

Volunteer Firefighters Retirement Fund of New Mexico

Annual Actuarial Valuation - Funding
As of June 30, 2022





October 27, 2022

The Retirement Board
Public Employees Retirement Association
33 Plaza La Prensa
Santa Fe, NM 87507

Re: Actuarial Valuation for Funding Purposes as of June 30, 2022

Members of the Board:

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Volunteer Firefighters Retirement Fund of New Mexico (Volunteer Firefighters Fund) as of June 30, 2022. This report was prepared at the request of the Board and is intended for use by the Public Employees Retirement Association (PERA) staff and those designated or approved by the Board. This report may be provided to parties other than the Volunteer Firefighters Fund only in its entirety and only with the permission of the Board.

Actuarial Valuation

The primary purposes of the actuarial valuation report are to determine the adequacy of the current State contributions, describe the current financial condition of the Volunteer Firefighters Fund, analyze changes in the condition of the Volunteer Firefighters Fund, and provide various summaries of the data.

Plan Provisions

Our actuarial valuation as of June 30, 2022 reflects the benefit and contribution provisions that were in effect as of June 30, 2022. The current plan provisions are outlined in Section E of this report.

Actuarial Assumptions and Methods

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees based on the experience investigation that covered the four-year period from July 1, 2015 through June 30, 2019. The current actuarial assumptions and methods are outlined in Section F of this report.

Data

This valuation was based upon information as of June 30, 2022, furnished by the PERA staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by PERA staff.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code and ERISA.

The signing actuaries are independent of the plan sponsor. The undersigned are Enrolled Actuaries, Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, each of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



R. Ryan Falls, FSA, EA, MAAA
Senior Consultant & Actuary



Janie Shaw, ASA, EA, MAAA
Consultant & Actuary

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

Item	2022	2021
Membership <ul style="list-style-type: none"> • Number of <ul style="list-style-type: none"> - Active members - Retirees, beneficiaries, and disabled - Inactive, vested - Inactive, nonvested - Total 	7,711 1,642 289 27 <hr style="width: 100px; margin-left: auto; margin-right: 0;"/> 9,669	7,830 1,590 296 19 <hr style="width: 100px; margin-left: auto; margin-right: 0;"/> 9,735
Assets <ul style="list-style-type: none"> • Market value (MVA) • Actuarial value (AVA) • Return on market value • Return on actuarial value 	\$ 78,966,635 \$ 81,077,910 -4.3% 6.2%	\$ 84,718,801 \$ 78,490,185 26.5% 9.1%
Actuarial Information on AVA (smoothed) <ul style="list-style-type: none"> • Normal cost \$ (Middle of Year) • Actuarial accrued liability • Unfunded actuarial accrued liability (UAAL) • Funded ratio 	\$ 2,081,826 \$ 50,211,084 \$ (30,866,826) 161.5%	\$ 1,949,671 \$ 50,150,963 \$ (28,339,222) 156.5%
Actuarially Determined Contribution (ADC) Amount	\$ 0	\$ 0
Annual Contribution from Fire Protection Fund	\$ 750,000	\$ 750,000
Actuarial Information on MVA <ul style="list-style-type: none"> • Unfunded actuarial accrued liability (UAAL) • Funded ratio 	\$ (28,755,551) 157.3%	\$ (34,567,838) 168.9%



SECTION B

DISCUSSION

Discussion

Introduction

This report presents the results of the June 30, 2022 actuarial valuation of the Volunteer Firefighters Retirement Fund of New Mexico (Volunteer Firefighters Fund).

The primary purposes of this actuarial valuation report are to determine the adequacy of the current State contributions, describe the current financial condition of the Volunteer Firefighters Fund, analyze the changes in condition of the Volunteer Firefighters Fund, and provide various summaries of the data.

All of the tables referenced in the following discussion appear in Section C of this report.

Funding Adequacy

The Actuarially Determined Contribution to satisfy the funding policy is the dollar amount necessary to fund the annual normal cost, the expected administrative expenses of the Volunteer Firefighters Fund, and fully amortize the UAAL over 25 years in constant dollar amounts. This resulting contribution amount is compared to the expected State contribution amount to assess the sufficiency of the State contribution. As the Volunteer Firefighters Fund is in a significant surplus funded position, the annual amortized amount of the surplus offsets the Volunteer Firefighters Fund's annual normal cost amount. The Actuarially Determined Contribution determined by this actuarial valuation is zero.

The State currently contributes \$750,000 annually to the Volunteer Firefighters Fund from the State's fire protection fund.

The unfunded actuarial accrued liability (UAAL) decreased from \$(28.3) million as of June 30, 2021 to \$(30.9) million as of June 30, 2022. Additionally, the funded ratio—actuarial value of assets divided by the actuarial accrued liability—increased from 156.5% to 161.5%, as of June 30, 2022. This increase in the funded ratio was primarily due to demographic gains resulting from active members accruing less service during the year than expected and significantly fewer actives retiring than expected. The funded status is one of many metrics used to show trends and develop future expectations about the health of a retirement system. The funded status measure itself is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations or assessing the need for or the amount of future contributions since it does not reflect normal cost contributions, the timing of amortization payments, or future experience other than expected.

Plan Provisions

There were no changes to plan provisions for this actuarial valuation. The current plan provisions are outlined in Section E of this report.

Actuarial Assumptions and Methods

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees based on the experience investigation that covered the four-year period from July 1, 2015 through June 30, 2019. We believe the assumptions are internally consistent and are reasonable, based on the actual experience of the Volunteer Firefighters Fund.



The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. A review of the impact of a different set of assumptions on the funded status of the Volunteer Firefighters Fund is outside the scope of this actuarial valuation.

The current actuarial assumptions and methods are outlined in Section F of this report.

System Assets

This report contains several tables that summarize key information with respect to the Volunteer Firefighters Fund assets.

The total market value of assets decreased from \$84.7 million to \$79.0 million as of June 30, 2022. Table 5 reconciles the changes in the fund during the year. Total contributions were exactly \$750,000, as expected.

Table 6 shows the development of the Actuarial Value of Assets (AVA). The current AVA method recognizes each year's gain or loss over a closed four-year period. The AVA increased from \$78.5 million to \$81.1 million, as of June 30, 2022.

When measured on a market value, the approximate investment return for the fiscal year ending June 30, 2022 was (4.3)%. When measured on an actuarial value, the net investment return was 6.2%. Table 7 shows a history of return rates. The Volunteer Firefighters Fund ten-year average market return is 7.4%.

Table 8 provides a history of the contributions paid into the Volunteer Firefighters Fund and the administrative expenses and benefit payments paid out of the Volunteer Firefighters Fund. The Volunteer Firefighters Fund paid administrative expenses and benefit payments, in excess of contributions received, of \$2.1 million (or 2.4% of assets) in fiscal year 2021 and \$2.2 million (or 2.8% of assets) in fiscal year 2022. PERA should continue to monitor this deficit as it could impact future liquidity needs.

Data

This valuation was based upon information as of June 30, 2022, furnished by PERA staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by PERA staff.

The tables in Section G show key census statistics for the various groups included in the valuation.



SECTION C

TABLES

Table 1 Development of Employer Cost

	June 30, 2022	June 30, 2021
1. Actuarial Accrued Liability for Active Members		
a. Present value of future benefits for active members	\$ 27,650,342	\$ 28,663,899
b. Less: present value of future normal costs	(10,772,604)	(11,368,747)
c. Actuarial accrued liability	\$ 16,877,738	\$ 17,295,152
2. Total Actuarial Accrued Liability for:		
a. Retirees and beneficiaries	\$ 28,583,607	\$ 28,011,888
b. Inactive members	4,749,739	4,843,923
c. Active members (Item 1c)	16,877,738	17,295,152
d. Total	\$ 50,211,084	\$ 50,150,963
3. Actuarial Value of Assets	\$ 81,077,910	\$ 78,490,185
4. Unfunded Actuarial Accrued Liability (UAAL) (Item 2d - Item 3)	\$ (30,866,826)	\$ (28,339,222)
5. Actuarially Determined Contribution (ADC) - Middle of Year		
a. Normal cost	\$ 2,021,826	\$ 1,889,671
b. Administrative expenses	60,000	60,000
c. 25-Year Amortization of UAAL	(2,615,471)	(2,402,767)
d. Total ADC Amount (Items 5a+5b+5c, NLT \$0)	\$ 0	\$ 0

Table 2
Actuarial Present Value of Future Benefits

	<u>June 30, 2022</u>	<u>June 30, 2021</u>
1. Active Members		
a. Service Retirement	\$ 22,560,923	\$ 22,949,495
b. Disability Benefits	0	0
c. Death Before Retirement	390,366	509,190
d. Termination	4,699,053	5,205,214
e. Total	<u>\$ 27,650,342</u>	<u>\$ 28,663,899</u>
2. Inactive Members		
a. Vested Terminations	\$ 4,404,384	\$ 4,596,086
b. Non-Vested Terminations	345,355	247,837
c. Total	<u>\$ 4,749,739</u>	<u>\$ 4,843,923</u>
3. Annuitants		
a. Service Retirements	\$ 27,459,948	\$ 27,024,797
b. Beneficiaries	1,123,659	987,091
d. Disability Retirements	0	0
e. Total	<u>\$ 28,583,607</u>	<u>\$ 28,011,888</u>
4. Total Actuarial Present Value of Future Benefits	<u>\$ 60,983,688</u>	<u>\$ 61,519,710</u>

Table 3

Analysis of Normal Cost

	June 30, 2022	June 30, 2021
1. Gross Normal Cost (MOY)		
a. Service Retirement	\$ 1,564,724	\$ 1,449,121
b. Disability Benefits	0	0
c. Death Before Retirement	28,172	33,556
d. Termination	428,930	406,994
e. Total	2,021,826	1,889,671
2. Administrative Expenses	60,000	60,000
3. Total Normal Cost	2,081,826	1,949,671
4. Less: Member Contribution	0	0
5. Employer Normal Cost	2,081,826	1,949,671

Table 4
Historical Summary of Active Member Data

Valuation as of June 30,	Active Members			
	Number	Percent Increase	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)
2013	6,461		43.4	3.8
2014	7,499	16.1%	43.0	3.6
2015	8,136	8.5%	42.9	3.6
2016	7,823	-3.8%	42.6	3.7
2017	7,491	-4.2%	42.6	4.0
2018	7,939	6.0%	42.1	3.8
2019	8,182	3.1%	41.9	3.7
2020	8,014	-2.1%	41.9	3.7
2021	7,830	-2.3%	42.0	3.7
2022	7,711	-1.5%	42.3	3.7

Table 5 Reconciliation of Plan Net Assets

	Year Ending	
	June 30, 2022 (1)	June 30, 2021 (2)
1. Market value of assets at beginning of year	\$ 84,718,801	\$ 68,836,980
2. Revenue for the year		
a. Contributions for the year		
i. Member Contributions	\$ 0	\$ 0
ii. Employer Contributions	0	0
iii. Contribution from Fire Protection Fund	750,000	750,000
iv. Service Purchases	0	0
v. Total	<u>\$ 750,000</u>	<u>\$ 750,000</u>
b. Net investment income	\$ (3,578,251)	\$ 17,950,012
c. Total revenue	\$ (2,828,251)	\$ 18,700,012
3. Disbursements for the year		
a. Benefit payments	\$ 2,847,231	\$ 2,757,990
b. Refunds of member contributions	0	0
c. Administrative expenses	76,684	60,201
d. Total expenditures	<u>\$ 2,923,915</u>	<u>\$ 2,818,191</u>
4. Increase in net assets (Item 2c - Item 3d)	\$ (5,752,166)	\$ 15,881,821
5. Market value of assets at end of year (Item 1 + Item 4)	\$ 78,966,635	\$ 84,718,801
6. Estimated Rate of Return on Market Value of Assets	-4.3%	26.5%

Table 6

Development of Actuarial Value of Assets

	Year Ending June 30, 2022																												
1. Actuarial value of assets at beginning of year	\$ 78,490,185																												
2. Net new investments																													
a. Contributions for the year (Table 5: Item 2a.v)	\$ 750,000																												
b. Disbursements for the year (Table 5: Item 3d)	(2,923,915)																												
c. Subtotal	(2,173,915)																												
3. Assumed investment return rate for fiscal year	7.25%																												
4. Expected return on Actuarial value	\$ 5,611,734																												
5. Actual net earnings on Market value (Table 5: Item 2b)	\$ (3,578,251)																												
6. Expected Actuarial value of assets (Item 1 + Item 2c + Item 4)	\$ 81,928,004																												
7. Excess return (Item 5 - Item 4)	\$ (9,189,985)																												
8. Development of amounts to be recognized as of June 30, 2022:																													
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Fiscal Year</th> <th style="text-align: center; border-bottom: 1px solid black;">Original Deferrals of</th> <th style="text-align: center; border-bottom: 1px solid black;">Portion</th> <th style="text-align: center; border-bottom: 1px solid black;">Recognized for this</th> </tr> <tr> <td></td> <th style="text-align: center;">(1)</th> <th style="text-align: center;">(2)</th> <th style="text-align: center;">(3) = (1) * (2)</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">2019</td> <td style="text-align: right;">\$ (669,317)</td> <td style="text-align: center;">25%</td> <td style="text-align: right;">\$ (167,329)</td> </tr> <tr> <td style="padding-left: 20px;">2020</td> <td style="text-align: right;">(6,206,995)</td> <td style="text-align: center;">25%</td> <td style="text-align: right;">(1,551,749)</td> </tr> <tr> <td style="padding-left: 20px;">2021</td> <td style="text-align: right;">12,665,918</td> <td style="text-align: center;">25%</td> <td style="text-align: right;">3,166,480</td> </tr> <tr> <td style="padding-left: 20px;">2022</td> <td style="text-align: right;">(9,189,985)</td> <td style="text-align: center;">25%</td> <td style="text-align: right;">(2,297,496)</td> </tr> <tr> <td style="padding-left: 20px;">Total</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">\$ (850,094)</td> </tr> </tbody> </table>	Fiscal Year	Original Deferrals of	Portion	Recognized for this		(1)	(2)	(3) = (1) * (2)	2019	\$ (669,317)	25%	\$ (167,329)	2020	(6,206,995)	25%	(1,551,749)	2021	12,665,918	25%	3,166,480	2022	(9,189,985)	25%	(2,297,496)	Total			\$ (850,094)	
Fiscal Year	Original Deferrals of	Portion	Recognized for this																										
	(1)	(2)	(3) = (1) * (2)																										
2019	\$ (669,317)	25%	\$ (167,329)																										
2020	(6,206,995)	25%	(1,551,749)																										
2021	12,665,918	25%	3,166,480																										
2022	(9,189,985)	25%	(2,297,496)																										
Total			\$ (850,094)																										
9. Actuarial value of assets as of June 30, 2022 (Item 6 + Item 8, Column 3)	\$ 81,077,910																												
10. Market value of assets as of June 30, 2022 (Table 5: Item 5)	\$ 78,966,635																												
11. Ratio of actuarial value to market value	102.7%																												



Table 7 History of Investment Return Rates

Year Ending June 30 of	Market	Actuarial
(1)	(2)	(3)
2011	22.4%	-0.7%
2012	-0.4%	1.0%
2013	12.8%	10.6%
2014	17.6%	12.6%
2015	1.8%	7.8%
2016	0.3%	7.2%
2017	11.1%	6.9%
2018	6.9%	4.9%
2019	6.3%	6.0%
2020	-1.5%	5.4%
2021	26.5%	9.1%
2022	-4.3%	6.2%
Average Returns		
Last Five Years:	6.3%	6.3%
Last Ten Years:	7.4%	7.6%

Table 8
History of Cash Flow

Year Ending June 30,	Distributions and Expenditures				External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
	Contributions	Benefit Payments and Refunds	Administrative Expenses	Total			
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)
2013	\$ 750.0	\$ (968.7)	\$ 0.0	\$ (968.7)	\$ (218.7)	\$ 53,312	-0.4%
2014	750.0	(1,418.9)	(44.3)	(1,463.2)	(713.2)	61,923	-1.2%
2015	750.0	(1,633.4)	(42.6)	(1,676.0)	(926.0)	62,103	-1.5%
2016	750.0	(1,835.3)	(46.9)	(1,882.2)	(1,132.2)	61,050	-1.9%
2017	750.0	(2,030.8)	(51.8)	(2,082.6)	(1,332.6)	66,401	-2.0%
2018	750.0	(2,318.5)	(57.6)	(2,376.1)	(1,626.1)	69,287	-2.3%
2019	750.0	(2,456.9)	(62.9)	(2,519.8)	(1,769.8)	71,837	-2.5%
2020	750.0	(2,625.8)	(67.2)	(2,693.0)	(1,943.0)	68,837	-2.8%
2021	750.0	(2,758.0)	(60.2)	(2,818.2)	(2,068.2)	84,719	-2.4%
2022	750.0	(2,847.2)	(76.7)	(2,923.9)	(2,173.9)	78,967	-2.8%

Dollar amounts in thousands

Column (7) = Column (2) + Column (6).



Table 9

Total Experience Gain or Loss

Item (1)	Year Ending	
	June 30, 2022 (2)	June 30, 2021 (3)
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ (28,339,222)	\$ (23,576,703)
2. Normal cost (incl. admin) for the previous year	\$ 1,966,355	\$ 1,987,314
3. Less: expected contributions for the year	\$ (750,000)	\$ (750,000)
4. Interest at 7.25%		
a. On UAAL	\$ (2,054,594)	\$ (1,709,311)
b. On normal cost	71,280	72,040
c. On contributions	(27,188)	(27,188)
d. Total	\$ (2,010,502)	\$ (1,664,459)
5. Expected UAAL (Sum of Items 1 - 4)	\$ (29,133,369)	\$ (24,003,848)
6. Actual UAAL	\$ (30,866,826)	\$ (28,339,222)
7. Total gain (loss) for the year (Item 5 - Item 6)	\$ 1,733,457	\$ 4,335,374
B. Source of gains and (losses)		
8. Contribution (Shortfall)/Surplus with interest	\$ 0	\$ 0
9. Asset gain (loss) for the year	\$ (850,094)	\$ 1,357,913
10. Liability experience gain (loss) for the year	\$ 2,583,551	\$ 2,977,461
11. Assumption change	\$ 0	\$ 0
12. Benefit change	\$ 0	\$ 0
13. Total	\$ 1,733,457	\$ 4,335,374

Table 10
Solvency Test

Year Ending June 30,	Actuarial Liability For				Cumulative portion of AAL covered				
	Total Active Member Contributions	Retirees, Beneficiaries and Inactive Members	Active Members (Employer Financed)	Total Actuarial Liability (AAL)	Actuarial Value of Assets	Total Active Member Contributions	Retirees, Beneficiaries and Inactive Members	Active Members (Employer Financed)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
2013	\$ 0	\$ 23,246,567	\$ 14,519,733	\$ 37,766,300	\$ 52,179,180	N/A	100%	100%	
2014	0	25,218,190	16,297,916	41,516,106	57,997,323	N/A	100%	100%	
2015	0	26,280,594	17,635,798	43,916,392	61,575,304	N/A	100%	100%	
2016	0	27,259,993	17,996,285	45,256,278	64,899,802	N/A	100%	100%	
2017	0	28,060,938	18,327,515	46,388,453	67,985,320	N/A	100%	100%	
2018	0	30,285,764	18,950,008	49,235,772	69,674,334	N/A	100%	100%	
2019	0	31,110,078	19,408,782	50,518,860	72,011,279	N/A	100%	100%	
2020	0	32,829,521	17,510,145	50,339,666	73,916,369	N/A	100%	100%	
2021	0	32,855,811	17,295,152	50,150,963	78,490,185	N/A	100%	100%	
2022	0	33,333,346	16,877,738	50,211,084	81,077,910	N/A	100%	100%	



SECTION D

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY AND ACTUARIALLY DETERMINED CONTRIBUTION

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

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

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

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

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

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

The ADC developed on Table 1 may be considered as a minimum contribution that complies with the Board's funding policy and State statute. The timely receipt of the ADC is critical to support the financial health of the System. Users of this report should be aware that contributions made consistent with the ADC do not necessarily guarantee benefit security.



Plan Maturity Measures

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

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Ratio of actives to retirees and beneficiaries	4.7	4.9	5.2	5.7	5.9	6.2	7.0	8.1	8.4	8.5
Ratio of net cash flow to market value of assets	-2.8%	-2.4%	-2.8%	-2.5%	-2.3%	-2.0%	-1.9%	-1.5%	-1.2%	-0.4%
Duration of the actuarial accrued liability*	9.2	9.3								

*Duration measure not available before 2021

Ratio of Actives to Retirees and Beneficiaries

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

Ratio of Net Cash Flow to Market Value of Assets

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

Duration of Actuarial Accrued Liability

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the actuarial accrued liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Additional Risk Assessment

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

SECTION E

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions for the Volunteer Firefighters Retirement Fund of New Mexico

Membership

Includes any volunteer nonsalaried firefighter who is listed as an active member on the rolls of a fire department and whose first year of service credit was accumulated during or after the year the member attained the age of sixteen. In accordance with applicable statutes, this valuation excludes any member for whom qualifying documentation has not been provided to the retirement system for five consecutive years.

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



SECTION F

ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Assumptions and Methods

The assumptions and methods applied in this actuarial valuation were adopted by the Board of Trustees based on the experience investigation that covered the four-year period from July 1, 2015 through June 30, 2019

I. Valuation Date

The valuation date is June 30 of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation is used to determine the adequacy of the State contribution and to describe the current financial condition of the Volunteer Firefighters Retirement Fund of New Mexico.

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the first step is to determine the contribution (level as a level dollar amount) required to provide the benefits to each member, or the normal cost. The normal cost consists of two pieces: (i) the member's contribution (if any), and (ii) the remaining portion of the normal cost which is the employer's normal cost. The total normal cost is based on the benefits payable to each individual active member.

The Unfunded Actuarial Accrued Liability (UAAL) is the liability for future benefits which is in excess of (i) the actuarial value of assets, and (ii) the present value of future normal costs. The employer contribution provided in excess of the employer normal cost is applied to amortize the UAAL (if any).

The funding period is calculated as the number of years required to fully amortize the UAAL, assuming that: (a) future market earnings, net of investment-related expenses, will equal 7.25% per year, (b) there will be no liability gains/losses or changes in assumptions, (c) the other active members who leave employment will be replaced by new entrants each year, and (d) employer contributions will remain \$750,000.

The Entry Age actuarial cost method is an "immediate gain" method (i.e., experience gains and losses are separately identified as part of the UAAL). However, they are amortized over the same period applied to all other components of the UAAL.

III. Actuarial Value of Assets

The actuarial value of assets is derived as follows: prior year actuarial value of assets is increased by contributions and expected income and reduced by refunds, benefit payments and expenses. To this amount, 25% of the difference between the expected investment income of the actuarial value and actual investment income on the market value for each of the previous four years is added. The returns are computed net of investment-related expenses.

IV. Actuarial Assumptions

Investment Return: 7.25% per year, net of investment-related expenses (composed of an assumed 2.50% inflation rate and a 4.75% real rate of return)

Administrative Expenses: \$60,000 which is included in the calculation of the actuarial determined contribution amount.

Decrement Timing: All decrements – mortality, service retirement, disability retirement, and termination of employment for reasons other than death or retirement – are assumed to occur at the middle of the valuation year.

Mortality Decrements:

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		

Rates of Retirement from active membership were as follows:

Ages	Percent of Active Members Retiring Within the 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

Rates of Separation from Active Membership were as follows:

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year
ALL	0	12.00 %
	1	11.00
	2	10.00
	3	8.00
	4	6.00
25	5 & Over	4.00
30		4.00
35		4.00
40		4.00
45		4.00
50		5.00
55		5.00
60		6.00

Marriage Assumption: All members are assumed to be married for purposes of death-in-service benefits. At retirement, 90% of members are assumed to be married for purposes of valuing death after retirement benefits.

Beneficiary Characteristics: Males are assumed to be three years older than females.

Form of Payment: 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.

Average Entry Age: Age 38.3 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.

Census Data and Assets

- The valuation was based on members of the Volunteer Firefighters Retirement Fund of New Mexico as of June 30, 2022 and does not take into account future members, with the exception of determining the funding period.
- All census data was supplied by PERA and was subject to reasonable consistency checks.
- There were data elements that were modified for some members as part of the valuation in order to make the data complete. However, the number of missing data items was immaterial.
- Asset data was supplied by the PERA.

Other Actuarial Valuation Procedures

- No provision was made in this actuarial valuation for the limitations of Internal Revenue Code Sections 415 or 401(a)17.

Actuarial Model

This report was prepared using ProVal's valuation model, a software product of Winklevoss Technologies. We are relying on the ProVal model. We performed tests of the ProVal model with this assignment and made a reasonable attempt to understand the developer's intended purpose of, general operation of, major sensitivities and dependencies within, and key strengths and limitations of the ProVal model. In our professional judgment, the ProVal valuation model has the capability to provide results that are consistent with the purposes of the valuation.

SECTION G

DETAILED SUMMARIES OF MEMBERSHIP DATA

Table A

Summary of Membership Data

	<u>June 30, 2022</u>	<u>June 30, 2021</u>
<u>Actives</u>		
a. Number	7,711	7,830
b. Average age	42.3	42.0
c. Average service	3.7	3.7
<u>Vested inactive members</u>		
a. Number	289	296
b. Average Age	61.3	61.5
c. Total annualized deferred monthly benefits	\$ 439,500	\$ 451,500
d. Average annualized deferred monthly benefit	\$ 1,521	\$ 1,525
<u>Nonvested inactive members</u>		
a. Number	27	19
<u>Service retirees*</u>		
a. Number	1,502	1,468
b. Average Age	70.5	70.0
c. Total annualized monthly benefits	\$ 2,742,000	\$ 2,673,000
d. Average annualized monthly benefit	\$ 1,826	\$ 1,821
<u>Disabled retirees</u>		
a. Number	0	0
b. Average Age	0.0	0.0
c. Total annualized monthly benefits	\$ 0	\$ 0
d. Average annualized monthly benefit	\$ 0	\$ 0
<u>Beneficiaries</u>		
a. Number	140	122
b. Average Age	75.7	74.8
c. Total annualized monthly benefits	\$ 144,998	\$ 123,798
d. Average annualized monthly benefit	\$ 1,036	\$ 1,015

*Includes 1 co-payee



Table B
Active Members
Distribution by Age and Service

Nearest Age	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+	
Under 30	1,820	137	7					1,964
30 to 34	861	174	47	5				1,087
35 to 39	648	168	52	20	2			890
40 to 44	454	168	72	25	11			730
45 to 49	363	123	74	33	15	10		618
50 to 54	295	114	69	37	25	13	2	555
55 to 59	276	115	76	38	20	6	4	535
60 & Over	750	345	133	57	27	16	4	1,332
Total	5,467	1,344	530	215	100	45	10	7,711

Table C
Number of Annual Retirement Allowances of Benefit Recipients

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
<u>Normal Retirement Pensions</u>			
Two Life 66 2/3% Survivor Pension	1,501	\$ 2,741,250	\$ 1,826
Single Life Pension	141	\$ 145,748	\$ 1,034
Total Normal Retirement Pensions	1,642	\$ 2,886,998	\$ 1,758
Total Pensions Being Paid	1,642	\$ 2,886,998	\$ 1,758

Table D

Schedule of Retirants Added to and Removed from Rolls

Number Added	Increase Annual Allowance	Number Removed	Decrease Annual Allowance	Net Change Annual Allowance	Total Retirees & Beneficiaries	Annual Allowance	Increase in Annual Allowance	Average Annual Allowance	% Change in Average Allowance
74	\$ 134,000	22	\$ 43,800	\$ 90,200	1,642	\$ 2,886,998	3.23%	\$ 1,758	-0.04%

Table E

Distribution of Retirees by Years of Service at Retirement

Division	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*	\$ 125	\$ 125	\$ 125	\$ 125	\$ 129	\$ 247	\$ 248	\$ 153	
Number of Retirees*	4	4	826	232	71	274	54	1,465	

*Does not include 36 retirees with missing years of service at retirement

Table F

Distribution of Recent Retiree Ages at Retirement

Division	2021-22 Retirees	All Current Retirees
Number	71	1,501
Average Monthly Benefit at Retirement	\$ 151	\$ 152
Average Age at Retirement	64.34	61.54



SECTION H

GLOSSARY

Glossary

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or Funding Method: A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or Actuarial Loss: A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

- a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.),
- b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and
- c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB.

Actuarial Value of Assets or Valuation Assets: The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC): A calculated contribution for a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the calculated contribution has a normal cost payment and an amortization payment.

Closed Amortization Period: A specific number of years that is counted down by one each year and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: An employer-sponsored retirement benefit that provides workers, upon attainment of designated age and service thresholds, with a monthly benefit based on the employee's salary and length of service. The value of a benefit from a defined benefit plan is generally not affected by the return on the assets that are invested to fund the benefit.



Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.

Funding Period or Amortization Period: The term "Funding Period" is used in two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date

