



December 6, 2022

Ms. Amber McNeill
Plan Administrator
Resource Centers, LLC
4100 Center Pointe Drive, Suite 108
Fort Myers, Florida 33916

Re: Sarasota Firefighters' Health Insurance Trust Fund

Dear Amber:

Enclosed is the actuarial valuation report of the revenues and potential benefits payable by the Sarasota Firefighters' Health Insurance Trust Fund.

Please contact us with any questions or comments.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

A handwritten signature in black ink that reads "Brad Lee Armstrong". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Brad Lee Armstrong, ASA, EA, FCA, MAAA

BLA:bd
Enclosures

cc: Philip Vets, Chairman
Pedro Herrera, Esq.
Walt Menzel, CPA

Actuarial Valuation Report

Sarasota Firefighters' Health Insurance Trust Fund

To: Board of Trustees
Sarasota Firefighters' Health Insurance Trust Fund

From: Brad Lee Armstrong, ASA, EA, FCA, MAAA, Jeffrey T. Tebeau, FSA, EA, FCA, MAAA, and Kevin T. Noelke, ASA, FCA, MAAA, Gabriel, Roeder, Smith & Company

Date: December 6, 2022

Subject: **Valuation of Health Insurance Trust Fund**

The results of the June 30, 2022 actuarial valuation of the Sarasota Firefighters' Health Insurance Trust Fund are presented in this report. The purpose of the annual valuation is to measure the potential benefits payable by the Health Insurance Trust. The results of the valuation may not be applicable for other purposes. This report was prepared at the request of the Board and is intended for use by the Plan and those designated or approved by the Board. It may be provided to parties other than the Plan only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The benefit range in this report is determined using the actuarial assumptions and methods disclosed on pages 13-16. This report includes risk metrics on pages 7-8 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

The valuation was based upon information, furnished by the Fund Administrator, concerning Fund benefits, financial transactions, and individual members, terminated members, retirees and beneficiaries. Data was checked for year-to-year consistency, but was not audited by us. GRS is not responsible for the accuracy or completeness of the information provided.

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

This report has been prepared by actuaries who have substantial experience valuing public employee post-retirement benefit plans. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Fund as of the valuation date. We believe the actuarial assumptions used for the valuation are reasonable.

Brad Lee Armstrong, Jeffrey T. Tebeau and Kevin T. Noelke are independent of the plan sponsor and are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.



Actuarial Valuation Report

Sarasota Firefighters' Health Insurance Trust Fund

The assumed annual net rate of investment return was 6.75% and the actuarial funding method was entry-age normal cost. The Funding Target for the purpose of determining the top end of the Benefit Range was amortized over a closed period of 25 years. Each subsequent year's annual change in the Funding Target was amortized over a separate closed period of 25 years beginning with the June 30, 2015 actuarial valuation.

Valuation Date June 30	Actives				Deferred		Retired	
	Number	Annual Payroll*	Average		Number	Average Age	Number	Average Age
			Age	Service				
2018	500	\$ 33,795,840	39.0 yrs.	10.4 yrs.	8	44.6 yrs.	177	60.6 yrs.
2019	517	35,641,732	38.9	10.5	4	49.8	190	61.3
2020	507	35,648,346	39.3	11.0	9	51.7	199	61.9
2021	496	34,874,911	39.7	11.6	12	50.2	206	62.4
2022	498	39,117,462	39.7	11.8	12	50.8	211	63.0

* Active members times the base pay of a Journeyman Firefighter/Medic (Top Step).

The accumulated unclaimed retiree benefits as of the valuation date were \$1,421,555. This amount is excluded from the net assets available for benefits shown elsewhere in this report.

Non-Investment Cash Flows (in Thousands)

FYE	2019	2020	2021	2022
Member Contributions	\$ 30	\$ 29	\$ 45	\$ 48
County Contributions	2,097	2,101	2,101	2,112
Benefits Paid	1,661	1,744	1,820	1,918
Admin. Expenses Paid	111	99	90	93
	\$ 355	\$ 287	\$ 236	\$ 149

As the Plan continues to mature, the non-investment cash flows will become negative; most likely in the next five years. This is expected in the financial operation of this type of plan and funding arrangement. It does not, by itself, indicate signs of financial instability, but is a metric that the Plan must continue to measure and monitor.

Fundamental Fiscal Operation of Trust

The fundamental fiscal operation of the Trust Fund is governed by the following relationship:

$$B \neq C + I - E$$

B enefits paid to the group of participants

..... *cannot exceed the sum of*

C ontributions received on behalf of the group

..... *plus*

I ntestment income on contributions not yet used
for payment of benefits

..... *minus*

E xpenses of operating the Trust Fund

Contributions to the Trust Fund by the County are 6% of the base pay of a Journeyman Firefighter/Medic at Top Step (\$78,549 annually as of October 1, 2022) for each participant during 2023. Dollar revenues to the Trust Fund will change from year-to-year as the base pay of a Journeyman Firefighter/Medic (Top Step) changes and as the number of participants change.

The key issue for the Trust Fund is that this is a *defined contribution plan* where the contributions going in are contractually agreed upon. *The benefits going out are not defined, are subject to a variety of factors and may go up or down.* However, one factor that does not directly affect or jeopardize the Trust Fund's ability to pay benefits is medical inflation. Medical inflation will only affect the amount of the premiums (and other health care costs) outside the Trust Fund that the benefits from the Trust Fund can cover.

Given the direct relationship between revenue and the base pay level of a Journeyman Firefighter/Medic, it is reasonable, if a decline in the number of active participants is not anticipated, to express the potential benefit level as a percent of the base pay of a Journeyman Firefighter/Medic (Top Step). The dollar benefit per month would then change each time base pay changes. The alternative is to express the potential benefit as a flat number of dollars per month.

Actuarial Valuation Process

An actuarial valuation is the mathematical process by which the potential benefit level of the Trust Fund is determined.

The flow of activity constituting the valuation may be summarized as follows:

- A. **Covered Person Data**, furnished by the Fund Administrator including:
 - Retired participants and beneficiaries now receiving benefits
 - Former participants with vested benefits not yet payable
 - Active participants

- B. + **Asset Data** (cash & investments), furnished by the Fund Auditor

- C. + **Fund Description Data**, furnished by the Fund Chairman

- D. + **Assumptions about various future activities of the fund** (risk elements)

- E. + **The Actuarial Cost Method** for allocating costs to time periods

- F. + **Mathematically combining the Data, the Assumptions, and the Cost Method**

- G. = Determination of:

Potential Benefit Level Supportable by Current Contribution Rate

Items A, B and C constitute the current "knowns" about the Trust Fund. The vast majority of Trust Fund activity, which will result in benefit payments, has yet to occur. Accordingly, certain assumptions must be made about Trust Fund future activities. These assumptions (Item D) may be classified as demographic or fiscal. Demographic assumptions include future mortality rates, disability rates, rates of pre-retirement withdrawal from employment, and retirement ages. Fiscal assumptions consist of future salary increases and rates of investment return.

Results of the Valuation

The results of the valuation indicate that the current contribution rate of 6% of the base pay of a Journeyman Firefighter/Medic at Top Step will support a potential benefit rate of **12.00%**, the original objective established by the Board during the 1990s, up to an actuarially determined benefit rate of **13.65%** of the base pay of a Journeyman Firefighter/Medic (Top Step). This translates, in 2023 dollars, to an estimated 2023 monthly benefit per retired participant of \$785 to \$893 (\$78,549 times benefit rate divided by 12). The actuarially determined benefit rate has no margin for future adverse experience.

While a medical cost trend factor in excess of 10.00% was not unusual over the decade of the 1980s, the 1990s, the 2000s, the 2010s, and the early 2020s have experienced milder increases in health inflation. Individual insurance costs can and do vary in very unpredictable ways year over year due to increased utilization of new technologies and treatments, changing premiums, changing deductibles, and changing copays. Medical inflation and related costs tend to be higher than price inflation, although with approximately a one year lag. So we expect recent price inflation and political factors currently operating to cause the future medical cost trend factor to return to the area of 10.00% annually for the next few years. This will affect the members' out-of-pocket costs for health insurance or the type and amount of coverage, but it is external to the operation of the Trust Fund and does not infringe on the ongoing ability of the Trust to provide benefits.

Actual experience is likely to vary significantly from the assumptions on a year-to-year basis. Over the longer term (10 plus years) the likelihood of actual experience being close to assumed experience is much greater. **The 12.00% - 13.65% benefit range is lower than the 12.00% - 14.35% projected in the last valuation, however due to the increase in the Top Step pay it produces a higher benefit at the top of the range.**

The following led to this year's results:

- Retirements were less than assumed (favorable);
- Retiree deaths were greater than assumed (favorable);
- *Recognized* investment return was less than assumed (unfavorable);
- Administrative expenses were less than assumed (favorable);
- Active group size increased slightly (favorable);
- Pay increased more than expected. The Top Step pay rate increased from \$28.17/hour as of 10/1/2020 to \$29.00/hour as of 10/1/2021 (ratification on 3/8/2022) and to \$31.47/hour as of 10/1/2022 (ratification on 10/11/2022) based on 48 hours/week, i.e., 2,496 hours/year. This means the County's contributions will be greater without a commensurate requirement to increase the benefit level (favorable);
- The assumed investment rate of return was lowered from 7.00% to 6.75% (conservative).

Overall, the results were favorable on the basis of the current benefit level.



Results of the Valuation

The following list identifies some future events, which could lead to a reduced potential dollar benefit when compared to a projected benefit increasing at 2.60% per year.

- Investment earnings, net of expenses, averaging less than 6.75% annually.
- Increases in the pay of a Journeyman Firefighter/Medic (Top Step), which **average** less than 2.00% annually.
- An absence of benefit forfeitures by terminated Firefighters; i.e., they all elect to make the 6.00% contribution following termination.
- An increased incidence of duty disability (unlikely given the FRS approval process).
- A permanent decline in active group size (not anticipated).
- Lower rates of separation than expected other than duty disability.
- Increases in life expectancies.

Allocation of Resources as of June 30, 2022	
County Contributions	6.00 %
Deferred Vested Contributions	0.12
Investment Return and Forfeitures	12.12
Administrative Expenses	(0.40)
Amortization of Funding Target	<u>(4.19)</u>
Top End Percentage Benefit Range	13.65

Development of Top End Benefit Funding Target as of June 30, 2022	
Actives	\$ 29,326,841
Retired	29,676,870
Deferred Vested	<u>1,716,001</u>
	60,719,711
Funding Value of Assets*	<u>(41,547,842)</u>
Funding Target	\$ 19,171,869

* *The Funding Value of Assets as shown on page 12 minus the expected benefits payable to additional beneficiaries of deceased retirees.*

Risk Measures - Risks Associated with Measuring the Funding Target and Benefit Range

The determination of the funding target and the benefit range 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 funding target and the benefit range 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/funding target Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the funding target 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; and
4. **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed.
5. **Other demographic risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in the actual future funding target and contributions differing from expected.

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

Risk Measures

(\$ Amounts in Thousands)

Actuarial Valuation Date (6/30)	(1) Market Value of Assets (MVA)	(2) Funding Value of Assets (FVA) #	(3) Top End Benefit Liability (TEBL)	(4) Funding Target (3) - (2)	(5) FVA Funded Ratio (2) / (3)	(6) MVA Funded Ratio (1) / (3)	(7) Retiree Liabilities (RetLiab)	(8) RetLiab. / TEBL (7)/(3)	(9) Non-Invest. Cash Flow (NICF)	(10) NICF / Assets (9)/(2)	(11) Market Rate of Return	(12) 5-Year Trailing Average
2018	\$ 30,956	\$ 31,333	\$ 51,201	\$ 19,868	61.2%	60.5%	\$ 25,871	50.5%	\$ 334	1.1%	7.9%	N/A
2019	33,192	33,437	52,642	19,205	63.5%	63.1%	26,922	51.1%	355	1.1%	5.8%	N/A
2020 *	34,364	35,482	55,678	20,196	63.7%	61.7%	27,609	49.6%	286	0.8%	2.7%	5.1%
2021	43,223	39,267	58,893	19,626	66.7%	73.4%	29,143	49.5%	236	0.6%	25.0%	10.2%
2022 *	38,541	41,548	60,720	19,172	68.4%	63.5%	29,677	48.9%	150	0.4%	(11.2)%	5.4%

* Revised actuarial assumptions.

The Funding Value of Assets as shown on page 12 minus the expected benefits payable to additional beneficiaries of deceased retirees.

(5) and (6). In a defined contribution plan, the funded ratio is a measure of the extent to which the current benefit level depends on future contribution and investment income.

(8). The ratio of retiree liabilities to total top end benefit liability gives an indication of the maturity of the system. As the ratio increases, cash flow needs increase, and the liquidity needs of the portfolio change. A ratio on the order of 50% indicates a maturing system.

(10). Positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means benefits and expenses exceed contributions, and existing funds may be used to make 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.

(11) and (12). Investment return is probably the largest single risk that most systems face. The year-by-year return and the five-year geometric average both give an indication of the reasonableness of the system's assumed return. Of course, past performance is not a guarantee of future results. Market rate shown is based on actuarial estimation method and will differ modestly from figures reported by the investment consultant.

Summary of Principal Benefit Conditions

Normal Retirement. Requires satisfaction of one of the following age and service requirements:

- Age 55 with 10 or more years of employment (with Sarasota County).
- Age 52 and at least 25 years of employment which can include up to four years of military service, as defined by the Florida Retirement System.
- Any age with 25 or more years of continuous employment (with Sarasota County).
- Any age with 30 or more years of employment which can include up to four years of military service, as defined by the Florida Retirement System.

Form of Payment. Paid over the life of the member only, unless the member elects an actuarially reduced 10-year certain and life benefit at retirement. The benefit reverts back to the straight-life amount after the 10-year certain period expires.

Disability Retirement. Requires In-Line-of-Duty disability retirement from FRS.

Death Benefits. Refund of accumulated participant account balance, if any, for retired. Beneficiaries of deceased active members with 10 or more years of service have the option to continue paying member contributions until the date in which the deceased active member would have attained normal retirement eligibility had the member remained employed. The beneficiary would then receive an actuarially reduced survivor's benefit for 10 years based on the then current and future benefit levels. In the case of previously deceased active members who had 10 or more years of service upon death, the actuarially reduced survivor's benefit will be reduced for both the 10-year guarantee and the missed member contributions to age 55.

Other Termination. Requires 10 years of employment (with Sarasota County) for vested termination. Terminated participants (including non-duty disability) must contribute to Trust Fund (6% of Base Pay of Journeyman Firefighter/Medic, Top Step) until eligible for normal retirement.

County Contributions. 6% of the Base Pay of a Journeyman Firefighter/Medic at Top Step.



Historical Benefit Ranges and Valuation Assets

Percentage Contribution Rate	Valuation Date	Percentage Benefit Range	Dollar Benefit Range	Dollar Benefit Level	Effective Date	
					Contribution	Benefit
4% 6%	06/30/1994	7.5%	n/c	\$201	7/1/1993	n/a
	12/31/1999	12%	n/c	\$388	7/1/1999	n/a
	-	-	-	\$423		07/01/2000
	12/31/2001	12% - 14.41%	\$436 - \$524	\$500		10/01/2000
	06/30/2003	12% - 14.35%	\$489 - \$585	\$550		01/01/2002
	06/30/2004	12% - 14.13%	\$514 - \$605	\$575		01/01/2004
	06/30/2005	12% - 14.57%	\$539 - \$655	\$610		01/01/2005
	06/30/2006	12% - 14.42%	\$572 - \$687	\$660		01/01/2006
	06/30/2007	12% - 14.21%	\$600 - \$711	\$690		01/01/2007
	06/30/2008	12% - 13.93%	\$600 - \$697	\$690		01/01/2008
	06/30/2009	12% - 13.72%	\$618 - \$707	\$701		01/01/2009
	06/30/2010	12% - 13.80%	\$637 - \$732	\$705		01/01/2010
	06/30/2011	12% - 13.97%	\$656 - \$764	\$719		01/01/2011
	06/30/2012	12% - 14.02%	\$637 - \$744	\$733		01/01/2012
	06/30/2013	12% - 14.46%	\$637 - \$768	\$740		01/01/2013
	06/30/2014	12% - 14.45%	\$637 - \$767	\$742		01/01/2014
	06/30/2015	12% - 14.34%	\$637 - \$761	\$742		01/01/2015
	06/30/2016	12% - 14.35%	\$676 - \$808	\$745		01/01/2016
	06/30/2017	12% - 14.34%	\$676 - \$808	\$760		01/01/2017
	06/30/2018	12% - 14.48%	\$676 - \$816	\$760		01/01/2018
	06/30/2019	12% - 14.00%	\$689 - \$804	\$763		01/01/2019
	06/30/2020	12% - 14.25%	\$703 - \$835	\$780		01/01/2020
	06/30/2021	12% - 14.35%	\$703 - \$841	\$795		01/01/2021
	06/30/2022	12% - 13.65%	\$785 - \$893	\$840*		01/01/2022

* This was determined by the Board at the January 25, 2023 meeting.

Net Assets Available for Benefits. Reported assets were \$38,540,521 at market value.

	2022
Cash & Equivalents	\$ 4,967,360
Equities	26,188,343
Bonds	8,789,082
Receivables	17,291
Unclaimed Benefits	(1,421,555)
Total Assets	\$ 38,540,521



Summary of Data Used for Valuation

Benefit and Deferred Recipients.

Attained Age	Age & Service Retirants and Beneficiaries		Deferred to age 55	
	No.	Annual Benefits	No.	Annual Benefits
35 - 39	2	\$ 19,080		
40 - 44	1	9,540	2	\$ 19,080
45 - 49	2	19,023	3	28,620
50 - 54	11	104,491	7	66,780
55 - 59	59	561,218		
60 - 64	67	635,518		
65 - 69	30	284,087		
70+	39	372,009		
Totals	211	\$2,004,966	12	\$114,480

Active and DROP Participants. The attained age and service distribution of actively employed members was as follows:

Attained Age	Years of Service to Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
20-24	14							14
25-29	36	17						53
30-34	26	45	8					79
35-39	9	43	45	18				115
40-44	4	15	26	41	11			97
45-49		3	17	20	13	4		57
50-54	1	2	9	24	16	5		57
55-59			4	8	7	2		21
60	1				1		1	3
62						1		1
63				1				1
Totals	91	125	109	112	48	12	1	498

Group Average:
 Age: 39.7 years
 Service: 11.8 years

Development of Funding Value of Assets

Year Ended June 30:	2021	2022	2023	2024	2025	2026
A. Funding Value Beginning of Year	\$35,539,586	\$39,324,920				
B. Market Value End of Year	43,222,910	38,540,521				
C. Market Value Beginning of Year	34,363,731	43,222,910				
D. Non-Investment Net Cash Flow	236,054	150,168				
D1. Beginning of Year Audit Adjustment	-	-				
E. Investment Income						
E1. Assumed Investment Return %	7.00%	7.00%	6.75%			
E2. Market Total: B - C - D	8,623,125	(4,832,557)				
E3. Amount for Immediate Recognition	2,496,033	2,758,000				
E4. Amount for Phased-In Recognition: E2-E3	6,127,092	(7,590,557)				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.2 x E4	1,225,418	(1,518,111)				
F2. First Prior Year	(293,829)	1,225,418	\$(1,518,111)			
F3. Second Prior Year	(81,519)	(293,829)	1,225,418	\$(1,518,111)		
F4. Third Prior Year	40,843	(81,519)	(293,829)	1,225,418	\$(1,518,111)	
F5. Fourth Prior Year	162,334	40,844	(81,520)	(293,831)	1,225,420	\$(1,518,113)
F6. Total Recognized Investment Gain/Loss	1,053,247	(627,197)	(668,042)	(586,524)	(292,691)	(1,518,113)
G. Preliminary Funding Value End of Year: A + D + D1 + E3 + F6	39,324,920	41,605,891				
G1. 120% of Market Value End of Year	51,867,492	46,248,625				
G2. 80% of Market Value End of Year	34,578,328	30,832,417				
G3. Funding Value End of Year: (G, but not greater than G1, or less than G2)	39,324,920	41,605,891				
H. Difference between Market & Funding Value: B - G3	3,897,990	(3,065,370)				
I. Recognized Rate of Return	9.95%	5.41%				
J. Market Rate of Return	25.01%	(11.16)%				
K. Ratio of Funding Value to Market Value	90.98%	107.95%				

The Funding Value of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased-in over an open five-year period beginning in 2013. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is unbiased with respect to Market Value; at any time it may be either greater or less than Market Value.

Assumptions Underlying Valuation

The actuarial assumptions regarding the INFLATION rate, REAL INVESTMENT RETURN rate, and PAY INCREASE rates are used, in combination with the other estimates, to: (i) determine the present value of amounts expected to be paid in the future; and (ii) establish a benefit level which is expected to remain relatively level as a percent of Top Step base pay. All actuarial assumptions are based on future expectations, not market measures.

The actuarial assumptions are adopted by the Board of Trustees after consultation with the actuary. In general, the actuarial assumptions were based on plan experience, as well as experience of the City Pension Fund. In addition, the mortality tables also reflect national trends. The reasonableness of the economic assumptions was based upon capital market expectations provided by various investment consultants and other sources such as the Social Security Trustees report. All actuarial assumptions are based on future expectations, not market measures.

Net Investment Return Rate. 6.75% per annum, compounded annually (net of investment expenses).

Inflation Rate. 2.00% per annum, compounded annually. This is the rate at which growth in the supply of money and credit is estimated to exceed growth in the supply of goods and services. It may be thought of as the rate of depreciation of the purchasing power of the dollar. There are a number of indices for measuring the inflation rate. The recent inflation rate as measured by the Consumer Price Index has been:

	Year Ended June 30					Average
	2022	2021	2020	2019	2018	for Period
Actual	9.1%	5.4%	0.6%	1.6%	2.9%	3.9%

Real Investment Return Rate. 5.00% per annum, compounded annually (net of expenses). This is the rate of return estimated to be produced by investing a pool of assets in an inflation-free environment.

Pay Increases. The base pay of a Journeyman Firefighter at Top Step was assumed to increase 2% annually.

Range of Potential Benefit Rates. 12% of Journeyman Firefighter Top Step pay up to the actuarially determined rate with no contingencies for unfavorable experience. Range will be reviewed if the actuarially determined rate falls below 12%.

Administrative Expenses. 0.4% of Top Step payroll (40 basis points) are assumed to be distributed annually to cover administrative expenses.

Death Benefits Owed to Beneficiaries. Account balances of \$37,826 and \$20,223 were subtracted from the Funding Value of Assets to account for death benefits owed to beneficiaries.

Assumptions Underlying Valuation

Mortality Table. For healthy participants during employment, PUB-2010 Headcount Weighted Safety Employee Female Mortality Table and Safety Below Median Employee Male Mortality Table, both set-forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For healthy participants post-employment, PUB-2010 Headcount Weighted Safety Healthy Retiree Female Mortality Table and Safety Below Median Healthy Retiree Male Mortality Table, both set-forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. Sample healthy values follow:

Pub-2010 Fully Generational Mortality Tables				
Sample Ages in 2022	Value of \$1 Monthly for Life		Future Life Expectancy (Years)	
	Men	Women	Men	Women
45	\$159.80	\$165.79	37.39	41.57
50	153.16	159.59	32.55	36.38
55	144.36	151.67	27.78	31.35
60	133.36	142.06	23.18	26.55
65	120.49	130.54	18.91	22.03
70	105.00	116.69	14.89	17.77
75	87.74	100.57	11.28	13.84
80	69.70	82.99	8.19	10.37

For disabled participants, 80% PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table/ 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Mortality Table, separate rates for males and females.

The margin for future mortality improvements is included in projection scales. 75% of deaths were assumed to be duty related.

Rates of Disability. Disability rates measure the probabilities of active participants becoming disabled.

Sample Ages	Percent Becoming Disabled within Next Year
20	0.30 %
25	0.30
30	0.30
35	0.82
40	0.94
45	1.07
50	1.44
55	2.28

75% of disabilities were assumed to be service connected.

Assumptions Underlying Valuation

Rates of Separation from Active Status. The rates do not apply to participants eligible to retire and do not include separation on account of death or disability. Separation rates are used to measure the probabilities of participants remaining in service as a Firefighter.

Sample Ages	Years of Service	Percent Separating within Next Year
ALL	0	7.5 %
	1	5.0
	2	4.5
	3	4.0
	4	3.5
25	5 & Over	3.5
30		2.9
35		1.5
40		0.6
45		0.5
50		0.5
55		0.5
60	0.5	

Rates of Normal Retirement. Rates of normal retirement are used to measure the probabilities of an eligible member retiring during the next year. Retirement rates follow the retirement ages if eligibility first occurs at age 55 or later and follows the service at retirement if 25 years of service is reached prior to age 55.

Retirement Ages	Percent Retiring*	Service at Retirement	Percent Retiring*
55	50 %	25	20 %
56	50	26	10
57	50	27	10
58	50	28	10
59	50	29	10
60	100	30	100

** If eligible for normal retirement under the Health Trust, even when not eligible under FRS due to a date of hire after July 1, 2011. The FRS normal retirement conditions are age 60 and 8 years of service or 30 years of service.*

Assumptions Underlying Valuation

Active Participant Group Size. The valuation was based on a constant active member group size.

Annual Benefit Increase. An annual increase of 2.60% was assumed.

Benefit Service. Exact fractional service is used to determine the amount of benefit payable.

Decrement Operation. Disability and mortality decrements do not operate during the first five years of service. Disability and withdrawal do not operate during retirement eligibility.

Decrement Relativity. Decrement rates are used directly, without adjustment for multiple decrement table effects.

Decrement Timing. Decrements of all types are assumed to occur mid-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.

Funding Target. The additional projected assets expected to be accumulated for existing liabilities as of the valuation date.

Funding Value of Assets. Also referred to as actuarial value of assets, smoothed market value of assets, or valuation assets. Valuation assets recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased-in over a closed five-year period. During periods when investment performance exceeds the assumed rate, valuation assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, valuation assets will tend to be greater than market value.

Pay Increase Timing. Middle of (Fiscal) year. This means reported pays are assumed to increase on January 1 each year.

Vested Termination. Twenty-five percent (25%) of participants who terminate voluntarily or as a non-duty disability with 10 or more years of service were assumed to continue contributions to the Trust Fund.