as a Board member and staff have been very helpful. He would like to meet them in person when the pandemic is over.

D. Public Comment.

There were no comments from the public.

E. 2021 Board Election

1. Final Election Report from Automated Election Systems. *[Exhibit 6]*

Mr. Ernie Marquez, from the Automated Election Systems, presented the report. He stated that for the 2021 PERA State Board Election, 32,884 ballots were mailed out. There was an 8.5% turnout, where 2,814 mail ballots were received by noon on September 17, 2021.

Mr. Marquez stated that all the envelopes, ballots, reports will be held for the required time specified by law, and a copy of the electronic reports will be sent to Mr. Trujillo with the petitions from the election.

The official results for the 2021 State Board Elections are as follows;

1861 votes were cast for Ms. Claudia Aramijo. 951 votes were cast for Kenneth Figueroa.

Mr. Eichenberg noted that actual state employees were about 17,000 and assumed the other 15,000 ballots were mailed to colleges, universities, or hospitals. He requested a breakdown of the number of members that are outside the State of New Mexico.

Mr. Trujillo stated that anyone who had worked for a state agency as their last employer and has a balance with PERA is considered a member and they all receive a ballot. Therefore, whether they moved into the private sector or out of state, they are allowed to participate in elections.

He further stated that the 15,000 are inactive members. An updated report of the numbers will be provided at the end of October in the annual evaluation reports.

Mr. Eichenberg recognized that the inactive members are considered members of PERA, but he wondered why they are considered members of the State employees that voted in the last election. In response, Mr. Trujillo reiterated that it is because their last employment was with a state agency. Mr. Eichenberg pointed out that voters are usually purged from state elections when they move or when they don't vote. He indicated that the mediocre return could be due to the 15,000 people who have moved but still have ballots mailed out to them. He requested Mr. Trujillo to look at the election laws to confirm if that was done correctly.

Mr. Trujillo explained that the election is designed and overseen by the PERA Board and does not follow state election laws. It is therefore at the Board's discretion to make changes to those election laws and determine who's eligible to vote.

Mr. Davis stated that those inactive members are included because they are still part of the fund and have a voice in the fund. That voice is valid until they refund or retire. After retiring, they can become retiree eligible voting members.

Ms. Naranjo Lopez inquired about the fate of the undelivered ballots. She also asked if a follow-up is done to check if the members have moved.

Mr. Marquez stated that there is a list of members that will be given to PERA to update addresses. He added that they hold all the undelivered ballots. Ms. Naranjo Lopez agreed that the addresses need to be updated to ensure that ballots are not being continuously sent out to the wrong addresses.

Mr. Marquez explained that most of the ballots that come back have P.O Box numbers that have been closed. Some of them have no receptacle for mail delivery. They might have changed their addresses, but had not changed them with PERA.

Mr. Trujillo requested Mr. Marquez to touch on what happens at Automated Election Systems, AES, after being provided with the mailing list and the databases they run it through to ensure the addresses are accurate.

Mr. Marquez stated that once they get the list, they run it through the NCOA, National Change of Address, to ensure they get the most up-to-date addresses. He added that they have been able to deliver numerous times to the undeliverable numbers.

Ms. Rosales Ortiz sought legal opinion on whether there can be a resolution regarding the inactive members, to consider their vote differently. She agreed that their vote privileges should

not be taken away, but the way they are counted can be modified. She suggested that the Board consider how those people should be counted at state, municipal, and county levels.

Mr. Eichenberg appreciated Mr. Davis' comments and pointed out that his wife is a former City employee and he would not want her to be deprived of her right to vote in future elections.

Loretta Naranjo Lopez moved to approve Election Report from Automated Election Systems. Paula Fisher seconded the motion. The motion passed by a unanimous roll call vote as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	Yes
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes

E.2. Certification of 2021 State Election

Tim Eichenberg moved to approve the certification of the 2021 State Election. Paula Fisher seconded the motion. The motion passed by a unanimous roll call vote as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	Yes
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes

E.3. Appointment and Swearing in of State Election Winner.

Roberto Ramirez moved to appoint Claudia Armijo to fill state position vacancy. Loretta Naranjo Lopez seconded the motion.

Mr. Davis reiterated that the process is not complying with the New Mexico Administrative Code. He would, therefore, be voting 'no'.

Mr. Neel also felt that the Board was not abiding by the appropriate statute law or ordinance.

Mr. Eichenberg requested legal opinion on the matter.

Ms. Schoeppner reiterated that there is precedent for when there is an elected member and a vacancy occurs for the same position, the newly elected member can be appointed to fill the vacancy immediately. She, however, cautioned that once it's done, there will be no turning back.

Mr. Neel asked Ms. Schoeppner if it was common to do opinions after the fact. Ms. Schoeppner stated that she was not aware of an instance where the office of legal counsel had provided written opinion after action had been taken by the Board.

Mr. Neel reiterated that since the Board was under scrutiny, it would be better to defer this appointment for another 30 days and get a firm legal opinion.

Mr. Davis pointed out that Ms. Schoeppner was not citing any State statute, rule, or policy and procedure. Thus the Board would be acting on an opinion that still needed more research. He did not see the rush to have a 12th Board member. The prudent thing would be to defer for 30 days.

Ms. Naranjo Lopez cited that the last sentence of Rule 2.80.200.30 states that the New Mexico PERA Board shall immediately fill the vacancy. She, therefore, felt that the Board was well within its right to move forward.

Mr. Davis argued that that interpretation of the rule was after complying with the correct process.

The above motion passed by a roll call vote of 6 to 3 as follows;

Francis Page	Yes
Lawrence Davis	No
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	Yes
Steve Neel	No
Shirley Ragin	No
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes

Acting Chair Page swore in Ms. Claudia Armijo as the new PERA Board member.

Ms. Armijo thanked Chair Page and stated she was ready to work for PERA.

7. F. Update from ED AdHoc Search Committee on Executive Director.

Vice Chair of the AdHoc Search Committee, Tim Eichenberg, stated that the Board had given the timeline of appointing a new executive director as December 1.

Mr. Eichenberg said following the previous meeting, he had looked at the procurement code and investigated whether there was a statewide price agreement with headhunters firms, people who seek employees for the State of New Mexico. The head hunters had indicated that they could not do the level of the executive director.

After discussions, the Committee found that with the procurement process, they could not meet the December 1 timeline. Mr. Eichenberg, therefore, presented the Board with two proposals; one would be to suspend the process of looking for a new executive director, effective today. The second proposal would be to hire Greg Trujillo as PERA's new executive director.

Mr. Ramirez moved to suspend the search for a new Executive Director effective immediately. Claudia Armijo seconded the motion.

Ms. Naranjo Lopez stated that the Board had already voted to move forward and start the process afresh. She added that she had also filed a complaint against Mr. Trujillo. She was surprised that Mr. Eichenberg was speaking on behalf of the Committee yet they had not met for discussions. She suggested that this action be deferred till the AdHoc Committee meets.

Mr. Davis inquired about the names of the headhunters that Mr. Eichenberg had talked to. Mr. Eichenberg stated that he could give out the name of the individual that he had spoken to since it's on the price agreement. He'd had several conversations with the individual and turned that over to the AdHoc Committee Chair, Maggie Toulouse Oliver. He requested some time to track down the name and number of the employer on the price agreement with the State of New Mexico.

He also stated that the other national companies were names that were given out by some PERA staff. He apologized that he was not fully prepared to answer this question because he had learned at the last minute that Ms. Toulouse Oliver would not be attending the meeting.

Mr. Davis felt that research should be documented to ensure that there is a record that the headhunters were contacted and the outcome of those conversations.

Mr. Eichenberg reiterated that his proposals were based on the fact that the timeline could not be met due to several impediments. Mr. Davis agreed that with the procurement process, it would not have been possible to meet the deadline.

Chair Page confirmed that he had received the names of three companies from Harvey and he had forwarded those to the AdHoc Committee for review.

Ms. Naranjo Lopez pointed out that approaching the attorneys without Board approval was a violation of the agreement with Lederman. Ms. Naranjo Lopez then listed her issues that she believed were violations. Ms. Naranjo Lopez stated that she would resubmit her complaint to the Ethics Committee. She also felt that Mr. Eichenberg was unethical as he had not provided information to the Ad Hoc Committee prior to this meeting.

Ms. Armijo called for the vote.

Ms. Winter confirmed that according to Robert's Rules, the vote can move forward if a Board member has called for the question and all Board members who requested to speak have spoken at least once.

The motion to suspend the Executive Director search passed by a roll call vote of 8 to 1 as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	No
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes
Claudia Armijo	Yes

Roberto Ramirez moved to hire Greg Trujillo as the new Executive Director of PERA. Claudia Armijo seconded the motion.

Chair Page inquired if a salary amount is needed on the motion to hire Mr. Trujillo. Ms. Schoeppner stated that that could be established at a later meeting.

Mr. Davis requested Mr. Eichenberg and Mr. Ramirez reiterate for the record that based on their research, Mr. Trujillo was fully qualified for the position, was a valid candidate, and was interviewed, to dismiss any allegations against him.

Mr. Eichenberg stated that he had sat through all the interviews of the candidates except for the in-house. He felt that Mr. Trujillo as well as the other candidates met all the minimum qualifications.

On the salary issue, Mr. Eichenberg stated that Mr. Trujillo deserved more money than he was currently being paid. He added that one candidate dropped out because there was no salary increase. He hoped that next month's agenda would discuss how to compensate Mr. Trujillo if he accepts the job.

Mr. Davis requested Mr. Ramirez to give his opinion on why he was in favor of Mr. Trujillo and not the other two candidates.

Mr. Ramirez stated that he had sat through all the interviews on Zoom and in person. He believed that Mr. Trujillo was the best man for the job as he had done his due diligence and his work as the interim Executive Director had proven his ability.

Ms. Naranjo Lopez expressed concern claiming that Mr. Eichenberg had put false information on the agenda since the Ad Hoc Committee had not met. She added that no action stated that the Committee was going to stop the process and get a company to redo it. There was also no action stating that they were going to hire Greg Trujillo.

Mr. Eichenberg acknowledged his mistake and pointed out that what the agenda stated was the hiring of an executive director. He apologized for mentioning Mr. Trujillo's name. He, however, believed that mentioning any of the candidates' names would not have influenced any of the Board members' decisions.

Mr. Neel requested Ms. Naranjo Lopez to present to the Board credible evidence, if she has any, to support her allegations against Mr. Trujillo or Mr. Eichenberg.

The motion to hire Greg Trujillo as PERA Executive Director passed by a roll call vote of 9 to 1 as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	No
Steve Neel	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes
Claudia Armijo	Yes

Mr. Davis requested a chance to explain his vote. He stated that throughout the whole interview process, Mr. Trujillo had been his first choice. He congratulated him on becoming the next executive director and stated that it was well deserved.

Mr. Neel also congratulated Mr. Trujillo. He added that he had been a critic of the process, but had believed that Mr. Trujillo was the best qualified for the position. Mr. Trujillo had proven himself in the interim and was well acclimated in every segment.

Ms. Armijo stated that although she was new for this term, she had served on the Board for four years starting in 2017. She had also worked at PERA and with Mr. Trujillo for a while and recognized that he was an exceptional, well-qualified candidate for the position.

Mr. Trujillo accepted the position of Executive Director. He stated that he will continue working with staff to move the fund forward. Chair Page thanked and congratulated Mr. Trujillo.

Mr. Eichenberg also congratulated Mr. Trujillo. He reiterated his apology to Ms. Naranjo Lopez and explained that he did not have a conversation with her because he had not been assigned to talk to her.

Ms. Ragin shared some Board members' sentiments about Mr. Trujillo. She added that she had enjoyed working with him and urged the Board and all PERA staff to support him in moving forward.

Ms. Rosales Ortiz also congratulated and thanked Mr. Trujillo for his work as interim director.

7. G. CIO Report. *[Exhibit 7]*

Acting CIO, Kristin Varela, started by welcoming Ms. Armijo back to the Board. She was looking forward to providing her with the required orientation and working with her in future works.

Ms. Varela also congratulated Mr. Trujillo and stated that he was the most deserving since continuity was critical for the future of the fund.

She reported that another fiscal year review had been done last month. She also reiterated last year's challenges brought about by the COVID-19 pandemic. She pointed out that the investment team takes pride in serving the financial wellbeing and stability of New Mexico PERA members.

For FY21, Ms. Varela reported that it had been a strong beta rally year and growth assets surpassed expectations. She stated that the team is focused on diversification and a consistent path towards success with a more conservative portfolio. This will enable the portfolio to participate close to the same pace as the policy portfolio.

Ms. Varela also reported that August was a strong month closing at \$18.2 billion with an estimated return of 2.5% month to date. This is expected to get the fund at about 4.2% fiscal year to date.

7. H. Executive Director's Report. *[Exhibit 8]*

Executive Director, Greg Trujillo reported that there was nothing out of the ordinary in his report. Payroll continues to grow as expected. He thanked Ms. Perea for her presentation and for putting together the Planning Committee. He was also excited about the upcoming 75th-anniversary celebrations.

Mr. Davis noted that from an article he had read, ERB retirements were up about 40% compared to last July. He asked if there was an increase in retirements coming through PERA.

In response, Mr. Trujillo stated that PERA was not seeing an increase. He added that there had been an uptick last month but nothing close to what ERB went through. He explained that the increase in retirement for teachers was due to the shift to remote learning. Mr. Trujillo would send out the numbers to the Board.

With regards to retiree healthcare, Acting Chair Page wondered whether the fee should be adjusted for non-vaccinated individuals considering the vaccination rate of COVID. He felt that the question should be posed to the Board of Retiree Healthcare of why members were paying high insurance costs when others were not getting vaccinated. Mr. Trujillo would raise that with the Board.

Board Recessed to Executive Session at 12:20pm to discuss;

NMSA 1978; §10-15-1 (H) (3)

Administrative Appeal

1. David T. Salguero

Paula Fisher moved to go to Executive Session. Claudia Armijo seconded. Motion passed unanimously as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes
Claudia Armijo	Yes

The Board convened in Regular Session at 12:41pm.

Board members present

Francis Page, Acting Chair
Lawrence Davis
Tim Eichenberg
Paula Fisher
Loretta Naranjo Lopez
Shirley Ragin
Roberto Ramirez
Diana Rosales Ortiz
Claudia Armijo

Chair Page stated the only business discussed in Executive Session was what was on the agenda.

Final Decision on Administrative Appeal

1. David T. Salguero (PID # 119212)

Loretta Naranjo Lopez moved to remand the case back to the hearing officer to allow for clarification and to take additional information from David Salguero. Diana Rosales Ortiz seconded the motion. The motion passed with a unanimous roll call vote as follows;

Francis Page	Yes
Lawrence Davis	Yes
Tim Eichenberg	Yes
Paula Fisher	Yes
Loretta Naranjo Lopez	Yes
Shirley Ragin	Yes
Roberto Ramirez	Yes
Diana Rosales Ortiz	Yes
Claudia Armijo	Yes

8. Adjournment

With no further business to discuss, Acting Chair Page adjourned the meeting at approximately 12.45 PM.

Approved by:

Francis Page, Acting Chair
PERA Board of Trustees

ATTEST:

Greg Trujillo, Executive Director

Attached Exhibit(s)

Exhibit 1: Agenda
Exhibit 2: Consent Agenda
Exhibit 3: Draft Rules & Administrative Charter
Exhibit 4: 75th Anniversary Presentation
Exhibit 5: Acting Chair Message to Membership
Exhibit 6: AES Election Report
Exhibit 7: CIO Report
Exhibit 8: ED Report



DISABILITY COMMITTEE CHARTER

Section 1

Statement of Purpose

The PERA Board's objective is to encourage continued employment of members while providing protection in cases of disability. The PERA Board has oversight of the Plan's process for approval of initial disability retirement applications and revaluation of retirees' continued eligibility for disability retirement benefits in compliance with the PERA Act, administrative regulations, and policies. The Disability Committee assists the Board in fulfilling its fiduciary oversight responsibilities by participating in the evaluation of initial applications for disability retirement and applications for reevaluation and working with PERA executive staff to develop recommendations and advice to the Board.

Section 2

Organization/Membership

The Disability Committee shall be composed of one physician licensed in New Mexico and at least two and up to 4 physicians; and at least one, but not more than three members of the Board. The physicians need not be either a board member or association member but may be either or both. The disability committee may also engage a psychologist or psychiatrist licensed in New Mexico to evaluate and advise the Committee regarding applications for disability retirement based in whole or in part on mental incapacity. The Disability Committee shall have a Committee Chair and Vice-Chair, and members who are appointed annually by the PERA Board Chair. Members shall be independent and free from conflict of interest, whether perceived or actual. The Executive Director or his or her designee shall serve as a secretary for the Committee.

Section 3

Committee Meetings and Objectives

The Committee's main objectives are evaluation of initial application for disability retirement and reevaluation of retirees' continued eligibility for disability retirement benefits. The committee shall meet monthly to address initial application for disability retirement benefits and reevaluations for continued disability retirement benefits on the committee's agenda.

Section 4

Authority and Ethics

The Disability Committee shall have the following authorities: to provide assistance to the Board regarding evaluation of disability retirement benefits, including initial applications, reevaluations



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DISABILITY COMMITTEE CHARTER

for continued eligibility, remands for administrative hearings, trial employment and pension reclassifications within the scope of its purview. The committee shall carry out their duties with the highest level of honesty and integrity and act in the interest of the PERA membership. The disability committee shall keep all matters of disability-related medical information confidential and execute a confidentiality agreement regarding medical information annually.

Adopted this 12th day of October, 2021.

Shirley Ragin, Disability Review Committee Chair



Ratification Report

Last Name	First Name	Middle Name	Retirement Date	Retirement Type	Reciprocity	Retirement Code
ADAMS	LINDA	S.	2021/10/01	Normal	NAP	SR
ADAMS	LORY	J	2021/10/01	Normal	NAP	SR
ALLEN	AIKO	P.	2021/10/01	Normal	NAP	SR
ALTENBERG	RICHARD	J.	2021/10/01	Normal	NAP	SR
ANZIVINO	JOSEPH		2021/10/01	Deferred	NAP	SR
ARMENTA	RUBEN		2021/10/01	Normal	NAP	SR
ARMIJO	JOSHUA		2021/10/01	Normal	NAP	SR
ARMIJO	ROY	A	2021/10/01	Deferred	NAP	SR
ARONESCU	NICOLETTA		2021/10/01	Normal	NAP	SR
TAYLOR						
BACA	MICHAEL	D.	2021/10/01	Normal	NAP	SR
BACON	PAMELA	S	2021/10/01	Deferred	NAP	SR
BACON	PAMELA	S	2021/10/01	Normal	NAP	SR
BAIR	DUANE	M.	2021/10/01	Normal	NAP	SR
BASINGER	DONALD	V.	2021/10/01	Normal	NAP	SR
BECKER	LISA	J.	2021/10/01	Normal	NAP	SR
BENAVIDEZ	DANETTE	M	2021/10/01	Normal	NAP	SR
BINNERT	PATRICIA	J.	2021/10/01	Deferred	NAP	SR
BIRMINGHAM	TIMOTHY	K.	2021/10/01	Normal	NAP	SR
BONHAM	ANTHONY	L	2021/10/01	Normal	NAP	SR
BOOR	MARK	C.	2021/10/01	Normal	NAP	SR
BOYD	GEORGE	D.	2021/10/01	Normal	NAP	SR
BREY	MICHAEL	L	2021/10/01	Normal	NAP	SR
CALLUS	CARL	E.	2021/10/01	Normal	NAP	SR
CAMACHO	ISMAEL	L.	2021/10/01	Deferred	NAP	SR
CARRASCO	EFREN	V.	2021/10/01	Normal	NAP	SR
CASTILLO	ERNEST		2021/10/01	Normal	NAP	SR
CHAVEZ	GINA	M.	2021/10/01	Normal	NAP	SR
CLEARY	THERESA		2021/10/01	Normal	NAP	SR
COLLINS	TRUETT	R	2021/10/01	Normal	NAP	SR
DAUBER	KATE	M.	2021/10/01	Normal	NAP	SR
DAVIS	BETHANY	R	2021/10/01	Deferred	NAP	SR
DAVIS	TROY	J.	2021/10/01	Normal	NAP	SR
DEARSCH	JAMES	W.	2021/10/01	Normal	NAP	SR
DIGREGORIO	TRACIE	K	2021/10/01	Normal	NAP	SR
DOMINGUEZ	MARK	A	2021/10/01	Normal	NAP	SR
DRISKELL	WELDON	W	2021/10/01	Deferred	NAP	SR
EIZAGUIRRE	MARIA	I.	2021/10/01	Deferred	NAP	SR
ESCUDERO	LORRAINE	M.	2021/10/01	Normal	NAP	SR



PERA

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EVANS	MARGARET	L.	2021/10/01	Deferred	NAP	SR
FAMBROUGH	DONNA	F.	2021/10/01	Normal	NAP	SR
FARMER	AUBREY	W.	2021/10/01	Normal	NAP	SR
FELMLEY	JENNIFER	W.	2021/10/01	Normal	NAP	SR
FLORES	MARCIA	A.	2021/10/01	Normal	NAP	SR
FRYBACK	SUSAN	L.	2021/10/01	Deferred	NAP	SR
GALLEGOS	JO ANN		2021/10/01	Normal	NAP	SR
GALLEGOS	JOSEPH	E.	2021/10/01	Normal	NAP	SR
GARCIA	CARL	A.	2021/10/01	Normal	NAP	SR
GARNER	LARRY	E.	2021/10/01	Normal	NAP	SR
GAUGHAN	EDWARD	D.	2021/10/01	Normal	NAP	SR
GONZALES	DOLORES	C.	2021/10/01	Normal	NAP	SR
GONZALES	ERIC	L.	2021/10/01	Normal	NAP	SR
GONZALES	LORA	L.	2021/10/01	Normal	NAP	SR
GRAHAM	MARK	K.	2021/10/01	Normal	NAP	SR
GREGORY	JERRY	D.	2021/10/01	Normal	NAP	SR
GROSS	LINDA	S.	2021/10/01	Normal	NAP	SR
GUTIERREZ	PAT	J.	2021/10/01	Normal	NAP	SR
HAAS	TAMARA	P.	2021/10/01	Normal	NAP	SR
HARRIS	ALFRED	J.	2021/10/01	Normal	NAP	SR
HILL	CLYDE	J.	2021/10/01	Normal	NAP	SR
HOLM	ANCHOR	E.	2021/10/01	Normal	NAP	SR
ITALIANO	ROBERT		2021/10/01	Normal	NAP	SR
JARAMILLO	DIANA	R.	2021/10/01	Normal	NAP	SR
JOEY	TEX	A.	2021/10/01	Normal	NAP	SR
JOSEPH	JILL		2021/10/01	Normal	NAP	SR
KNIGHT	ERIC	A.	2021/10/01	Normal	NAP	SR
KOESTERS	SUZANNE	M.	2021/10/01	Normal	NAP	SR
LAKATOS	STEVEN	A.	2021/10/01	Normal	NAP	SR
Livingston	Walter		2021/10/01	Normal	NAP	SR
LOFTIS	MICHAEL	D.	2021/10/01	Normal	NAP	SR
LONG	PETERSON		2021/10/01	Normal	NAP	SR
LOPEZ	JUDITH	A.	2021/10/01	Normal	NAP	SR
LOVATO	ANDREW	R.	2021/10/01	Normal	NAP	SR
LUCERO	PATRICK	M.	2021/10/01	Normal	NAP	SR
MADRID	BONNIE	M.	2021/10/01	Normal	NAP	SR
MALONE	MARGARET	E.	2021/10/01	Deferred	NAP	SR
MARTIN	TIMOTHY	N.	2021/10/01	Normal	NAP	SR
MARTINEZ	THERESA	M.	2021/10/01	Normal	NAP	SR
MCCOY	TERRY	E.	2021/10/01	Normal	NAP	SR
McMILLAN	TERRY	H.	2021/10/01	Deferred	NAP	SR
MIERA	CHARLENE		2021/10/01	Normal	NAP	SR
MIRABAL	SANDRA	V.	2021/10/01	Normal	NAP	SR
MORROW	WILLIAM	A.	2021/10/01	Normal	NAP	SR
NICOLOSI	VINCENT	A.	2021/10/01	Normal	NAP	SR



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NOBLE	RHONDA	K.	2021/10/01	Normal	NAP	SR
NORTHCUTT	KIM	W.	2021/10/01	Normal	NAP	SR
NUNN	RICHARD	G.	2021/10/01	Normal	NAP	SR
OLIVAS	DOLORES	D.	2021/10/01	Normal	NAP	SR
OLVERA	DONOVAN	R.	2021/10/01	Normal	NAP	SR
ONATE	CORINNE	S.	2021/10/01	Normal	NAP	SR
ORTELLI	ANGELO	E.	2021/10/01	Normal	NAP	SR
PACHECO	VALERIE	Y.	2021/10/01	Normal	NAP	SR
PADILLA	JAMES	L.	2021/10/01	Normal	NAP	SR
PALMER	MICHAEL		2021/10/01	Normal	NAP	SR
PEREA	JOHNNY	M.	2021/10/01	Normal	NAP	SR
PINE	ROBERT	A	2021/10/01	Normal	NAP	SR
POOLE	CHARLES	E.	2021/10/01	Normal	NAP	SR
PUGATCH	LAURA	C.	2021/10/01	Normal	NAP	SR
QUINTANA-	THERESE	A	2021/10/01	Normal	NAP	SR
DOOLITTLE						
REYNOLDS	LETICIA	B	2021/10/01	Normal	NAP	SR
REYNOLDS	WESLEY	T.	2021/10/01	Normal	NAP	SR
RICHARD	THAXTER	R.	2021/10/01	Duty	NAP	DR
RIVERA-LEWIS	DESIREE		2021/10/01	Normal	NAP	SR
RODRIGUEZ	BRIAN	J.	2021/10/01	Normal	NAP	SR
ROMERO	KATHY	A.	2021/10/01	Deferred	NAP	SR
ROMERO	PATRICK		2021/10/01	Normal	NAP	SR
SAIZ	NATALIA	A.	2021/10/01	Normal	NAP	SR
SANCHEZ	SYLVIA	M.	2021/10/01	Deferred	NAP	SR
SANDOVAL	MATT	C	2021/10/01	Normal	NAP	SR
SHELDEN	GERALD	R.	2021/10/01	Normal	NAP	SR
SHERBUTT	JESSE	B.	2021/10/01	Normal	NAP	SR
SISNEROS	ABADE		2021/10/01	Normal	NAP	SR
SKAGGS	TANYA	K	2021/10/01	Deferred	NAP	SR
SKASIK	SUZANNE	M.	2021/10/01	Normal	NAP	SR
STECKLER	CALVIN	N.	2021/10/01	Deferred	NAP	SR
STEIMLE	VERONICA	V.	2021/10/01	Normal	NAP	SR
SULLIVAN	MICHAEL	F	2021/10/01	Normal	NAP	SR
TALAMANTE	JAMIE	L.	2021/10/01	Normal	NAP	SR
TENBROECK	CARLA	J.	2021/10/01	Deferred	NAP	SR
THOMAS	CURTIS	W.	2021/10/01	Deferred	NAP	SR
THORNTON	DONNA MARIE	N	2021/10/01	Normal	NAP	SR
TOMPKINS	DAVID	K	2021/10/01	Normal	NAP	SR
TURRIETTA	ANTHONY	J.	2021/10/01	Normal	NAP	SR
VALDESPINO	ALEX	G.	2021/10/01	Normal	NAP	SR
VALENCIA	REYNALDO	J	2021/10/01	Normal	NAP	SR
VALVERDE	MARCIA	G.	2021/10/01	Normal	NAP	SR
VARELA	ERNESTINO	L	2021/10/01	Normal	NAP	SR
VARNEY	LYNNE	M.	2021/10/01	Deferred	NAP	SR



INVESTED IN TOMORROW.

VICKERY	EDDIE		2021/10/01	Normal	NAP	SR
VIGIL	RAY	R.	2021/10/01	Normal	NAP	SR
VIGIL	RON	A.	2021/10/01	Normal	NAP	SR
VIGIL - HAYES	DIANE	I.	2021/10/01	Normal	NAP	SR
WOODBURY	BEVERLY	A.	2021/10/01	Normal	NAP	SR
ZAMORA	SUZANNE	M.	2021/10/01	Normal	NAP	SR

NOVEMBER 1ST–3RD, 2021
VIRTUAL CONFERENCE



**PENSION
BRIDGE** | ALTERNATIVES
2021

info@pensionbridge.com | New York Office: (646) 891-2152

MONDAY, NOVEMBER 1ST — HEDGE FUNDS

11:00 AM – 11:30 AM: KEYNOTE SPEAKER

“CIO Conversation: Navigating Markets in a Changing Environment”

SPEAKER

Alex Doñé, Chief Investment Officer, New York City Retirement Systems, Office of the Comptroller

INTERVIEWED BY

Mike McCabe, Partner, **Head of Strategy, Stepstone**

11:35 AM – 12:05 PM: SYSTEMATIC MACRO AND ALTERNATIVE RISK PREMIA

Anthony Lawler, Head of GAM Systematic, **GAM Investments**

12:05 PM – 12:20 PM: NETWORKING – ONE-ON-ONE MEETINGS WITH LPS, CONSULTANTS & GPS

12:20 PM – 1:00 PM: ROLE OF HEDGE FUNDS IN THE PORTFOLIO

- How has the Role of Hedge Funds Changed in Recent Years? What Role does it play Today within the Overall Portfolio?
- What is the best way to Benchmark Hedge Fund Strategies? How Important is Benchmarking against Peers?
- Which Hedge Fund Strategies are a Good Fit as we Enter a Higher Inflationary Period?
- Is Headline Risk still a Concern? Does Underperforming the S&P 500 Create Issues?
- Are Fund of Funds Worth the Added Fees in Today's Environment?
- What Trends are you seeing in Fees, Customization or Transparency?
- Where do you see the Best Alpha Opportunities going forward?
- How much Confidence is there in Hedge Funds Outperforming in a Down Market?
- What are the Macro Headwinds Hedge Funds could be facing Looking Out 1-3 Years?
- Are Hedge Funds Currently Focused on Protecting Principal or Creating Returns?

MODERATOR

Travis Williamson, Partner, Head of Hedge Fund Research, **Albourne**

SPEAKERS

Julia Winterson, Senior Director, Alternative Investments, **CommonSpirit Health**

Adam Posner, CFA, Principal, **HighVista Strategies**

Jason Rector, CFA, Senior Analyst, **State of Wisconsin Investment Board**



1:00 PM – 1:15 PM: NETWORKING – ONE-ON-ONE MEETINGS WITH LPS, CONSULTANTS & GPS

1:15 PM – 1:55 PM: LONG/SHORT – IS IT TIME TO EMBRACE AGAIN?

- What is the State of the Long/Short Industry?
- With Dispersion Re-Entering the Marketplace, is it time for Investors to once again Embrace Long/Short Investing?
- What are the Biggest Questions Marks Surrounding the Long/Short Industry Today? Can they be Overcome?
- Can Shorting be Trusted with the Rise of Reddit Groups and Gamestop?
- Has the Gamestop Situation Altered the View of Hedge Funds and Shorting at the Investor Level?
- How have Fees Changed with Long/Short in Recent Years? And what's to come?
- What Sectors are Currently being Looked Into at by Shortsellers?
- Do Systematic Strategies have an Advantage in this Space? Why or why not?
- Will Low Interest Rates Continue to Challenge Shorting in General?
- What are the Return Expectations Looking 1-3 Years Ahead in this Space?

MODERATOR

Keith Seibert, Investment Research and Family Office Consultant, **Laurel Hill**

SPEAKERS

Darren Wolf, Global Head of Investments, Alternative Investment Strategies, **Aberdeen Standard Investments**

Howard Cooper, Founder, Principal, **Cooper Family Office**

Chad Myhre, CFA, CAIA, Director of Investments, **Heinz Family Office**

2:00 PM – 2:40 PM: CURRENCY + CRYPTO

- How will a Potentially Weakening USD change Investors' Frame of Mind?
- What Sectors and Geographies Tend to Perform Well when the Dollar Weakens?
- What are the most Common Reasons Asset Owners give for Not Actively Managing Currency? Are these Reasons Valid or Not?
- What has Changed that Enables One's Ability to Manage Hedging and Reduce Risk for both Developed Markets and Emerging Markets?
- Can we Expect Crypto to make a Niche in Institutional Portfolios? Is this the right move for a Fiduciary at this Stage?
- Is the Role of Crypto to be a Diversifier or Return-Seeking?
- Have Institutional Board and Investment Teams been Formally Educated on Crypto? Does it Make Sense for this to Occur at this time?
- Does Headline Risk Play a Role when it comes to Institutions making Investments?
- What kind of Return expectations are Investors Levying on Crypto Currencies?
- Will Crypto Currency become a Main Stay in Investor Portfolios as we Looking into the Future?

MODERATOR

Joe Marenda, Partner, **Cambridge Associates**

SPEAKERS

Katherine Molnar, Chief Investment Officer, **Fairfax County Police Officers Retirement System**

Mark Astley, Chief Executive Officer, **Millennium Global Investments**

Eric Peters, Chief Executive Officer, Chief Investment Officer, **One River Asset Management**

 **2:40 PM – 2:55 PM: NETWORKING – ONE-ON-ONE MEETINGS WITH LPS, CONSULTANTS & GPS**

2:55 PM – 3:35 PM: ENVIRONMENTAL, SOCIAL AND GOVERNANCE, (ESG)

- How do Investors Measure the Success or Progress of ESG Strategies within the Alts and Overall Portfolios?
- What is the Best Way to Integrate ESG into the Alts Portfolio?
- Are Alts Managers being Fully Transparent when it comes to Diversity Transparency?
- What are the Top Ways to find Pure ESG Managers Verses those Greenwashing?
- Has Impact Investing Lived up to its Return Expectations? Why or why not?
- What Approach should Hedge Fund Managers be taking with ESG becoming an Increasingly Important Factor for Manager Selection?
- How are LPs Currently Monitoring GPs' Responsible Investment Practices?
- Is it possible for ESG Investing to be Compatible with Distressed Investing? If so, how?
- How much Weight does being a UN PRI Signatory have during the Manager Selection Process?
- Is there reliable ESG Data focusing on the Emerging Markets?

MODERATOR

David Fanger, CFA, FSA, U.S. Business Leader, Sustainable Investment, **Mercer**

SPEAKERS

Michael Oliver Weinberg, CFA, Managing Director, Head of Hedge Funds and Alternative Alpha, **APG Asset Management U.S.**

Danielle Walsh, Managing Director, ESG and Impact Investing, **Goldman Sachs Asset Management**

Julie Trent, Head of Partner Outreach and Communication, Environmental Focus Strategy, **UBS O'Connor**

Denise Crowley, Head of Securitized Credit, **ZAIS Group**

3:40 PM – 4:20 PM: GLOBAL MACRO

- Do you View Macro Investing as a Hedge if the Market Drops? If so, which Strategies provide the Best Downside Protection while Capturing Upside?
- What are the Best Ways to Evaluate and Monitor Macro Managers?
- How do you Breakdown your Allocation to Macro Between Discretionary and Systematic?
- What is the Specific Role of Global Macro in the Overall Portfolio? What are the Key Differences from other Hedge Fund Strategies?

- How do you View Managed Futures Coming out of the Pandemic? How about Trend Following Investing?
- Does Inflation Present a Headwind to Global Macro Investing? What kind of Impact does it have?
- Aside from Inflation, what are the Biggest Global Macro Themes you are Focusing on?
- What Types of Risk do Currency Strategies Have in this Environment? What about Interest Rate Strategies?
- What kind of Global Macro Flows can we Expect over the Next 1-2 Years?
- How have Fees Changed During the Pandemic? Has there been a change or have Fees Held Steady?

MODERATOR

Lawrence Cinamon, Senior Vice President, Global Macro Strategy Head, **Aksia**

SPEAKERS

Michael Swift, Chief Executive Officer, **Abbey Capital**

Steve Xia, PhD, CFA, Senior Managing Director, Head of Quant, ALM & Analytics, **Guardian Life Insurance Co.**

Alex Lennard, Investment Director, **Ruffer**

TUESDAY, NOVEMBER 2ND — PRIVATE EQUITY/PRIVATE CREDIT

11:00 AM – 12:00 NOON: INVESTOR EXCHANGE

SPEAKERS

Ilya Gertsberg, Chief Investment Officer, **Apolis**

Abhishek Rane, Senior Analyst, Risk Management, **Ascension Investment Management**

Panayiotis Lambropoulos, CFA, CAIA, FRM, Portfolio Manager - Hedge Funds, **Employees Retirement System of Texas**

Paul Chai, Director, External Public Markets, **Kansas State University Foundation**

Neil Guglielmo, General Manager, **Los Angeles City Employees' Retirement System**

Petya Nikolova, Head of Infrastructure Investments, **New York City Retirement System**

Drew O'Brien, Director, Investments, **Nokia**

Michael Shackelford, Director of Investments, **North Dakota Board of University and School Lands**

Jake Abbott, Investment Officer, **San Bernardino County Employees' Retirement Association**

Vaibhav Kalia, VP, Senior Portfolio Manager, **Selective Insurance Company of America**

Joel Hinkhouse, Director - External Public Markets, **Teacher Retirement System of Texas**

Dorota Czub, Tangible Assets Investment Officer, **Washington State Investment Board**

12:00 NOON – 12:30 PM: THE PATH TO A \$1 TRILLION ANNUAL SECONDARY MARKET

SPEAKER

Yann Robard, Managing Partner, **Whitehorse Liquidity Partners**

12:30 PM – 12:45 PM: NETWORKING – ONE-ON-ONE MEETINGS WITH LPS, CONSULTANTS & GPS

12:45 PM – 1:25 PM: PRIVATE CREDIT

- Does it Make Sense to Focus more on Early Stage Private Credit? Why or why not?
- What about LIBOR/LIBOR-Plus Ceasing to Exist in the Next Few Months, how will Benchmarking Occur?
- What is the Current State of the CLO Market? How should Investors View the Risk/Reward given Current and Future Conditions?
- Is US Direct Lending the Strongest Play when Compared with the Emerging Markets, Non-US, Spaces? Which Sectors make the most Sense looking out 3-5 Years?
- How has ESG Impacted Direct Lending?
- Has Inflation Changed your View on Lower Middle Market Lending?
- How has the Outlook Shifted in “Small Company” Lending vs. Larger EBTIDA Companies?
- Which Sectors do you see as being Most Insulated from a Future Market Downturn?
- What are the Risk Levels of Specialty Finance in this Environment?

- What is the Opportunity Set in European Credit? Which Sectors should be Focused on?
- What are the Main Changes to the Private Credit Industry as a Result of the Pandemic?

MODERATOR

Patrick Adelsbach, Head of Credit Strategies, **Aksia**

SPEAKERS

Chris Hentemann, Founder, Managing Partner and Chief Investment Officer, **400 Capital Management**

Theodore L. Koenig, President, CEO, Founder, **Monroe Capital**

Mohamed Elkordy, PhD, Senior Portfolio Manager, **New York State Common Retirement Fund**

Christopher D. Long, Chairman, CEO, Portfolio Manager and Founder, **Palmer Square Capital Management**

1:30 PM – 2:10 PM: DISTRESSED INVESTING

- Has the Distressed Cycle Changed over the Past Year, and if so, how?
- Which Sectors are Showing Good Investment Value at this Stage? What Sectors should be Avoided?
- What Geographies are you looking at for Opportunities?
- Has the CMBS Market made the turn as we now come out of the Pandemic?
- What are you seeing in Deal Structuring and Covenants Today? What does that mean for Future Distressed Opportunities?
- What are the Unforeseen Risks in Distressed Investing at this Point in Time?
- What is the State of the CLO Market?
- What Kind of Distressed Opportunities are the Emerging Markets Showing? Any Sectors Standing Out?
- How do you View Default Rates as we Look Ahead to the New Year?
- Are Distressed Investments Expensive Currently? Any Bargains? If so, where?

MODERATOR

Kristen Jones, Partner, Private Credit and Private Equity Research Analyst, **Albourne America**

SPEAKERS

Barry Miller, Partner, Ares Secondary Solutions Group, **Ares Management Corporation**

Catherine Ulozas, Chief Investment Officer, **Drexel University**

Chris Sheldon, Partner, Head of Leveraged Credit, **KKR**

Ryan Kelly, CFA, Principal, Senior Portfolio Manager, **PGIM Fixed Income**

2:10 PM – 2:25 PM: NETWORKING – ONE-ON-ONE MEETINGS WITH LPS, CONSULTANTS & GPS

2:25 PM – 3:05 PM: SECONDARIES + CO-INVESTMENTS

- How have the Secondary and Co-Investment Markets Evolved Through the Pandemic?
- In Secondaries, is the Leading Role for GPs here to stay?
- How would you Rate Current Secondary Fundraising Activity? Is this Set to Change any time soon?
- Can we Expect GP-Led Secondaries to Continue into the Future? Why or why not?

- Are there any Growth Areas in the Secondaries Space?
- Is it Imperative for GPs to roll a significant part of their Carried Interest into the New Structure? How important is the Alignment of Interests?
- Can we expect the Co-Investment Market to remain Highly Competitive? If so, how does your Organization try to Position and Market Itself?
- Which Sectors of Secondaries and Co-Investments are right to Invest in coming out of the Pandemic?
- What is the State of the Co-Investment Market at this time?
- Are Smaller LPs at a Disadvantage as far as Deal Opportunities go? If so, why and what is an Alternate Approach for Access?

MODERATOR

John Kettlich, CFA, Partner, **StepStone Group**

SPEAKERS

Han Hu, Private Equity and Mezzanine Portfolio Manager, **Aegon Asset Management**

Jeffrey Keay, Managing Director, **HarbourVest**

Justin Burden, Senior Managing Director, **Industry Ventures**

Andrew Palmer, CFA, Chief Investment Officer, **Maryland State Retirement and Pension System**

 **3:05 PM – 3:20 PM: NETWORKING – ONE-ON-ONE MEETINGS WITH LPS, CONSULTANTS & GPS**

3:20 PM – 4:05 PM: PRIVATE EQUITY

- Are Investors Looking to Further Boost the Size of their Private Equity Portfolios? If so, what Subsectors are they looking to?
- What is the State of the Buyouts Industry? Any Resilient or Noncyclical Sectors with Defensive Growth Investors should be looking at?
- What Kind of ESG Questions are being asked of Private Equity Firms, if any? Are Corporate Governance and D&I the most common conversations?
- What are the Views on SPAC's and are they Here to Stay?
- Are there any Red Flags Presenting Themselves that should Worry Private Equity Investors?
- Where are your Most Optimistic Returns Going Forward as far as Sector or Niche Strategy?
- Has the Amount of Dry Powder Investors changed at all? Are we at or near All-Time Highs?
- Any Sub Asset-Classes Presenting themselves well coming out of the Pandemic? If so, why?
- What Fundraising Trends are there in the Market?
- Have your Views on Companies with Debt Changed at all Over the Past 1-2 Years?

MODERATOR

Tara Blackburn, Managing Director, **Hamilton Lane**

SPEAKERS

James R. Hart “Trey”, Managing Director, **50 South Capital**

Will Scott, Managing Director, Private Equity Lead, Total Fund Management, **Canada Pension Plan Investment Board**

Chris Bloise, Managing Partner, **Court Square Capital Partners**

Tawfiq Popatia, Senior Managing Director, **Onex Partners**

4:05 PM – 4:45 PM: DIFFERENTIATE YOURSELF – WHAT DO MANAGERS NEED TO SHOWCASE IN ORDER TO WIN MANDATES?

- What are some Successful and Attractive Initiatives that are Pushing for Change in the Money Management Industry?
- What New Qualities do you look for in a Manager given the Pandemic's Financial and Economic Impacts?
- How should Managers Improve their Alignment of Interest with Investors?
- Where in the Process Between an RFP and a Mandate do Problems Arise in the Push for Diversity?
- What Overlooked Area within ESG is Important when being Evaluated?
- How do you Gain an Edge for Specialization, Capabilities in Deal Sourcing, Operational Improvements or Value-Add?
- How Important are the Skills for the Drive Toward Digitalization, Process Automation, AI and Machine-Learning?
- Does a Manager's Cybersecurity Risk Management Strategy play a Factor?
- Which Manager Transparency Factors can Stand Out for Particular Strategies?
- Is Improving your Governance and Succession Approach Helpful? Any Successful Strategies for Integration?

MODERATOR

David Smith, CFA, CTP, Senior Vice President, Private Markets Consultant, **Callan**

SPEAKERS

Alex Ambroz, Director, **Cleveland Clinic Foundation**

Angela Miller-May, Chief Investment Officer, **Illinois Municipal Retirement Fund**

Karl Scheer, Chief Investment Officer, **University of Cincinnati**

WEDNESDAY, NOVEMBER 3RD — REAL ASSETS

11:00 AM – 11:30 AM: RESET, RETHINK, REBALANCE: POST-PANDEMIC ALLOCATION STRATEGY

- 2021 as an Inflection Point – Strengthening Economies, Rising Rates and Monetary/Fiscal Policy Stoking Inflationary Fears
- Structural Portfolio Changes – New Institutional Investor Data from Coalition Greenwich (formerly Greenwich Associates)
- Alternative Assets like Gold Gaining Traction as Investors seek to Redefine Diversification to Manage Ongoing Volatility while Driving Growth
- Gold's Attributes as a Strategic Portfolio Asset particularly in Inflationary and Rising Rates Environments
- Gold's Drivers of Demand and Performance

SPEAKER

Justin Sheehan, CFA, Institutional Portfolio Consultant, **World Gold Council**

11:35 AM – 12:15 PM: REAL ESTATE AND WHAT THE POPULATION SHIFT MEANS FOR THE PORTFOLIO

- What does the Population Shift Towards the Suburbs mean for Housing? What is driving this Change and what does it mean for Real Estate Opportunities?
- Will the Office Environment go back to the way it was Pre-Pandemic? What will 'Business as Usual' look like?
- Will Investors Focus Less on Office-Heavy Portfolios Moving Forward? Thoughts on Retail Businesses?
- What Sectors of the Real Estate Market should Investors Focus on Coming out of the Pandemic?
- How have Real Estate Portfolio Fees Changed over the past 1-2 years? What will they look like over the next 5 years?
- What is your Outlook for the U.S. Commercial Mortgage Market?
- How do you View Opportunities in Senior Housing given Population Aging and Future Needs of the Baby Boomer Generation?
- What are your Best Relative Value Ideas?
- Can we expect Further Affordable Housing to be Created from Larger Office Buildings?
- What are the Largest Challenges and Opportunities for New Construction?

MODERATOR

Taylor Mammen, Chief Executive Officer, **RCLCO Fund Advisors**

SPEAKERS

Joe Gorin, Head of U.S. Portfolio Management & Value-Add Investing, **Barings**

Kelly Gebert, Lead Portfolio Manager - Private Market Real Estate, **Ohio Public Employees Retirement System**

JR Pearce, CPA, Senior Investment Officer, **Sacramento County Employees' Retirement System**

12:30 PM – 1:15 PM: HOW INFLATION WILL IMPACT DIFFERENT ASPECTS OF YOUR PORTFOLIO

- How will the Real Assets Portfolio be Impacted by Higher Inflation? What does it mean for the Remainder of the Portfolio?
- Do you Expect Inflation to be Transitory or are we Entering a Prolonged Higher Inflation Period?
- How much of the Current Inflation is driven by Depleted Inventories and Supply-Side Constraints? How much from the Fed and Government Policies?
- Which Real Assets Strategies are Best Equipped to Act as a Hedge in this Environment? Which ones are Not?
- What are the Unforeseen Risks on the Portfolio? How might Asset Allocations Need to Change if we have Sustained Inflation?
- How are Investors Measuring the Impacts of Higher Inflation on their Portfolios?
- Has the Amount of Dry Powder Investors changed at all? Are we at or near All-Time Highs?
- Any Sub Asset-Classes Presenting themselves well coming out of the Pandemic? If so, why?
- What Fundraising Trends are there in the Market?
- Have your Views on Companies with Debt Changed at all Over the Past 1-2 Years?

MODERATOR

Allan Emkin, Managing Principal, Consultant, **Meketa Investment Group**

SPEAKERS

Daniel J. Hoffman, Managing Director, **Cerberus Capital Management**

James Nield, Chief Risk Officer, **Teacher Retirement System of Texas**

Kate Richard, Founder & Chief Investment Officer, **Warwick Investment Group**

Jack Ross, Co-Founder, Managing Partner, **Waterfall Asset Management**

1:20 PM – 2:00 PM: ENERGY + NATURAL RESOURCES

- Are Natural Resources such as Precious Metals, Commodities and Timber still Considered Strong Diversifiers if the Market Turned?
- What are other Types of Natural Resources that make sense to Invest in as a Hedge in this Environment?
- Thoughts on Greenfield vs Brownfield? How about what Clean Energy looks like Long-Term? What ESG Traits are Non-Negotiable when Investing in a Strategy?
- What is the State of the Private Energy Industry?
- What Sectors within Renewables do you find Attractive? Will the Best Opportunities be in the U.S. or in Emerging Markets?
- Do you Find yourself Competing More with other Investors when it comes to Renewables Investing? What Challenges have you Encountered?
- Does it make Sense as a Fiduciary to Replace Oil and Gas in the Portfolio? What does the Surge in Energy Transition mean for Investment in Oil & Gas Assets?
- What kind of New Energy Technology has the Potential to Change the Industry?

- What is the Future of Battery Storage and what will Costs be like?
- What is the State of the Solar Energy Industry?

MODERATOR

Thomas Martin, Head of Private Equity and Real Assets Research, **Aksia**

SPEAKERS

Alistair Thistlethwaite, CFA, Director, Public Securities and Natural Resources, **CalTech**

Philip J. Deutch, Partner, **NGP Energy Technology Partners**

Michael Danov, President and CIO, **SBP Management**

2:00 PM – 2:15 PM: NETWORKING – ONE-ON-ONE MEETINGS WITH LPS, CONSULTANTS & GPS

2:15 PM – 2:55 PM: INFRASTRUCTURE

- How will the Biden Administration's Infrastructure Project impact the Industry?
- How has Inflation Altered the Infrastructure Industry?
- What kind of Hedge is Infrastructure in a Rising Inflation Environment? Any Specific Types that Might Perform Best?
- How should Investors think about the Investment Opportunity presented by Energy Transition and Sustainability?
- What's your view on how to Invest in the various Technologies Impacting Infrastructure Assets?
- What Role does Digital Infrastructure have in the Portfolio?
- If you had to choose One Infrastructure Asset or Strategy to own today, what would it be and why?
- What are the Main Climate Risks Facing Infrastructure Today?
- What Geographies Provide the Best Opportunities as we Look Forward?
- What are the Potential Headwinds to face this Asset Class in the Near Term?

MODERATOR

Iftikhar Ahmed, Partner (Infrastructure), **Aon**

SPEAKERS

David Altshuler, Executive Director, Head of North America, Global Relationship Group, **IFM Investors**

Daniel Joye, Investment Officer, Infrastructure, **Los Angeles County Employees Retirement Association**

3:00 PM – 3:40 PM: WHAT DOES THE INCREASED BLENDING OF ASSET CLASSES MEAN FOR INVESTORS?

- Do Investors have to Change their Asset Allocation Framework to Better Fit this Evolution? What does the Increased Blending of Asset Classes Mean for Investors?
- How does Benchmarking Work when Asset Classes Blend?
- How are Fees Impacted when Asset Classes Converge?

- How does a Lack of Track Record Play a Role for Those Firms just Beginning?
- Are there any Specific Asset Classes where Blending Works Exceptionally well or not well? Examples are Infrastructure with Private Equity; Hedge Funds with Venture; Private Equity and Real Estate with Credit.
- Is the Blending of Private Equity and Venture Capital only about the Technology Sector?
- Are Strategies Crossing over to the Emerging Markets at all? Or is this Evolution Mainly used in the Developed Markets?
- Has the Pandemic Altered this Evolution at all? Why or why not?
- Does Mixing Certain Asset Classes Increase Overall Volatility?
- Have Capacity Constraints been Impacted at all During this Transition?

MODERATOR

Sarah Samuels, CFA, CAIA, Partner, **NEPC**

SPEAKERS

Andrew Ierardi, Managing Director, Private Markets, **Exelon Corporation**

Kathlika Fontes, Director, **Grain Asset Management**

Jon Grabel, Chief Investment Officer, **Los Angeles County Employees Retirement Association**

3:40 PM – CLOSING REMARKS

REGISTRATION

**TO REGISTER OR RECEIVE MORE INFORMATION ABOUT
THE 2021 PENSION BRIDGE ALTERNATIVES CONFERENCE:**

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Please visit www.pensionbridge.com for additional details. Registration is not available online.

ABOUT PENSION BRIDGE

We are an innovative company offering educational conferences of the highest quality. Our objective is to provide an education to the institutional investment community while providing an impressive speaker faculty in a setting that is conducive to great networking. We help institutional money managers connect with Pension Funds and Consultants across the country in a fun, enjoyable atmosphere. Our events can act as a stepping stone to a successful financial relationship or simply help build the investment education.

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INVESTED IN TOMORROW.

PERA Board Meeting
October 28, 2021
CONSENT AGENDA

- 1. Approval of Minutes:** September 30, 2021
- 2. Reports of Committees**
 - a. Disability Review Committee Charter
- 3. Ratification of Retirements -** Benefits processed through: 9/1/2021
 - a. Normal
 - b. Deferred
 - c. Reciprocity to ERA
 - d. Non-Duty Death
 - e. Non-Duty Disability
 - f. Reciprocity to PERA
- 4. Duty & Non Duty Deaths**
 - a. Andy Gutierrez - Non-duty
 - b. Dane Authement - Non-duty
 - c. Naomi Santiago - Non-duty
 - d. Theresa Penner - Non-duty
 - e. Steven Bates - Non-duty
- 5. Affidavits for Free Military Service:**
 - a. Craig Davis - 12 months
 - b. James T. Sanchez - 4 months
- 6. Educational Conferences**
 - a. Paula Fisher - Pension Bridge Alternative 2021 Virtual Conference; November 1-3, 2021;
Registration to be paid by PERA
 - b. Loretta Naranjo Lopez - Pension Bridge Alternative 2021 Virtual Conference; November 1-3, 2021;
Registration to be paid by PERA
- 7. Setting of Meetings: November 2021**

a. Board Meeting	November 9, 2021	9:00am
b. Investment Committee	November 9, 2021	following Board Meeting
c. Disability Review Committee	November 9, 2021	2:00pm

Any person with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, please contact Trish Winter at 505-476-9305 or patriciab.winter@state.nm.us at least one week prior to the meeting, or as soon as possible. Public documents, including the agenda and minutes, can be provided in various accessible formats. Please contact Ms. Winter if a summary or other type of accessible format is needed.