FIRE AND POLICE PENSION ASSOCIATION
AURORA OLD HIRE FIRE PENSION FUND

ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2022

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To:	Administrative Heads and Finance Officers of the Aurora Old Hire Fire Pension Fund; administered by FPPA
Date:	July 2022
Subject:	**Actuarial Valuation Results as of January 1, 2022**

This report contains the actuarial valuation results as of January 1, 2022 for your department as determined by Gabriel, Roeder, Smith & Company (GRS), actuary for the Fire and Police Pension Association (FPPA). Questions about this report should be directed to FPPA, rather than to Gabriel, Roeder, Smith & Company.

Financing Objectives

This valuation was prepared to determine the Required Contribution for fiscal years 2023 and 2024. The Required Contribution for FY2023 and FY2024 is $3,399,614 and is shown in Table 1, Item 10.

Due to the many factors affecting a retirement system, users of this report should be aware that contributions made at that amount do not necessarily guarantee long-term benefit security.

Benefit Provisions

This actuarial valuation reflects the provisions that were applicable to the Aurora Old Hire Fire Pension Fund as of the valuation date. The details of the actuarial calculations, based on the current benefit provisions, are described in this report. Departments are allowed to model three alternative benefit packages, if desired. If alternatives were requested, a summary of the alternative requested and the actuarial results based on those packages is shown in Table 18.

Actuarial Assumptions and Methods

This actuarial valuation uses the assumptions and methods that were adopted by the Board of Directors of FPPA based upon the actuary's analysis and recommendations resulting from the 2018 Experience Study and effective in the January 1, 2020 valuations, as well as the subsequent asset allocation study of the Old Hire Plans.

The assets associated with this plan are in the Glide-Path Pool asset allocation based on certain plan maturity metrics. The Board adopted an investment return of 6.50% for this asset allocation effective with the January 1, 2020 valuation.

A summary of the assumptions and methods can be found in Table 15.

Liabilities were determined under the entry age normal actuarial cost method.

The asset valuation method approximates smoothing over a five-year period by recognizing 20% of the difference between the projected actuarial value and the market value at the valuation date.

The results of the actuarial valuation are dependent on 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 annual contribution and funding periods. The actuarial calculations are intended to provide information for rational decision making.

This report is 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. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report does not include a detailed assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

Assets

Table 4 shows the market value of assets for this department and Table 5 shows the development of the actuarial value of assets. The actuarial value is an adjusted market value. It reflects only a portion of the excess (or shortfall) between recent investment returns and the corresponding expected returns based on the annual investment return assumption. The actuarial value recognizes 20% of the difference between the projected actuarial value and the market value at the valuation date with the additional 80% of the difference recognized over the next four years (20% per year). This smoothed average approach dampens the year-to-year fluctuations in the calculated annual contribution.

Member Data

Member data as of January 1, 2022 was supplied by FPPA, as supplied by the department throughout the normal course of business. GRS did not subject the data to any auditing procedures but reviewed it and tested it for reasonableness and consistency. The member count is shown in Table 3.

Experience

Actuarial experience is measured by comparing the expected valuation results with the actual valuation results at the valuation date. The expected valuation results are calculated as if all of the actuarial assumptions had been met. For instance, a gain/(loss) attributable to investment experience is realized when the pension fund assets earn over/(under) the actuarial assumed earnings rate and a gain/(loss) attributable to liability experience is realized when the pension fund liabilities are less/(greater) than the actuarial assumptions predicted (e.g. members not living as long as expected, rank escalation or cost-of-living increases were greater than expected, etc.).

During the two year period since the prior valuation, the plan experienced liability gains and investment gains due to actual experience deviating from assumptions. Table 2 shows the detailed calculations of the gains and losses since the prior valuation.

GASB Accounting

The Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans* (Issued 6/2012), replaced the requirements under GASB Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans* (Issued 11/1994), effective for financial statements for fiscal years beginning after June 15, 2013. GASB Statement No. 68, *Accounting and Financial Reporting for Pensions* (Issued 6/2012), replaced GASB Statement No. 27, *Accounting for Pensions by State and Local Governmental Employers* (Issued 11/1994), effective for fiscal years beginning after June 15, 2014. GASB Statement No. 67 was implemented in FPPA's Comprehensive Annual Financial Report beginning in fiscal year 2014. Employer reporting information for GASB Statement No. 68 is provided in a separate report.

Projected Actuarial Results

To allow the City to anticipate future contribution requirements for the Fund, we have projected the actuarial status of the Fund as of January 1, 2024. The following table provides the Required Contribution for Fiscal Years 2023 & 2024 based on the January 1, 2022 actuarial valuation and an estimated Required Contribution for Fiscal Years 2025 and 2026, based on three different investment return scenarios in 2022 & 2023 and a projected January 1, 2024 actuarial valuation.

	Required Contribution - Current Financing Objectives		
Fiscal Year (FY)	Assuming 4.50% return in FY 2022 & 2023	Assuming 6.50% return in FY 2022 & 2023	Assuming 8.50% return in FY 2022 & 2023
2023 & 2024	$3,399,614	$3,399,614	$3,399,614
2025 & 2026	$3,399,614	$3,399,614	$3,399,614

The projected liabilities are calculated by rolling forward the liabilities as of January 1, 2022, taking into account interest and benefit payments for the year, including mortality incidence and anticipated cost of living increases. The 6.50% scenario above coincides with the actuarial investment return assumption of 6.50%. The 4.50% and 8.50% scenarios demonstrate the impact of small amounts of investment return volatility. Actual investment return volatility could exceed the illustrated +/-2% deviation from the actuarial investment return assumption of 6.50%.

In addition to investment return experience, demographic experience and future assumption changes could also impact the actual Required Contribution for fiscal years 2025 and 2026.

Tables

This report includes the following sections:

- The executive summary includes a condensed summary of the demographic, financial, and actuarial data.

- Table 1 provides the details of the development of the Required Contribution.
- Table 2 shows the sources of change in the UAAL since the prior valuation.
- Table 3 shows historical actuarial and demographic data for the department.
- Tables 4, 5, 6, and 7 show the development of the financial information.
- Tables 8 and 9 provide information that used to be required under the Governmental Accounting Standards Board Statement No. 25 (GASB 25) and No. 27 (GASB 27). These are provided for historical comparison purposes only. These statements have been replaced by GASB 67 and GASB 68 and results under those standards will be provided in a separate report.
- Table 10 shows historical cash flow information.
- Tables 11, 12, and 13 show demographic data for the department.
- Table 14 shows the risks associated with measuring the accrued liability and actuarially determined contribution.
- Table 15 shows the actuarial assumptions and methods used to calculate the liabilities.
- Table 16 is a summary of the benefit provisions for the department.
- Table 17 provides definitions of several terms used throughout the report.

Certification

We certify that the information included herein and contained in the 2022 Actuarial Valuation Report is accurate and fairly presents the actuarial position of the Aurora Old Hire Fire Pension Fund as of January 1, 2022. For financial reporting purposes, the projection of benefits for this Plan does not explicitly incorporate the potential effects of the contractual limits on employer contributions, if applicable.

The supporting schedules in this report were prepared by the actuaries and can be used for completing the actuarial section of the Comprehensive Annual Financial Report. To the best of our knowledge, the supporting schedules fully and fairly disclose the actuarial conditions of the plan.

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 comply with the requirements of the State of Colorado statutes and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

The undersigned are independent actuaries.

Mr. Newton and Ms. Woolfrey are members of the Society of Actuaries and the American Academy of Actuaries, and are also Enrolled Actuaries. Both are experienced in performing valuations for public retirement systems.

Respectfully submitted,
Gabriel Roeder Smith & Company

Dana Woolfrey, FSA, EA, MAAA	Joseph Newton, FSA, EA, MAAA
Senior Consultant	Pension Market Leader

Executive Summary

Item	January 1, 2022	January 1, 2020
	(1)	(2)
Membership		
• Number of:		
- Active members	0	0
- Members in DROP	0	0
- Disabled members	1	1
- Retired members	98	106
- Beneficiaries	27	22
- Total	126	129
• Annualized payroll supplied by FPPA	$ 0	$ 0
• Annualized monthly benefits paid	$ 9,377,229	$ 9,169,215
Assets		
• Market value	$ 77,648,593	$ 73,927,243
• Actuarial value	73,383,820	74,481,540
• Return on market value - Prior year	11.7%	12.8%
• Return on market value - Prior year minus 1	10.1%	0.1%
• Average return on actuarial value	7.6%	6.7%
• Contribution for prior year	$ 3,399,614	$ 3,033,111
• Contribution for prior year minus 1	$ 3,033,111	$ 3,184,594
• Ratio of actuarial value to market value	94.5%	100.7%
Actuarial Information		
• Actuarial accrued liability	$ 113,134,066	$ 118,017,431
• Unfunded actuarial accrued liability/(surplus)	39,750,246	43,535,891
• Funded ratio	64.9%	63.1%
Required Contribution		
• For year ending December 31, 2023	$ 3,399,614	$ 3,399,614
• For year ending December 31, 2024	$ 3,399,614	$ 3,399,614

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Table 1 - Development of Required Contribution

In 2019, House-Bill 20-1044 was passed which allows the Board to modify the financing objectives of the Old Hire Plans. The financing objectives are as follows:

1) Desire for Stable Contributions

The Required Contribution from the actuarial valuation as of January 1, 2020, which determines the contribution requirement for fiscal years 2021 and 2022 is $3,399,614. The goal of the funding policy is for contributions to remain unchanged. Thus, unless one of the following conditions (for increased or decreased contributions) is met, the Required Contribution will remain equal to the Required Contribution from the previous biennium. If neither the conditions for increased contributions nor the conditions for decreased contributions, described below, is met, then the contribution requirement will continue to be $3,399,614 for fiscal years 2023 and 2024.

2) Conditions for Increased Contributions

The Required Contribution cannot be less than the Contribution Threshold. The Contribution Threshold will equal the percent of the annual benefit payments not covered from the current funding position of the trust. It represents the amount needed to keep the funded ratio from declining from one year to the next.

Contribution Threshold = (100% - Funded Ratio) * Annual Benefit Payments + Administrative Expenses

Based on the results as of January 1, 2022, the Contribution Threshold for 2023 would be calculated as follows:

Contribution Threshold for 2023 = (100% - 64.86%) * $9,298,530 + $40,915 = $3,308,418

3) Conditions for Decreased Contributions

If the Contribution Threshold for the upcoming biennium is less than 60% of the contribution from the current biennium, the Required Contribution for the new biennium will be reduced 10% from the current biennium. Currently, the Conditions for Decreased Contributions are not projected to apply for the upcoming biennium.

Finally, if the Funding Target of 115% has been achieved, then contributions can reduce to $0.

Table 1 - Development of Required Contribution (Continued)

		January 1, 2022 (1)	January 1, 2020 (2)
1.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 112,598,316	$ 117,460,572
	b. Disabled members	535,750	556,859
	c. Members in DROP	0	0
	d. Active members	0	0
	e. Total	$ 113,134,066	$ 118,017,431
2.	Actuarial value of assets	$ 73,383,820	$ 74,481,540
3.	Unfunded actuarial accrued liability (UAAL)/(surplus) (1e. - 2.)	$ 39,750,246	$ 43,535,891
4.	Funded ratio	64.86%	63.11%
5.	Contribution level current biennium (2021-2022)	$ 3,399,614	$ 3,033,111
6.	Current Benefits	$ 9,298,530	$ 9,105,701
7.	Administrative Expenses	$ 40,915	$ 40,521
8.	Contribution Threshold [(100% - 4) x 6 + 7]	$ 3,308,418	$ 3,399,614
9.	Contribution Threshold as % of Current Contribution [8 / 5]	97%	112%
10.	**Required Contribution for Upcoming Biennium**	**$ 3,399,614**	**$ 3,399,614**

Outcome: Conditions to increase or decrease contributions not met. Continue annual funding of $3,399,614.

Table 2 - Change in UAAL

1.	Unfunded actuarial accrued liability (UAAL) as of January 1 of prior valuation year	$	43,535,891
2.	Benefit modifications from prior valuation		0
3.	Total normal cost for FY2020 & FY2021		0
4.	Contributions less administrative expenses during FY2020		(2,992,134)
5.	Contributions less administrative expenses during FY2021		(3,358,762)
6.	Interest at 6.50%		5,436,391
7.	Expected UAAL as of this valuation (sum of 1. to 6.)	$	42,621,386
8.	Actual UAAL at end of period	$	39,750,246
9.	Actuarial gain/(loss) for the period (7. - 8.)	$	2,871,140
	SOURCE OF GAINS/(LOSSES)		
10.	Asset gain/(loss) (See Table 7)	$	1,582,570
11.	Salary/rank liability gain/(loss) for the period	$	561,497
12.	Assumption gain/(loss) for the period	$	0
13.	Net liability gain/(loss) for the period (9. - 10. - 11. - 12.)	$	727,073

Table 3 - Actuarial Experience

		2022	2020	2018	2016	2014	2012	2010
1.	Number of members							
a.	Active	0	0	0	0	0	1	1
b.	Retired	98	106	110	114	120	120	120
c.	DROP	0	0	1	2	2	4	8
d.	Beneficiaries	27	22	20	17	15	15	12
e.	Disabled	1	1	1	1	1	1	1
f.	Total	126	129	132	134	138	141	142
2.	Covered payroll	$ 0	$ 0	$ 0	$ 0	$ 0	$ 68,218	$ 66,487
3.	Average compensation	$ 0	$ 0	$ 0	$ 0	$ 0	$ 68,218	$ 66,487
4.	Based on granting full rank escalation							
a.	Normal cost	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
b.	Accrued liability	113,134,066	118,017,431	106,740,683	108,887,994	102,032,674	101,430,286	104,279,437
c.	Actuarial value of assets	73,383,820	74,481,540	76,166,031	77,708,819	79,258,302	80,886,666	88,066,465
d.	Unfunded liability	39,750,246	43,535,891	30,574,652	31,179,175	22,774,372	20,543,620	16,212,972
e.	Remaining amortization period	N/A	N/A	19	20	20	20	20
f.	Funded ratio	64.9%	63.1%	71.4%	71.4%	77.7%	79.7%	84.5%
5.	Required contribution							
a.	Amount	$ 3,399,614	$ 3,399,614	$ 3,033,111	$ 3,184,594	$ 2,175,122	$ 1,963,632	$ 1,755,747
b.	Per member	26,981	26,354	22,978	23,766	15,762	13,926	12,364

Table 4 - Reconciliation of Net Plan Assets

			Year Ending 12/31/2021 (1)	Year Ending 12/31/2020 (2)
1.	Market value of assets at beginning of year		$ 74,969,083	$ 73,927,243
2.	Revenue for the year			
	a.	Plan direct inflows		
		i. Employer contributions	$ 3,399,614	$ 3,033,111
		ii. State contributions	0	0
		iii. Affiliations	0	0
		iv. Plan directed expenses	(10,285)	(9,854)
		v. Total	$ 3,389,329	$ 3,023,257
	b.	Allocated income		
		i. Interest	$ 450,339	$ 483,099
		ii. Dividends	162,946	168,840
		iii. Other Income	215,260	237,539
		iv. Net change accrued income	(19,283)	(25,680)
		v. Unrealized gain/(loss)	3,394,253	3,510,200
		vi. Realized gain/(loss)	4,771,226	3,314,938
		vii. Total	$ 8,974,741	$ 7,688,936
	c.	Total Revenue (2a. + 2b.)	$ 12,364,070	$ 10,712,193
3.	Expenditures for the year			
	a.	Plan direct outflows		
		i. Net benefits	$ (9,121,265)	$ (9,110,462)
		ii. Refunds	0	0
		iii. Total	$ (9,121,265)	$ (9,110,462)
	b.	Allocated expense		
		i. Investment expenses	$ (532,728)	$ (528,768)
		ii. Directed plan expenses	(740)	(3,783)
		iii. Allocated fees and expenses	(29,827)	(27,340)
		iv. Total allocated expenditures	$ (563,295)	$ (559,891)
	c.	Total expenditures (3a. + 3b.)	$ (9,684,560)	$ (9,670,353)
4.	Increase/(Decrease) in net assets (2c. + 3c.)		$ 2,679,510	$ 1,041,840
5.	Market value of assets at end of year (1. + 4.)		$ 77,648,593	$ 74,969,083

Table 5 - Development of Actuarial Value of Assets

	Year Ending 12/31/2021 (1)	Year Ending 12/31/2020 (2)
1. Actuarial value of assets at beginning of year	$ 73,398,349	$ 74,481,540
2. Cash flow for the year		
a. Contributions	$ 3,399,614	$ 3,033,111
b. State contributions	0	0
c. Affiliation contributions	0	0
d. Benefit payments	(9,121,265)	(9,110,462)
e. Administrative and other expenses	(40,852)	(40,977)
f. Net cash flow	$ (5,762,503)	$ (6,118,328)
3. Expected investment earnings	$ 4,583,611	$ 4,642,454
4. Expected actuarial value of assets at end of year	$ 72,219,457	$ 73,005,666
5. Actual market value of assets at end of year	$ 77,648,593	$ 74,969,083
6. Excess earnings/(shortfall)	$ 5,429,136	$ 1,963,417
7. Excess earnings/(shortfall) recognized (Table 6, Item 6)	$ 1,164,363	$ 392,683
8. Final actuarial value of assets (Item 4 + Item 7)	$ 73,383,820	$ 73,398,349

Table 6 - Development of Amounts to be Recognized in the Actuarial Value of Assets

	Year Ending 12/31/2021 (1)	Year Ending 12/31/2020 (2)
1. Remaining deferrals of excess (shortfall) of investment income from prior years		
a. Current year - 4	$ 0	$ 0
b. Current year - 3	0	0
c. Current year - 2	0	(554,297)
d. Current year - 1	1,570,734	0
e. Total	$ 1,570,734	$ (554,297)
2. Current year (Table 5, Item 6 - Table 6, Item 1)	$ 3,858,402	$ 2,517,714
3. Amounts to be immediately recognized due to offsetting current year experience (Item 2) against prior year deferrals (Item 1)		
a. Current year - 4	$ 0	$ 0
b. Current year - 3	0	0
c. Current year - 2	0	554,297
d. Current year - 1	0	0
e. Current year	0	(554,297)
f. Total	$ 0	$ 0
4. Remaining prior year deferrals		
a. Current year - 4	$ 0	$ 0
b. Current year - 3	0	0
c. Current year - 2	0	0
d. Current year - 1	1,570,734	0
e. Current year	3,858,402	1,963,417
f. Total	$ 5,429,136	$ 1,963,417
5. Deferral of excess (shortfall) of investment income for:		
a. Current year - 4	$ 0	$ 0
b. Current year - 3	0	0
c. Current year - 2	0	0
d. Current year - 1	1,178,051	0
e. Current year	3,086,722	1,570,734
f. Total	$ 4,264,773	$ 1,570,734
6. Total amount recognized in actuarial value of assets (Item 3.f + Item 4.f. - Item 5.f.)	$ 1,164,363	$ 392,683

Table 7 - Gain/(Loss) on Actuarial Value of Assets

		January 1, 2022 (1)	January 1, 2020 (2)
1.	Actuarial assets, prior valuation	$ 74,481,540	$ 76,166,031
2.	Total contributions since prior valuation	$ 6,432,725	$ 6,217,705
3.	Benefits and refunds since prior valuation	$ (18,231,727)	$ (17,553,426)
4.	Administrative and other expenses since prior valuation	$ (81,829)	$ (81,041)
5.	Assumed net investment income at 6.50%		
	a. Beginning assets	$ 9,997,285	$ 11,853,339
	b. Contributions	412,623	480,965
	c. Benefits, refunds and administrative expenses	(1,209,367)	(1,333,528)
	d. Total	$ 9,200,541	$ 11,000,776
6.	Expected actuarial assets (1. + 2. + 3. + 4. + 5.)	$ 71,801,250	$ 75,750,045
7.	Actual actuarial assets, this valuation	$ 73,383,820	$ 74,481,540
8.	Net asset gain/(loss) since prior valuation (7. - 6.)	$ 1,582,570	$ (1,268,505)
		Gain	Loss

Table 8 - Statement of Funding Progress

Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL (3) - (2))	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as a percent of payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
January 1, 2004	$ 85,014,289	$ 99,587,091	$ 14,572,802	85.4%	$ 1,330,722	1095%
January 1, 2006	92,918,056	99,466,498	6,548,442	93.4%	647,157	1012%
January 1, 2008	103,965,149	102,757,130	(1,208,019)	101.2%	277,349	(436%)
January 1, 2010	88,066,465	104,279,437	16,212,972	84.5%	66,487	24385%
January 1, 2012	80,886,666	101,430,286	20,543,620	79.7%	68,218	30115%
January 1, 2014	79,258,302	102,032,674	22,774,372	77.7%	0	N/A
January 1, 2016	77,708,819	108,887,994	31,179,175	71.4%	0	N/A
January 1, 2018	76,166,031	106,740,683	30,574,652	71.4%	0	N/A
January 1, 2020	74,481,540	118,017,431	43,535,891	63.1%	0	N/A
January 1, 2022	73,383,820	113,134,066	39,750,246	64.9%	0	N/A

The funded status measure may be appropriate for assessing the need for future contributions. 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.

Table 9 - History of Employer Contributions

The following exhibit shows a history of the Required Contribution and the actual contributions made to the Plan.

Fiscal Year Ending	Required Contribution	Actual Contribution	Percent
(1)	(2)	(3)	(4)
December 31, 2015	$ 2,178,948	$ 2,178,948	100%
December 31, 2016	2,178,948	2,182,774	100%
December 31, 2017	3,184,594	3,184,594	100%
December 31, 2018	3,184,594	3,184,594	100%
December 31, 2019	3,033,111	3,033,111	100%
December 31, 2020	3,033,111	3,033,111	100%
December 31, 2021	3,399,614	3,399,614	100%
December 31, 2022	3,399,614	N/A	

Table 10 - Cash Flow Analysis

Year Ending December 31,	Contributions for the Year	Expenditures During the Year: Benefit Payments **	Expenditures During the Year: Expenses	Expenditures During the Year: Total	External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2011	$ 1,755,747	$ (7,504,273)	$ (605,420)	$ (8,109,693)	$ (6,353,946)	$ 72,638,175	(8.7%)
2012	1,755,747	(7,742,179)	(685,251)	(8,427,430)	(6,671,683)	74,722,114	(8.9%)
2013	1,963,632	(7,777,924)	(696,074)	(8,473,998)	(6,510,366)	79,700,815	(8.2%)
2014	1,963,632	(7,948,618)	(151,222)	(8,099,840)	(6,136,208)	78,807,925	(7.8%)
2015	2,178,948	(8,208,101)	(130,738)	(8,338,839)	(6,159,891)	74,090,539	(8.3%)
2016	2,182,774	(8,246,516)	(133,347)	(8,379,863)	(6,197,089)	71,665,666	(8.6%)
2017	3,184,594	(8,400,659)	(36,062)	(8,436,721)	(5,252,127)	76,561,985	(6.9%)
2018	3,184,594	(8,596,950)	(42,220)	(8,639,170)	(5,454,576)	71,178,713	(7.7%)
2019	3,033,111	(8,956,476)	(38,821)	(8,995,297)	(5,962,186)	73,927,243	(8.1%)
2020	3,033,111	(9,110,462)	(40,977)	(9,151,439)	(6,118,328)	74,969,083	(8.2%)
2021	3,399,614	(9,121,265)	(40,852)	(9,162,117)	(5,762,503)	77,648,593	(7.4%)
2022*	3,399,614	(9,298,530)	(40,915)	(9,339,445)	(5,939,831)	76,562,876	(7.8%)
2023*	3,399,614	(9,425,225)	(41,938)	(9,467,163)	(6,067,549)	75,274,718	(8.1%)
2024*	3,399,614	(9,533,155)	(42,986)	(9,576,141)	(6,176,527)	73,790,310	(8.4%)

* Cash flow estimated based on expected contributions and expected benefit payments.
** Expected Benefit Payments for 2022 and beyond include expected mortality and if applicable, future cost of living increases.

Table 11 - Membership Data

		January 1, 2022 (1)	January 1, 2020 (2)	January 1, 2018 (3)
1.	Active members			
	a. Number	0	0	0
	b. Total payroll	$ 0	$ 0	$ 0
	c. Average annual salary	$ 0	$ 0	$ 0
	d. Average age	N/A	N/A	N/A
	e. Average service	N/A	N/A	N/A
2.	Members in DROP			
	a. Number	0	0	1
	b. Total annual benefits	$ 0	$ 0	$ 80,962
	c. Average annual benefit	$ N/A	$ N/A	$ 80,962
	d. Average age	N/A	N/A	65.0
3.	Service retirees			
	a. Number	98	106	110
	b. Total annual benefits	$ 7,981,687	$ 8,062,638	$ 7,550,264
	c. Average annual benefit	$ 81,446	$ 76,063	$ 68,639
	d. Average age	75.4	73.5	71.8
4.	Disabled retirees			
	a. Number	1	1	1
	b. Total annual benefits	$ 65,304	$ 62,109	$ 55,228
	c. Average annual benefit	$ 65,304	$ 62,109	$ 55,228
	d. Average age	85.0	83.0	81.0
5.	Beneficiaries			
	a. Number	27	22	20
	b. Total annual benefits	$ 1,330,238	$ 1,044,468	$ 819,646
	c. Average annual benefit	$ 49,268	$ 47,476	$ 40,982
	d. Average age	75.1	75.0	72.6

Table 12 - Summary of Retirees by Age and Type

Age	Retirees		Disabled Members		Beneficiaries		Members in DROP		All	
Age	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Less than 50	0	$ 0	0	$ 0	0	$ 0	0	$ 0	0	$ 0
50-54	0	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	2	4,158	0	0	2	4,158
60-64	1	4,903	0	0	1	3,535	0	0	2	4,219
65-69	9	6,391	0	0	2	4,418	0	0	11	6,032
70-74	37	6,878	0	0	8	3,530	0	0	45	6,283
75-79	29	6,543	0	0	6	3,972	0	0	35	6,102
Greater than 80	22	7,204	1	5,442	8	4,761	0	0	31	6,517
All	98	$ 6,787	1	$ 5,442	27	$ 4,106	0	$ 0	126	$ 6,202

Table 13 - Schedule of Retirants & Annuitants Added to and Removed from Rolls

	Added to Rolls		Removed from Rolls		Rolls-End of Year				
Valuation Year January 1	Number	Annual Benefits*	Number	Annual Benefits	Number	Annual Benefits	% Increase in Annual Benefits	Average Annual Benefits	Average Age
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2004	N/A	N/A	N/A	N/A	123	$ 5,303,940	N/A	$ 43,121	N/A
2006	11	$ 829,046	1	$ 47,711	133	$ 6,085,275	14.7%	$ 45,754	62.4
2008	8	$ 851,713	3	$ 121,994	138	$ 6,814,994	12.0%	$ 49,384	64.0
2010	5	$ 690,553	2	$ 93,520	141	$ 7,412,027	8.8%	$ 52,568	65.7
2012	3	$ 248,106	4	$ 213,288	140	$ 7,446,845	0.5%	$ 53,192	67.5
2014	3	$ 664,052	5	$ 249,271	138	$ 7,861,626	5.6%	$ 56,968	69.0
2016	3	$ 823,925	7	$ 418,785	134	$ 8,266,766	5.2%	$ 61,692	70.6
2018	5	$ 542,996	7	$ 303,662	132	$ 8,506,100	2.9%	$ 64,440	72.0
2020	3	$ 1,088,362	6	$ 425,247	129	$ 9,169,215	7.8%	$ 71,079	73.8
2022	7	$ 900,224	10	$ 692,210	126	$ 9,377,229	2.3 %	$ 74,422	75.4

* Includes cost-of-living adjustments granted since the prior valuation.

Table 14 - Risks Associated with Measuring the Accrued Liability and Required Contribution

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:

A: Investment risk – actual investment returns may differ from the expected returns;

B: 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;

C: 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 or other relevant contribution base;

D: Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;

E: 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.

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 retirees and

Table 14 - Risks Associated with Measuring the Accrued Liability and Required Contribution (Continued)

beneficiaries 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, 2020
Ratio of net cash flows to market value of assets	-7%	-8%
Duration of the actuarial accrued liability	8.9	9.5

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 (see Table 8).

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.

Table 15 - Summary for Actuarial Assumptions, Methods, and Changes

The calculations set forth in this report are based on the following assumptions:

1. Investment Return Rate — 6.50% per annum (net of investment expenses), compounded annually

2. Post-Retirement Mortality

   a) Healthy Retirees, Beneficiaries, and Disabled Retirees (retired after January 1, 1980) — 2006 central rates from the RP-2014 Annuitant Mortality Tables for males and females projected to 2018 using the MP-2017 projection scales, and then projected prospectively using the ultimate rates of the scale for all years.

	Annual Rate Per 1,000 (for 2022)	
Age	Males	Females
50	4.036	2.721
55	5.780	3.820
60	8.097	5.699
65	11.597	8.388
70	17.197	12.931
75	27.461	21.237
80	46.375	36.347

   b) Disabled Retirees (retired before January 1, 1980) — Post-Retirement Mortality Rates Set-Forward Three Years

	Annual Rate Per 1,000 (for 2022)	
Age	Males	Females
50	5.064	3.282
55	7.051	4.860
60	10.029	7.186
65	14.563	10.768
70	22.591	17.335
75	37.401	29.144
80	64.720	51.330

Table 15 - Summary for Actuarial Assumptions, Methods, and Changes (Continued)

3. Administrative Expenses — An explicit administrative expense equal to the average of the actual expenses for the two prior years.

4. Benefit Escalation — 3.50% (for Full Rank Escalation, 3.50% is the assumed annual increase for all benefits)

5. Changes in Actuarial Assumptions — None.

6. Changes in Actuarial Methods — None.

7. Actuarial Cost Method

   Under the entry age actuarial cost method, the normal cost is computed as the level dollar amount which, if paid from the earliest time each member would have been eligible to join the plan if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the plan. The normal cost for the plan is determined by summing the normal cost of all members.

   The actuarial accrued liability under this method at any point in time is the theoretical amount of the fund that should have been accumulated had annual contributions been made in prior years equaling to the normal cost. The unfunded actuarial accrued liability/(surplus) is the excess of the actuarial accrued liability over the actuarial value of the plan assets as of the valuation date.

   The contribution requirements determined by this valuation will not be effective until one year later, and the determination of the requirement reflects this deferral. It is assumed that there will be no change in the normal cost due to the deferral, and it is assumed that payments are made in the middle of the year.

   Under this method, experience gains and losses (i.e. decreases or increases in accrued liabilities), attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.

8. Asset Valuation Method

   The asset valuation method is based on a comparison of expected and actual asset values. The actuarial value of assets is equal to the market value of assets less a five-year phase in of the Excess (Shortfall) between expected investment return and actual income determined as follows:

   - At the beginning of each plan year, an expected actuarial asset value is calculated as the sum of the previous year's actuarial value increased with a year's interest at the Plan valuation rate plus net cash flow (excluding expenses) adjusted for interest (at the same rate) to the end of the previous plan year.

Table 15 - Summary for Actuarial Assumptions, Methods, and Changes (Continued)

- The difference between the expected actuarial asset value and the actual market value is the investment gain or (loss) for the previous plan year.
- If the current year's difference is the opposite sign of any of the prior year's deferred Excesses\(ShortFalls), then the prior year's bases (starting with the oldest) are reduced dollar for dollar along with the current year's base. Any remaining bases are then recognized over five years (20% per year) from their initial creation.

9. Contributions Requirement

   Please see Table 1 for a description of the current policy regarding the development of the Required Contribution.

Table 16 - Summary of Benefit Provisions

A. Eligibility

Members included are employees hired prior to April 8, 1978, electing to remain covered under the provisions of the City's current plan. This is a closed plan.

B. Compensation

Base salary including longevity pay.

C. Contribution Rate

Members are not currently contributing to this fund. The City remits a required contribution based on the latest actuarial study.

D. Normal, Delayed, Vested, Disability, and Severance Retirements including their Death Benefit Definitions

1. Normal

(a) For those firefighters who were initially hired by the city prior to January 1, 1976, the normal retirement requirement is 20 years of credited service and attainment of age 50. For those firefighters hired subsequent to January 1, 1976, the requirement is 25 years of credited service and attainment of age 50. (a), shall be eligible to receive a service retirement monthly pension equal to one-half of the current (rank escalation) highest monthly base salary paid for the rank held by such former member at the time of termination of employment with the department thereafter, so long as the member is in retirement, plus one-half of the annual longevity pay and longevity credit earned by the member prior to January 1, 2005. Such monthly pension shall be paid regardless of income or earnings which the retirant receives from any other source.

(b) Normal retirement survivor benefit; calculation for spouse. If a firefighter receiving a normal retirement benefit dies, the surviving spouse and/or alternate payee shall receive, until death, a monthly pension. The total benefit payable to the surviving spouse and alternate payee shall not exceed 66 percent of the benefit, which includes rank escalation, paid to the deceased.

Table 16 - Summary of Benefit Provisions (Continued)

(c) Payment to dependent minor children. There shall be paid to the surviving spouse or the legally appointed guardian of each child of such deceased member of the fire department a monthly payment of $30.00 for each child, to continue until such child reaches the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code. If such spouse should die or there be no surviving spouse as above limited and described but a surviving child or children under the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code, there shall be paid a monthly amount equal to the full payment to which such firefighter spouse would have been entitled had the spouse survived, less any amount previously disposed of to an alternate payee under an approved domestic relations order, to be divided equally among the children or a monthly payment of $30.00 for each surviving child, whichever total amount is greater, to the guardian of the children for the benefit of the children.

2. Delayed retirement

(a) Generally. Any member who has met the eligibility requirement in subsection 102-194(a) will be eligible for a delayed retirement benefit for each full year of additional active service up to ten years of additional service. This benefit shall be an additional two percent of the current (rank escalation) highest monthly base salary paid for the rank held by such former member at the time of termination of employment with the department for each additional full year of active service plus the annual longevity pay and longevity credit earned by the member prior to January 1, 2005. For each additional full year of active service, the rank escalator benefit and longevity pay and longevity credit shall be increased by two percent. The delayed retirement benefit shall be available to members retiring on or after January 1, 1986. In no case shall the accumulation of additional active service through the delayed retirement benefit program result in a service retirement monthly pension in excess of 70 percent of the current (rank escalation) highest monthly base salary, plus longevity pay and longevity credit, paid for the rank held by such former member at the time of termination of employment with the department. For retirements occurring after May 1, 1991, the additional percent shall be four percent up to six years of additional service for a maximum of 74 percent of the current (rank escalation) highest monthly base salary, plus longevity pay and longevity credit, paid for the rank held by such former member at the time of termination of employment with the department. This modification effective on May 1, 1991, shall not be applicable to anyone who has retired prior to such date. Commencing with retirements occurring on or after January 1, 1993, the delayed retirement benefit shall be calculated on a pro rata basis using full months of additional service. This section is subject to Internal Revenue Service limitations found in section 102-207.

(b) Delayed retirement survivor benefits for spouse. If a retirant who was receiving or was entitled to receive at the time of death a delayed retirement benefit as a result of accumulation of additional active service, as provided for in this section dies, the surviving spouse and/or alternate payee shall receive 66 percent of the benefit paid which includes rank escalation, until death. The total benefit payable to the surviving spouse and the alternate payee shall not exceed 66 percent of the benefit, which includes rank escalation, payable to the retirant.

(c) Delayed retirement survivor benefits for children. Any former member receiving a delayed retirement pension benefit who shall die leaving no surviving spouse, but leaving a child or children under the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code, such child or children shall receive the benefit calculated in accordance with subsection (b) of this section. Such benefits shall be payable in equal shares to the child or children then surviving, or to their guardians. If the benefit or some portion of the benefit has been disposed of under an approved domestic relations order, then the total benefit payable to the children combined with the amount payable to the alternate payee shall equal 66 percent of the benefit paid to the deceased, and the 66 percent of the benefit of the deceased shall continue to be paid in equal shares to the surviving child or children under the age of 18 or under the age of 24 years if a full-time student as defined by the IRS code. Upon attaining the age of 18 years, or 24 years if a full-time student as defined in the IRS code, each child's entitlement to his or her share of the 66 percent of the benefit of the deceased shall terminate and cease to be paid and the remaining children's share shall be adjusted so that 66 percent of the benefit of the deceased is paid equally as between the child or children.

3. Vested retirement

(a) Vested pension benefits. Under this article, any member who shall leave the service of the city prior to becoming eligible to receive a pension for any reason, the member having accumulated less than five years of credited service at the time of termination, shall be entitled to receive a refund of the member's total contribution to the fund, without interest, theretofore made to the fund. If the member has accumulated five or more years of credited service at the time of termination, the member may elect to receive deferred monthly pension benefits, payable at such time as the member would have been eligible to receive pension benefits for longevity of service and age (normal retirement), if employment had not been terminated. Members electing to receive vested monthly pension benefits must make a written application to the board within 60 days after termination. Absent such application, it shall be presumed that the terminated member has elected to have his or her contribution refunded. Receipt of funds pursuant to this provision shall be conditioned upon the signing of a statement to be filed with the city evidencing such an election and acknowledging that the member has no further rights to any other benefits provided for by either the city or the retirement fund. Such vested pension benefit shall be a sum of money equal to the number of years of credited service or fractional portion thereof, multiplied by two percent and the product thereof multiplied by the current (rank escalation) highest monthly base salary paid for that rank or grade held by such former member at the time of termination of employment plus the proportional annual longevity pay and longevity credit earned by the member prior to January 1, 2005; provided, however, that such vested pension benefit sum shall in no event exceed 40 percent of the current (rank escalation) highest monthly base salary, plus longevity pay and longevity credit, paid for the rank held by such former member at the time of termination of employment with the department. For purposes of this section the term "current

Table 16 - Summary of Benefit Provisions (Continued)

highest monthly base salary" shall mean at the time of the issuance of the check.

(b) Vested interest survivor benefit; calculation for spouse. Any former member who is receiving vested interest pension benefits and who dies leaving a surviving spouse and/or alternate payee, such surviving spouse and/or alternate payee, shall be entitled to receive one-half of such vested interest pension benefits which includes rank escalation theretofore paid to the deceased. In no event shall the total benefit payable to the surviving spouse and alternate payee exceed one-half of the benefit paid to the deceased member. Such payment(s) shall continue monthly until the surviving spouse or alternate payee dies.

(c) Vested interest survivor benefit; calculation for children. Any former member receiving a vested interest pension benefit who shall die leaving no surviving spouse, but leaving children under the age of 18 years, or under the age of 24 years if full-time students as defined by the IRS code, such children shall receive the vested interest pension benefit calculated in accordance with subsection (b) of this section. Such benefits shall be payable in equal shares to the children then surviving, or to their guardian. If the benefit or some portion of the benefit has been disposed of under an approved domestic relations order, then the total amount payable to the child(ren) combined with the amount payable to the alternate payee shall equal one-half of the vested interest pension benefits theretofore paid to the deceased, and such vested interest pension shall continue to be paid in equal shares to the surviving children under the age of 18, or under the age of 24 years if full-time students as defined in the IRS code. Upon attaining the age of 18 years, or 24 if a full-time student as defined in the IRS code, each child's entitlement to his or her share of the vested interest pension benefits shall terminate and cease to be paid and the remaining children's share shall be adjusted so that the vested interest pension benefit is paid equally as between the children.

(d) Vested interest death benefit; contribution refund. Any former member who shall have elected to leave the contribution in the pension fund and who would be otherwise eligible to receive a vested interest benefit, but who dies prior to attaining the required age and service years, had he or she remained a member of the department, and who leaves a surviving spouse or a child or children under the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code, at the time of his or her death, such surviving spouse shall be entitled to receive the percentage of the deceased's actual contribution to the pension fund not previously disposed of under an approved domestic relations order to an alternate payee in one lump sum. If there is an alternate payee, such alternate payee shall receive in one lump sum, the percentage of the deceased member's benefit as provided for under the approved domestic relations order. If there is no surviving spouse, the child or children under the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code, surviving the deceased shall receive the actual contribution to the pension fund not previously distributed to an alternate payee pursuant to an approved domestic relations order, to be paid in equal shares to the child or children surviving him or her or to their guardian, in one lump sum. Such surviving spouse, alternate payee, or child or children under the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code, of the deceased former member may, at his or her option, elect to leave their share of such former member's contribution, to which the survivor is entitled under this subsection, in the retirement fund up to the date when the deceased former member would have attained the required age and credited service for normal retirement; and if the surviving spouse, alternate payee, or child so elects, he or she shall be entitled to the benefits provided in subsection (b) of this section from and after the normal retirement date.

4. Severance Benefit

(a) Generally. Effective September 30, 1989, any member who shall leave the service of the city through other than a disability, after meeting the 20-year service requirement, regardless of age, shall be entitled to receive a monthly benefit equal to 49 percent of the current (rank escalation) highest monthly base salary paid for the rank held by such former member at the time of termination of employment with the department plus 49 percent of the annual longevity pay and longevity credit earned by the member prior to January 1,2005. This benefit is to commence upon leaving active duty and is in lieu of any other retirement benefits as described in this article. Such monthly pension shall be paid regardless of income or earnings which the retirant receives from any other source.

(b) Survivor benefit; calculation for spouse. If a retired firefighter dies, the surviving spouse and/or alternate payee shall receive, until death, a monthly pension. The total benefit payable to the surviving spouse and the alternate payee shall not exceed 66 percent of the benefit, which includes rank escalation, paid to the deceased for that rank.

(c) Survivor benefit; calculation for children. Any member receiving a severance benefit who shall die leaving no surviving spouse, but leaving a child or children under the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code, such child or children shall receive the severance benefit calculated in accordance with subsection (b) of this section. Such benefits shall be payable in equal shares to the child or children then surviving, or to their guardians. If the benefit or some portion of the benefit has been disposed of under an approved domestic relations order, then the total amount payable to the child(ren) combined with the amount payable to the alternate payee shall equal 66 percent of the severance benefit, which includes rank escalation, theretofore paid to the deceased, and the severance benefit shall continue to be paid in equal shares to the surviving child or children under the age of 18 years or under the age of 24 years if a full-time student as defined by the IRS code. Upon attaining the age of 18 years or 24 years if a full-time student as defined in the IRS code, each child's entitlement to his or her share of the severance benefit shall terminate and cease to be paid and the remaining children's share shall be adjusted so that the severance benefit is paid equally as between the child or children.

Table 16 - Summary of Benefit Provisions (Continued)

5. Pre-1980 Disabilities

(a) The retirement association has promulgated rules and regulations which provide that the board retains jurisdiction to adjudicate applications for permanent disabilities where the causation of the disability occurred prior to 1980. The board recognizes this jurisdiction and will act accordingly if an application is received which meets the criteria of a pre-1980 disability. If a permanent disability is granted, the benefit shall be 50 percent of the current (rank escalation) highest monthly base salary, plus longevity pay and longevity credit, paid for the rank held by such former member at the time of termination of employment with the department.

(b) Survivor benefit; calculation for spouse. If a member who is receiving a temporary or permanent disability pension from the board dies, the surviving spouse and/or an alternate payee shall receive, until death, a monthly pension. The total benefit payable to the surviving spouse and the alternate payee shall not exceed 66 percent of the benefit, which the member would have been eligible to receive but for his or her death, e.g., normal or delayed retirement.

(c) Survivor benefit; calculation for children. Any member receiving a temporary or permanent disability benefit from the board who shall die leaving no surviving spouse, but leaving children under the age of 18 years, such children shall receive the disability benefit calculated in accordance with subsection (j) of this section. Such benefits shall be payable in equal shares to the children then surviving, or to the children's guardian; if the benefit or some portion of the benefit has been disposed of under an approved domestic relations order, then the total amount payable to the child(ren) combined with the amount payable to the alternate payee shall equal 66 percent of the disability benefit, which includes rank escalation, theretofore paid to the deceased, and the disability benefit shall continue to be paid in equal shares to the surviving children under the age of 18 years, each child's entitlement to his or her share of the disability benefit shall terminate and cease to be paid and the remaining children's share shall be adjusted so that the disability benefit is paid equally as between the children.

E. Cost of Living Adjustment (COLA)

Benefits are increased in proportion to pay for rank at retirement. Members will receive an increase based on the larger of CPI-U or the larger of the pay increase for the rank at retirement for the year.

F. Deferred Retired Option Plan (DROP)

A member may elect to participate in the DROP after reaching eligibility for normal or delayed retirement. A member can continue to work while participating in the DROP, but must terminate employment within 5 years of entry into the DROP. The member's percentage of retirement benefits is frozen at the time of entry into the DROP. The monthly payments that begin at entry into the DROP are accumulated until the member terminates service, at which time the DROP accumulated benefits can be paid as a lump sum, if desired. The member may elect to continue to defer receipt of the monthly payments upon terminating service to a future date but no later than April 1 of the calendar year following the calendar year in which the member attains age 70 1/2. The amount of the deferred payments shall be credited with investment earnings and losses at the same rate as other assets in the Fire and Police Member's Benefit Fund. Effective March 1, 2003, the member shall self-direct the investments of their DROP funds.

G. Funeral Expenses

When an active or retired member dies, the board shall appropriate from the fund a sum not exceeding $1,000.00 to the surviving spouse or family or other person paying such expenses for the purpose of assisting the proper burial of the deceased member.

Table 17 - Definition of Terms

1. Actuarial Cost Method

   A method for determining the actuarial present value of future benefits and allocating such value to time periods in the form of a normal cost and an actuarial accrued liability.

2. Present Value of Future Benefits

   This is computed by projecting the total future benefit cash flow from the Plan, using actuarial assumptions, and then discounting the cash flow to the valuation date.

3. Normal Cost

   Computed differently under different actuarial cost methods, the normal cost generally represents the value of the portion of the participant's anticipated retirement, termination, and/or death and disability benefits accrued during a year. Once all active members are retired, the Normal Cost is $0.

4. Actuarial Accrued Liability

   Computed differently under different actuarial cost methods. Generally actuarial accrued liability represents the value of the portion of the participant's anticipated retirement, termination, and/or death and disability benefits accrued as of the valuation date.

5. Entry Age Actuarial Cost Method

   A method under which a participant's actuarial present value of future benefits is allocated on a level basis over the earnings of the participant between his/her entry into the Plan and his/her assumed exit.

6. Unfunded Actuarial Accrued Liability

   The difference between total actuarial present value of future benefits over the sum of the tangible assets of the Plan and the actuarial present value of the members' future normal costs. The Plan is underfunded if the difference is positive and overfunded if the difference is negative.

7. Actuarial Value of Assets

   The value of cash, investments, and other property belonging to the Plan, as valued by the actuary for purposes of the actuarial valuation.

8. Actuarial Gain or Loss

   From one valuation to the next, if the experience of the plan differs from that anticipated by the actuarial assumptions, an actuarial gain or loss occurs. For example, an actuarial gain would occur if the assets in the trust had a yield of 12% based on actuarial value, while the assumed yield on the actuarial value of assets was 6.50%.

Table 17 - Definition of Terms (Continued)

9. Required Contribution

Actuarially determined contribution that satisfies Board and Statutory requirements.