City of Longmont “Old Hire” Firefighters’ Pension Plan

ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2022

August 30, 2022

Mr. James Golden
Finance Director
City of Longmont
350 Kimbark Street
Civic Center Complex
Longmont, CO 80501

Re: Actuarial Valuation as of January 1, 2022 for the "Old Hire" Firefighters' Pension Plan

Dear Jim:

The results of the January 1, 2022 Annual Actuarial Valuation of the "Old Hire" Firefighters' Pension Plan are presented in this report.

Actuarial Valuation

The primary purposes of the valuation report are to determine the adequacy of the current employer contribution rate, to describe the current financial condition of the Plan, and to analyze changes in the Plan's condition. Historical information has also been provided on funding progress and other information.

Valuations are prepared annually, as of January 1st, the first day of the plan year.

Funded Status and Actuarially Determined Contribution (ADC)

As of the current valuation date, the Plan's surplus (the excess of assets over accrued liability) is $536,288. The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) increased from January 1, 2021. The funded ratio at the valuation date is 121.4%, while it was 119.7% as of the previous valuation date. The funded status is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

The actuarially determined contribution remained at $0 due to the funded ratio staying above 100%.

Benefit Provisions

The actuarial valuation reflects the benefit and contribution provisions set forth in the Plan. It is the policy of the Plan sponsor to fund the actuarially determined contribution. Effective January 1, 2022, retirees and beneficiaries in pay status received a benefit increase of 3%.

Assumptions and Methods

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Plan's actuary. These assumptions are internally consistent and are reasonable based on the expected experience of the Plan.

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.

Demographic Data and Asset Information

Member data for retired participants as well as asset information was supplied as of the current valuation date, by the staff. There are no active members. We have not subjected either information to any auditing procedures, but have examined both for reasonableness and consistency with the prior year's information.

Disclosures

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Due to the many factors affecting a retirement system, users of this report should be aware that contributions made at the rate consistent with the current funding policy do not necessarily guarantee long-term benefit security.

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion the results presented also comply with the Plan as amended and restated, and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

The signing actuaries are independent of the plan sponsor. Both are actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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

Respectfully submitted,
Gabriel, Roeder, Smith & Co.

Paul T. Wood, ASA, FCA, MAAA
Senior Consultant

Thomas Lyle, FSA, FCA, EA, MAAA
Consultant

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SECTION A

SUMMARY OF RESULTS

SUMMARY OF RESULTS

Valuation Date:	January 1, 2022	January 1, 2021
Membership		
• Number of		
- Active Members	0	0
- Retirees and Disableds	8	8
- Beneficiaries	1	1
- Terminated Vested	0	0
- Total	9	9
• Annualized Pay Rate*	$0	$0
Assets		
• Market value	$3,044,744	$2,996,147
• Actuarial value	$3,044,744	$2,996,147
• Return on market value, prior year	11.90%	16.50%
• Contributions, prior year	$0	$8,655
• Contributions, prior year - 1	$0	$0
Actuarial Information		
• Actuarial accrued liability	$2,508,456	$2,502,018
• Unfunded actuarial accrued liability (UAAL)/(surplus)	($536,288)	($494,129)
• Actuarially determined city contribution	$0	$0
• Funded ratio	121.40%	119.70%
Gains/(Losses)		
• Asset experience	$135,974	$238,721
• Liability experience	-69,649	-185,720
• Assumptions change	0	0
• Provision change	-58,755	0
• Total	$7,570	$53,001

DEVELOPMENT OF EMPLOYER COST

	January 1, 2022 (1)	January 1, 2021 (2)
1. Payroll	$0	$0
2. Present value of future benefits		
a. Retired and Disabled	$2,384,296	$2,376,980
b. Beneficiaries	124,160	125,038
c. Terminated Vested Members	0	0
d. Active members	0	0
e. Total	$2,508,456	$2,502,018
3. Actuarial value of assets	$3,044,744	$2,996,147
4. Unfunded actuarial accrued liability (UAAL) (Item 2e - Item 3)/(surplus)	($536,288)	($494,129)
5. Normal Cost	$0	$0
6. Amortization of UAAL[1]	($71,360)	($65,750)
7. Actuarially determined City contribution for Fiscal Years Ending December 31, 2022 and 2021 (Item 5 + Item 6, not less than 0)	$0	$0

[1] Effective January 1, 2009, the amortization period was changed to the average life expectancy of the remaining group. As of January 1, 2021, the amortization period used is 10 years. As of January 1, 2022, the amortization period used is 10 years.

TOTAL EXPERIENCE GAIN OR LOSS

Item (1)	Valuation as of January 1, 2022 (2)	Valuation as of January 1, 2021 (3)
A. Calculation of actuarial liability gain or loss		
1. Actuarial Accrued Liability at beginning of period	$2,502,018	$2,428,969
2. Interest at 7.00% to Valuation Date	175,141	182,173
3. Benefit Payments with Interest to Valuation Date	-297,107	-294,844
4. Increase due to Benenfit Enhancements at Valuation Date	58,755	0
5. Expected Accrued Liability (1. + 2. + 3. + 4.)	$2,438,807	$2,316,298
6. Actual Accrued Liability at Valuation Date	$2,508,456	$2,502,018
7. Liability Gain/(Loss) (5. - 6.)	**($69,649)**	**($185,720)**
B. Calculation of asset gain or loss		
1. Actuarial Value of Assets at beginning of period	$2,996,147	$2,830,973
2. Interest at 7.00% to Valuation Date	209,730	212,323
3. Contributions with Interest to Valuation Date	0	8,974
4. Benefit Payments with Interest to Valuation Date	-297,107	-294,844
5. Expected Actuarial Value of Assets (1. + 2. + 3. + 4.)	$2,908,770	$2,757,426
6. Actuarial Value of Assets at Valuation Date	$3,044,744	$2,996,147
7. Actuarial Asset Gain/(Loss) (6. - 5.)	**$135,974**	**$238,721**
C. Total Actuarial Gain/(Loss) (A.7. + B.7.)	**$66,325**	**$53,001**

PROJECTED CASH FLOWS

As of January 1, 2022

Plan Year Ending	Actives	Retirees & Beneficiaries	Total
12/31/2022	$0	$290,927	$290,927
12/31/2023	0	286,045	286,045
12/31/2024	0	280,223	280,223
12/31/2025	0	273,405	273,405
12/31/2026	0	265,560	265,560
12/31/2027	0	256,689	256,689
12/31/2028	0	246,821	246,821
12/31/2029	0	236,018	236,018
12/31/2030	0	224,361	224,361
12/31/2031	0	211,943	211,943
12/31/2032	0	198,864	198,864
12/31/2033	0	185,233	185,233
12/31/2034	0	171,171	171,171
12/31/2035	0	156,834	156,834
12/31/2036	0	142,401	142,401
12/31/2037	0	128,060	128,060
12/31/2038	0	114,010	114,010
12/31/2039	0	100,440	100,440
12/31/2040	0	87,515	87,515
12/31/2041	0	75,376	75,376

SECTION B

HISTORICAL INFORMATION

SCHEDULE OF FUNDING PROGRESS

Valuation Date (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability/(Surplus) (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll (6)	UAAL as % of Payroll (4)/(6) (7)
January 1, 1994	$ 2,328,254	$ 2,930,231	$ 601,977	79.5%	$ 225,132	267.4%
January 1, 1996	2,646,351	2,891,524	245,173	91.5%	98,117	249.9%
January 1, 1998	3,243,432	3,106,103	(137,329)	104.4%	150,351	(91.3)%
January 1, 2000	3,410,872	3,166,596	(244,276)	107.7%	53,173	(459.4)%
January 1, 2002	3,298,368	3,167,196	(131,172)	104.1%	60,637	(216.3)%
January 1, 2004	3,108,539	3,092,786	(15,753)	100.5%	60,338	(26.1)%
January 1, 2006	3,221,196	3,039,932	(181,264)	106.0%	62,738	(288.9)%
January 1, 2008	3,498,430	2,990,205	(508,225)	117.0%	70,821	(717.6)%
January 1, 2010	2,895,737	2,960,014	64,277	97.8%	74,586	86.2%
January 1, 2011	3,111,795	2,884,929	(226,866)	107.9%	72,331	(313.6)%
January 1, 2012	2,915,109	2,824,842	(90,267)	103.2%	72,949	(123.7)%
January 1, 2013	3,150,581	2,762,601	(387,980)	114.0%	72,949	(531.9)%
January 1, 2014	3,484,702	2,946,028	(538,674)	118.3%	72,949	(738.4)%
January 1, 2015	3,399,391	2,874,116	(525,275)	118.3%	72,949	(720.1)%
January 1, 2016	3,053,447	2,827,896	(225,551)	108.0%	-	N/A
January 1, 2017	2,976,412	2,686,573	(289,839)	110.8%	-	N/A
January 1, 2018	3,154,206	2,656,318	(497,888)	118.7%	-	N/A
January 1, 2019	2,635,211	2,703,278	68,067	97.5%	-	N/A
January 1, 2020	2,830,973	2,428,969	(402,004)	116.6%	-	N/A
January 1, 2021	2,996,147	2,502,018	(494,129)	119.7%	-	N/A
January 1, 2022	3,044,744	2,508,456	(536,288)	121.4%	-	N/A

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Plan Year Ended	Actual Employer Contribution	Actuarially Determined Contribution	Percentage Contributed
(1)	(2)	(3)	(4)
December 31, 1996	N/A	$ 57,897	101.5%
December 31, 1998	N/A	24,933	249.9%
December 31, 2000	N/A	0	N/A
December 31, 2002	N/A	0	N/A
December 31, 2004	N/A	0	N/A
December 31, 2006	N/A	0	N/A
December 31, 2008	$ 8,200	0	N/A
December 31, 2010	94,712	7,043	1344.8%
December 31, 2011	107,572	0	N/A
December 31, 2012	109,998	0	N/A
December 31, 2013	82,256	0	N/A
December 31, 2014	0	0	N/A
December 31, 2015	0	0	N/A
December 31, 2016	0	0	N/A
December 31, 2017	0	0	N/A
December 31, 2018	0	0	N/A
December 31, 2019	0	8,655	0.0%
December 31, 2020	8,655	0	N/A
December 31, 2021	0	0	N/A
December 31, 2022	N/A	0	N/A

NOTES TO HISTORICAL INFORMATION

The information presented in the historical schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	January 1, 2022
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar, open
Amortization period (expected future lifetime of remaining members)	10 Years
Asset valuation method	Market Value
Actuarial assumptions:	
Investment rate of return	7.00%
Payroll growth rate	0.00%
Cost-of-living adjustments	0.00%

SECTION C

MARKET VALUE OF ASSETS

FUND ASSETS

Item	Year Ending December 31, 2021	Year Ending December 31, 2020
(1)	(2)	(3)
1. Cash and cash equivalents	$ 12,891	$ 27,964
2. Receivables	$ 0	$ 0
3. Investments		
a. Short-term cash	$ 205,731	$ 88,501
b. Equities	493,097	493,316
c. Mutual funds	2,333,883	2,387,682
d. Total investments	$ 3,032,711	$ 2,969,499
4. Total assets	$ 3,045,602	$ 2,997,463
5. Liabilities		
a. Accounts payable	$ 858	$ 1,316
b. Securities purchased	0	0
c. Benefits payable	0	0
d. Total liabilities	$ 858	$ 1,316
6. Total market value of assets available for benefits (Item 4 - Item 5)	$ 3,044,744	$ 2,996,147

RECONCILIATION OF PLAN NET ASSETS

Item	Year Ending December 31, 2021	Year Ending December 31, 2020
(1)	(2)	(3)
1. Market value of assets at beginning of period	$ 2,996,147	$ 2,830,973
2. Revenue for the period		
a. Contributions paid into trust - Employer plus employee	$ 0	$ 8,655
b. Income		
i. Interest, dividends, and other income	$ 460,619	$ 421,499
ii. Net realized and unrealized gains (losses)	(116,987)	26,727
iii. Investment expenses	(5,088)	(4,735)
iv. Net income	$ 338,544	$ 443,491
c. Total revenue	$ 338,544	$ 452,146
3. Expenditures for the period		
a. Refunds and lump sum distributions	$ 0	$ 0
b. Benefit payments	287,224	284,373
c. Administrative and miscellaneous expenses	2,723	2,599
d. Total expenditures	$ 289,947	$ 286,972
4. Increase in net assets (Item 2c - Item 3d)	$ 48,597	$ 165,174
5. Market value of assets at end of period (Item 1 + Item 4)	$ 3,044,744	$ 2,996,147

SECTION D

MEMBERSHIP DATA

MEMBERSHIP DATA

		January 1, 2022	January 1, 2021
1.	Active members		
	a. Number	0	0
	b. Total payroll	$ 0	$ 0
	c. Average salary		
	d. Average age	0.0	0.0
	e. Average service	0.0	0.0
2.	Terminated vested members		
	a. Number	0	0
	b. Total annual deferred benefits	$ 0	$ 0
	c. Average annual deferred benefit	$ 0	$ 0
	d. Average age	0.0	0.0
3.	Retirees & Beneficiaries		
	a. Number	9	9
	b. Total annual benefits	$ 292,905	$ 284,373
	c. Average annual benefit	$ 32,545	$ 31,597
	d. Average age	79.0	78.0

SECTION E

ACTUARIAL ASSUMPTIONS AND METHODS

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

1. Investment Return Rate — 7.00% per annum, compounded annually

2. Experience – Actives

   a. Retirement — Age 50 and 20 years of service

   b. Mortality — No pre-retirement mortality

   c. Disability — No disability assumption used

   d. Separation — None used

   e. Earnings Progression — Effective May 1, 2011, no additional salary increases are included for active members.

3. Mortality Rates

   Healthy Lives (Retired and Surviving Spouses)

   Pub-2010, Amount-Weighted, Safety, Healthy Annuitant Mortality Table projected with Scale MP-2020.

	Deaths per 1,000 Lives (rates as of 2022)	
Age	Male Participants	Female Participants
50	1.884	1.461
55	2.974	2.511
60	4.856	4.270
65	8.202	7.177
70	14.102	12.004
75	28.260	22.950
80	51.030	39.620

These mortality tables have a provision for future mortality improvement in the current assumption.

4.	Marriage Assumption	100% of participants are assumed to be married. Males are assumed to be three years older than females.
5.	Assumed Expenses	None
6.	Asset Valuation	Market Value
7.	First Class Firefighter Salary	$5,221 per month for 2022 and increases at 3.25% each year.

Actuarial Cost Method

1. The Entry Age Normal Method is used to determine Normal Cost, Accrued Actuarial Liability of the Plan and thereby the contribution. Under this method, the present value of each participant's expected benefits is determined, based on his age, service, and gender. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service or survivor's benefit. The present value of the expected future payments to retired participants and beneficiaries is the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.

2. The employer contributions required to support the benefits of the Plan are determined following a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.

3. The unfunded accrued liability contributions are determined by subtracting the current assets held from the present value of expected benefits to be paid from the Plan.

SECTION F

BENEFIT PROVISIONS

SUMMARY OF BENEFIT PROVISIONS

All actuarial calculations are based upon our understanding of the provisions of the City of Longmont "Old Hire" Firefighters' Pension Plan, in effect as of the valuation date. This summary does not attempt to cover all of the detailed provisions.

1. Compensation Considered: Basic salary for Firefighters for salary received before May 2, 2011. Salary received after May 1, 2011 shall not be considered compensation.

2. Employee Contribution Rate: Firefighters participating in this plan are contributing at the rate of 10% of their monthly salary. Beginning May 2, 2011, there will be no contribution requirement for each firefighter.

3. Normal Retirement Date: A Firefighter's Normal Retirement Date shall be the date on which he has attained 50 years of age and completed 20 years of service.

4. Retirement Benefits: Any Firefighter who elects to retire on or after his Normal Retirement Date shall be eligible for a monthly pension equal to 2 -1/2% of his monthly salary at the date of his retirement, times credited service limited to 20 years, plus 1% of his monthly salary times credited service in excess of 20 years prior to age 50, plus 2% of his monthly salary times credited service in excess of 20 years, after age 50, but before age 55. For a Firefighter in Covered Employment on May 1, 2011, the retirement benefit shall be based on his monthly salary as of April 2011.

5. Severance Benefits: Contributions without interest are refunded to Firefighters who terminate employment prior to being eligible for retirement benefits. Any member, upon termination of employment, who has completed at least 10 years of service may elect to leave his contributions in the fund and be eligible for a deferred retirement pension payable at age 50. The pension would be equal to the accrued Retirement Benefit.

6. Pre-Retirement Disability Benefits: None.

7. Eligibility: Participants in this plan are those whose employment commenced prior to April 8, 1978.

8. Pre-Retirement Death Benefits:

   Actives – None.

   Deferred Vested – The spouse of any deferred vested member who dies prior to normal retirement age will be entitled to a monthly pension equal to one-half of the member's accrued benefit, payable when the member would have reached age 50. Alternatively, a single sum equal to the member's accumulated contributions is available to the spouse.

9. Post-Retirement Death Benefits: If a retired Firefighter dies, the surviving spouse shall receive, until death or remarriage, a monthly pension equal to the greater of one-third of the salary of a first-grade Firefighter at the time of death or one-half of the retiree's benefit.

10. Increase to Retirees and Beneficiaries Effective January 1, 2022: Effective January 1, 2022, benefits in pay status to retirees and surviving spouses or dependent parents shall be increased. The increase shall be equal to 3% of the benefit amount in effect on January 1, 2021.

SECTION G

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY

The determination of the accrued liability 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 that results 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. 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 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.

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY

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:

	January 1, 2022	January 1, 2021
Ratio of net cash flows to market value of assets	-10%	-9%
Duration of the actuarial accrued liability	6.6	6.8

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 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.