FIRE AND POLICE PENSION ASSOCIATION
AURORA OLD HIRE POLICE 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 Police 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 $4,164,773 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 Police 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.

Fiscal Year (FY)	Required Contribution - Current Financing Objectives		
	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	$4,164,773	$4,164,773	$4,164,773
2025 & 2026	$4,164,773	$4,164,773	$4,164,773

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 Police 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.

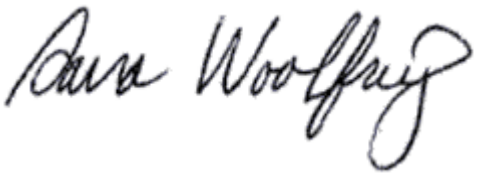
The supporting schedules in this report were prepared by the actuaries and can be used for completing the actuarial section of the Comprehensive Annual Financial Report. To the best of our knowledge, the supporting schedules fully and fairly disclose the actuarial conditions of the plan.

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
Senior Consultant

Joseph Newton, FSA, EA, MAAA
Pension Market Leader

Executive Summary

Item	January 1, 2022	January 1, 2020
	(1)	(2)
Membership		
• Number of:		
- Active members	0	0
- Members in DROP	1	1
- Disabled members	5	6
- Retired members	110	116
- Beneficiaries	25	23
- Total	141	146
• Annualized payroll supplied by FPPA	$ 0	$ 0
• Annualized monthly benefits paid	$ 10,556,961	$ 10,387,202
Assets		
• Market value	$ 100,182,490	$ 92,588,875
• Actuarial value	94,574,551	93,098,162
• Return on market value - Prior year	11.7%	12.8%
• Return on market value - Prior year minus 1	10.2%	0.1%
• Average return on actuarial value	7.6%	6.7%
• Contribution for prior year	$ 4,164,773	$ 4,164,773
• Contribution for prior year minus 1	$ 4,164,773	$ 3,906,280
• Ratio of actuarial value to market value	94.4%	100.6%
Actuarial Information		
• Actuarial accrued liability	$ 143,904,518	$ 148,197,787
• Unfunded actuarial accrued liability/(surplus)	49,329,967	55,099,625
• Funded ratio	65.7%	62.8%
Required Contribution		
• For year ending December 31, 2023	$ 4,164,773	$ 4,164,773
• For year ending December 31, 2024	$ 4,164,773	$ 4,164,773

Table of Contents

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 $4,164,773. 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 $4,164,773 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% - 65.72%) * $10,490,592 + $43,883 = $3,640,058

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	$ 138,237,660	$ 141,987,741
	b. Disabled members	3,731,837	4,297,608
	c. Members in DROP	1,935,021	1,912,438
	d. Active members	0	0
	e. Total	$ 143,904,518	$ 148,197,787
2.	Actuarial value of assets	$ 94,574,551	$ 93,098,162
3.	Unfunded actuarial accrued liability (UAAL)/(surplus) (1e. - 2.)	$ 49,329,967	$ 55,099,625
4.	Funded ratio	65.72%	62.82%
5.	Contribution level current biennium (2021-2022)	$ 4,164,773	$ 4,164,773
6.	Current Benefits	$ 10,490,592	$ 10,326,919
7.	Administrative Expenses	$ 43,883	$ 50,890
8.	Contribution Threshold [(100% - 4) x 6 + 7]	$ 3,640,058	$ 3,890,438
9.	Contribution Threshold as % of Current Contribution [8 / 5]	87%	93%
10.	**Required Contribution for Upcoming Biennium**	**$ 4,164,773**	**$ 4,164,773**

Outcome: Conditions to increase or decrease contributions not met. Continue annual funding of $4,164,773.

Table 2 - Change in UAAL

1.	Unfunded actuarial accrued liability (UAAL) as of January 1 of prior valuation year	$	55,099,625
2.	Benefit modifications from prior valuation		0
3.	Total normal cost for FY2020 & FY2021		0
4.	Contributions less administrative expenses during FY2020		(4,120,855)
5.	Contributions less administrative expenses during FY2021		(4,120,925)
6.	Interest at 6.50%		6,851,328
7.	Expected UAAL as of this valuation (sum of 1. to 6.)	$	53,709,173
8.	Actual UAAL at end of period	$	49,329,967
9.	Actuarial gain/(loss) for the period (7. - 8.)	$	4,379,206
	SOURCE OF GAINS/(LOSSES)		
10.	Asset gain/(loss) (See Table 7)	$	2,119,465
11.	Salary/rank liability gain/(loss) for the period	$	1,862,700
12.	Assumption gain/(loss) for the period	$	0
13.	Net liability gain/(loss) for the period (9. - 10. - 11. - 12.)	$	397,041

Table 3 - Actuarial Experience

		2022	2020	2018	2016	2014	2012	2010
1.	Number of members							
	a. Active	0	0	1	1	1	1	1
	b. Retired	110	116	121	122	128	138	136
	c. DROP	1	1	0	0	0	0	2
	d. Beneficiaries	25	23	19	18	16	9	9
	e. Disabled	5	6	6	6	6	7	7
	f. Total	141	146	147	147	151	155	155
2.	Covered payroll	$ 0	$ 0	$ 111,083	$ 111,083	$ 100,856	$ 99,532	$ 98,936
3.	Average compensation	$ 0	$ 0	$ 111,083	$ 111,083	$ 100,856	$ 99,532	$ 98,936
4.	Based on granting full rank escalation							
	a. Normal cost	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	b. Accrued liability	143,904,518	148,197,787	135,680,618	131,482,930	120,359,988	126,318,024	124,458,499
	c. Actuarial value of assets	94,574,551	93,098,162	92,941,758	93,116,832	92,031,605	91,220,252	96,468,415
	d. Unfunded liability	49,329,967	55,099,625	42,738,860	38,366,098	28,328,383	35,097,772	27,990,084
	e. Remaining amortization period	N/A	N/A	20	20	20	20	20
	f. Funded ratio	65.7%	62.8%	68.5%	70.8%	76.5%	72.2%	77.5%
5.	Required contribution							
	a. Amount	$ 4,164,773	$ 4,164,773	$ 4,164,773	$ 3,906,280	$ 2,612,565	$ 3,367,555	$ 2,872,439
	b. Per member	29,537	28,526	28,332	26,573	17,302	21,726	18,532

Table 4 - Reconciliation of Net Plan Assets

		Year Ending 12/31/2021 (1)	12/31/2020 (2)
1.	Market value of assets at beginning of year	$ 95,507,430	$ 92,588,875
2.	Revenue for the year		
a.	Plan direct inflows		
i.	Employer contributions	$ 4,164,773	$ 4,164,773
ii.	State contributions	0	0
iii.	Affiliations	0	0
iv.	Plan directed expenses	(9,524)	(8,951)
v.	Total	$ 4,155,249	$ 4,155,822
b.	Allocated income		
i.	Interest	$ 577,513	$ 609,523
ii.	Dividends	209,093	213,110
iii.	Other Income	275,829	299,909
iv.	Net change accrued income	(24,692)	(32,214)
v.	Unrealized gain/(loss)	4,350,909	4,469,117
vi.	Realized gain/(loss)	6,124,956	4,196,523
vii.	Total	$ 11,513,608	$ 9,755,968
c.	Total Revenue (2a. + 2b.)	$ 15,668,857	$ 13,911,790
3.	Expenditures for the year		
a.	Plan direct outflows		
i.	Net benefits	$ (10,275,826)	$ (10,290,521)
ii.	Refunds	0	0
iii.	Total	$ (10,275,826)	$ (10,290,521)
b.	Allocated expense		
i.	Investment expenses	$ (683,647)	$ (667,747)
ii.	Directed plan expenses	(740)	(4,024)
iii.	Allocated fees and expenses	(33,584)	(30,943)
iv.	Total allocated expenditures	$ (717,971)	$ (702,714)
c.	Total expenditures (3a. + 3b.)	$ (10,993,797)	$ (10,993,235)
4.	Increase/(Decrease) in net assets (2c. + 3c.)	$ 4,675,060	$ 2,918,555
5.	Market value of assets at end of year (1. + 4.)	$ 100,182,490	$ 95,507,430

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	$ 93,324,976	$ 93,098,162
2. Cash flow for the year		
a. Contributions	$ 4,164,773	$ 4,164,773
b. State contributions	0	0
c. Affiliation contributions	0	0
d. Benefit payments	(10,275,826)	(10,290,521)
e. Administrative and other expenses	(43,848)	(43,918)
f. Net cash flow	$ (6,154,901)	$ (6,169,666)
3. Expected investment earnings	$ 5,866,089	$ 5,850,866
4. Expected actuarial value of assets at end of year	$ 93,036,164	$ 92,779,362
5. Actual market value of assets at end of year	$ 100,182,490	$ 95,507,430
6. Excess earnings/(shortfall)	$ 7,146,326	$ 2,728,068
7. Excess earnings/(shortfall) recognized (Table 6, Item 6)	$ 1,538,387	$ 545,614
8. Final actuarial value of assets (Item 4 + Item 7)	$ 94,574,551	$ 93,324,976

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	(509,287)
d. Current year - 1	2,182,454	0
e. Total	$ 2,182,454	$ (509,287)
2. Current year (Table 5, Item 6 - Table 6, Item 1)	$ 4,963,872	$ 3,237,355
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	509,287
d. Current year - 1	0	0
e. Current year	0	(509,287)
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	2,182,454	0
e. Current year	4,963,872	2,728,068
f. Total	$ 7,146,326	$ 2,728,068
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	1,636,841	0
e. Current year	3,971,098	2,182,454
f. Total	$ 5,607,939	$ 2,182,454
6. Total amount recognized in actuarial value of assets (Item 3.f + Item 4.f. - Item 5.f.)	$ 1,538,387	$ 545,614

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

		January 1, 2022 (1)	January 1, 2020 (2)
1.	Actuarial assets, prior valuation	$ 93,098,162	$ 92,941,758
2.	Total contributions since prior valuation	$ 8,329,546	$ 8,071,053
3.	Benefits and refunds since prior valuation	$ (20,566,347)	$ (19,911,140)
4.	Administrative and other expenses since prior valuation	$ (87,766)	$ (101,779)
5.	Assumed net investment income at 6.50%		
	a. Beginning assets	$ 12,496,101	$ 14,464,061
	b. Contributions	550,219	606,622
	c. Benefits, refunds and administrative expenses	(1,364,829)	(1,520,175)
	d. Total	$ 11,681,491	$ 13,550,508
6.	Expected actuarial assets (1. + 2. + 3. + 4. + 5.)	$ 92,455,086	$ 94,550,400
7.	Actual actuarial assets, this valuation	$ 94,574,551	$ 93,098,162
8.	Net asset gain/(loss) since prior valuation (7. - 6.)	$ 2,119,465	$ (1,452,238)
		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	$ 89,956,249	$ 121,678,839	$ 31,722,590	73.9%	$ 859,811	3689%
January 1, 2006	98,845,438	116,106,755	17,261,317	85.1%	241,569	7146%
January 1, 2008	111,931,255	125,162,192	13,230,937	89.4%	93,795	14106%
January 1, 2010	96,468,415	124,458,499	27,990,084	77.5%	98,936	28291%
January 1, 2012	91,220,252	126,318,024	35,097,772	72.2%	99,532	35263%
January 1, 2014	92,031,605	120,359,988	28,328,383	76.5%	100,856	28088%
January 1, 2016	93,116,832	131,482,930	38,366,098	70.8%	111,083	34538%
January 1, 2018	92,941,758	135,680,618	42,738,860	68.5%	111,083	38475%
January 1, 2020	93,098,162	148,197,787	55,099,625	62.8%	0	N/A
January 1, 2022	94,574,551	143,904,518	49,329,967	65.7%	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	$ 2,612,565	$ 2,612,565	100%
December 31, 2016	2,612,565	2,612,565	100%
December 31, 2017	3,906,280	3,906,280	100%
December 31, 2018	3,906,280	3,906,280	100%
December 31, 2019	4,164,773	4,164,773	100%
December 31, 2020	4,164,773	4,164,773	100%
December 31, 2021	4,164,773	4,164,773	100%
December 31, 2022	4,164,773	N/A	

Table 10 - Cash Flow Analysis

Year Ending December 31,	Contributions for the Year	Expenditures During the Year			External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
		Benefit Payments **	Expenses	Total			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2011	$ 2,872,439	$ (8,312,779)	$ (696,299)	$ (9,009,078)	$ (6,136,639)	$ 82,184,060	(7.5%)
2012	2,872,439	(8,622,322)	(790,004)	(9,412,326)	(6,539,887)	85,613,006	(7.6%)
2013	3,367,555	(8,609,341)	(805,619)	(9,414,960)	(6,047,405)	92,866,994	(6.5%)
2014	3,367,555	(8,501,414)	(165,251)	(8,666,665)	(5,299,110)	93,737,966	(5.7%)
2015	2,612,565	(8,898,795)	(147,530)	(9,046,325)	(6,433,760)	89,019,202	(7.2%)
2016	2,612,565	(9,096,225)	(152,176)	(9,248,401)	(6,635,836)	86,937,519	(7.6%)
2017	3,906,280	(9,526,513)	(38,897)	(9,565,410)	(5,659,130)	93,646,156	(6.0%)
2018	3,906,280	(9,842,538)	(49,069)	(9,891,607)	(5,985,327)	87,737,608	(6.8%)
2019	4,164,773	(10,068,602)	(52,710)	(10,121,312)	(5,956,539)	92,588,875	(6.4%)
2020	4,164,773	(10,290,521)	(43,918)	(10,334,439)	(6,169,666)	95,507,430	(6.5%)
2021	4,164,773	(10,275,826)	(43,848)	(10,319,674)	(6,154,901)	100,182,490	(6.1%)
2022*	4,164,773	(10,490,592)	(43,883)	(10,534,475)	(6,369,702)	100,117,634	(6.4%)
2023*	4,164,773	(10,697,905)	(44,980)	(10,742,885)	(6,578,112)	99,833,379	(6.6%)
2024*	4,164,773	(10,895,282)	(46,105)	(10,941,387)	(6,776,614)	99,325,694	(6.8%)

* 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	1
b.	Total payroll	$ 0	$ 0	$ 111,083
c.	Average annual salary	$ 0	$ 0	$ 111,083
d.	Average age	N/A	N/A	63.0
e.	Average service	N/A	N/A	41.9
2.	Members in DROP			
a.	Number	1	1	0
b.	Total annual benefits	$ 108,210	$ 102,526	$ 0
c.	Average annual benefit	$ 108,210	$ 102,526	$ N/A
d.	Average age	67.0	65.0	N/A
3.	Service retirees			
a.	Number	110	116	121
b.	Total annual benefits	$ 8,814,821	$ 8,771,245	$ 8,573,957
c.	Average annual benefit	$ 80,135	$ 75,614	$ 70,859
d.	Average age	74.0	72.1	70.4
4.	Disabled retirees			
a.	Number	5	6	6
b.	Total annual benefits	$ 286,309	$ 347,346	$ 326,697
c.	Average annual benefit	$ 57,262	$ 57,891	$ 54,450
d.	Average age	74.4	75.2	73.2
5.	Beneficiaries			
a.	Number	25	23	19
b.	Total annual benefits	$ 1,347,621	$ 1,166,085	$ 884,337
c.	Average annual benefit	$ 53,905	$ 50,699	$ 46,544
d.	Average age	75.4	74.9	72.3

Table 12 - Summary of Retirees by Age and Type

	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	1	7,256	0	0	1	7,256
55-59	0	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	2	4,298	0	0	2	4,298
65-69	15	6,700	0	0	3	4,863	1	9,018	19	6,532
70-74	44	6,666	3	4,447	6	3,828	0	0	53	6,219
75-79	37	6,979	1	4,419	4	4,591	0	0	42	6,691
Greater than 80	14	5,896	1	6,101	9	4,503	0	0	24	5,382
All	110	$ 6,678	5	$ 4,772	25	$ 4,492	1	$ 9,018	141	$ 6,239

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	147	$ 6,498,180	N/A	$ 44,205	N/A
2006	10	$ 575,155	3	$ 126,190	154	$ 6,947,145	6.9%	$ 45,111	60.1
2008	5	$ 1,053,234	2	$ 91,481	157	$ 7,908,898	13.8%	$ 50,375	61.9
2010	1	$ 419,444	4	$ 135,103	154	$ 8,193,239	3.6%	$ 53,203	63.6
2012	0	$ 441,522	0	$ 0	154	$ 8,634,761	5.4%	$ 56,070	65.6
2014	7	$ 520,811	11	$ 589,940	150	$ 8,565,632	(0.8%)	$ 57,104	67.2
2016	3	$ 849,766	7	$ 321,898	146	$ 9,093,500	6.2%	$ 62,284	68.8
2018	1	$ 776,530	1	$ 85,039	146	$ 9,784,991	7.6%	$ 67,020	70.8
2020	7	$ 1,082,734	7	$ 480,523	146	$ 10,387,202	6.2%	$ 71,145	72.6
2022	5	$ 795,976	10	$ 626,217	141	$ 10,556,961	1.6%	$ 74,872	74.2

* 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	-6%	-6%
Duration of the actuarial accrued liability	10.2	10.7

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. There is one active member remaining in this closed plan.

B. Compensation

Base salary including longevity pay plus shift differential if applicable.

C. Contribution Rate

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

D. 1. Normal Retirement

Any member of the police department other than a new hire police officer, as defined in section 101.27 of the FPPA rules and regulations, who has met the eligibility requirement for normal retirement, e.g., 20 years of credited service regardless of age, shall be eligible to receive a service retirement monthly pension equal to 40 percent of the current (rank escalation) highest salary paid for that rank or grade held at the time of retirement. Members retiring for the first time after May 1, 1991, shall receive 45 percent instead of 40 percent.

2. Delayed Retirement

(a) Members retiring prior to *May 1, 1991*. In addition to normal retirement benefits under this article, any member who elects to remain on active service past 20 years shall receive two percent for each year of service calculated fractionally in accordance with section 102-246 to a maximum of 30 years and 60 percent of the highest current salary paid for that rank or grade held at the time of retirement. Thereafter and so long as the member is in retirement there shall be added to the amount of pension, as stated above, a rank escalator. This rank escalator shall consist of multiplying the percentage, which may include additional increases of two percent up to 60 percent, by any increase in the highest current salary earned for the retiree's grade or rank and by one-half of any longevity pay granted or paid to the rank or grade last occupied by the retirant immediately prior to retirement.

(b) Members retiring after *May 1, 1991*. For members who receive delayed retirement benefits for the first time after *May 1, 1991*, the following provisions apply. Any member who reaches 20 years of service prior to *January 1, 1990*, shall receive two percent per year from the member's

20th year of service until *January 1, 1990*; subsequent to *January 1, 1990*, members shall receive four percent per year to a maximum of 74 percent, regardless of years of service. Any member who reaches 20 years of service after *January 1, 1990*, shall receive four percent per year for each year over 20 years to a maximum of 74 percent, regardless of years of service. These percentages shall be subject to the same qualifying language regarding fractional and rank escalation calculation methodology found in subsection (a) of this section.

c) Longevity component of benefit. In no case shall the longevity component of the pension benefit granted under this section exceed one-half of the maximum longevity benefit payable regardless of the total years of credited service.

E. Termination Benefit

Vested Retirement. If the member has accumulated five or more years of credited service with the city at the time of termination, the member may elect to receive deferred monthly pension benefits, payable at such time as he or she would have been eligible to receive pension benefits for longevity of service (normal retirement) had employment not been terminated. Such vested pension benefit shall be a sum of money equal to the total number of years of credited service or fractional portion thereof, multiplied by two percent and the product thereof multiplied by the monthly salary paid for that rank or grade held by such former member at the time of his or her termination of employment, plus one-half the applicable longevity credit. Anyone who receives a vested benefit for the first time after May 1, 1991, other than those receiving a disability from FPPA as of May 1, 1991, shall receive a multiplier of 2.25 instead of two. The rank escalator benefit is applicable to vested pension benefits for members who started receiving the vested pension benefit before March 5, 1993.

(b) *Special provision for calculation of base amount of vested benefit for members as of January 1, 1993.* For purposes of calculating the vested pension benefit for those members who were on active status as of January 1, 1993, the base monthly salary at the time of separation shall be used. Members who are receiving a vested pension benefit as of January 1, 1993, shall have their vested pension benefit calculated by using the base monthly salary applicable to the date of entitlement to receipt of the benefits.

F. Post Retirement Death Benefit

(a) *Death and survivor benefits for active members.* Under this article, the extent and amount of death and survivor benefits are dependent upon the work status of the member. If the member dies during active or temporary disability status before eligibility for normal or delayed pension benefits, the death and survivor benefits are to be determined by the retirement association in accordance with state law. If an active member is eligible for a normal pension benefit and the

member dies, the pension benefit for the survivor shall be determined in accordance with the provisions of this article which govern benefits payable to the survivor of retirees receiving normal or delayed pension benefits. If a member is retired from active service, the death and survivor benefits are determined by reference to this article.

In accordance with state law, death and survivor benefits are established by state statute and administered by the retirement association from a fund which is solely supported by state contributions. The conditions for receiving and the amounts payable are specified by state law. Upon the death of any member, the board shall forthwith certify any and all information required by the FPPA.

(b) *Death of a member who retired prior to May 1, 1991.* When any retirant or member eligible to retire shall die and leave an alternate payee, spouse, dependent mother or father, or child or children under the age of 18 years surviving, such beneficiaries shall receive a monthly allotment as provided for in this section.

(1) *Definition of a death benefit.* The monthly payment as authorized by the board, of an amount equal to one-fourth of the current (rank escalation) highest monthly salary paid that rank or grade plus longevity which such deceased retirant or deceased member held, multiplied by a fraction with the numerator being the total years of active service, up to a maximum of 30, and the denominator being 20 regardless of whether retirant worked more than 20 years; however, in no case shall the numerator be less than 20.

(2) *Order of succession.* If at the time of death there exists an alternate payee, such alternate payee is entitled to the death benefit provided for under the approved domestic relations order. If at the time of death there exists a surviving spouse, such spouse is entitled to the death benefit not previously disposed of under an approved domestic relations order to an alternate payee as the primary beneficiary. The death of the primary beneficiary, after the commencement of death benefit payments, shall cause the death benefit previously paid to the surviving spouse to be paid to the surviving child(ren), in equal portions, as secondary beneficiary until such child(ren) attains the age of 18 years. If all primary and secondary beneficiaries die or are nonexistent, the death benefit not previously disposed of under an approved domestic relations order to an alternate payee shall be paid to surviving dependent mother and father, if any, in equal portions.

(3) *Minor children.* Regardless of whether the child of the deceased retirant receives death benefits as a secondary beneficiary, such child shall receive until attaining the age of 18 an amount equal to one-eighth of the current (rank escalation) highest monthly salary paid that rank or grade plus longevity, which the deceased retirant or deceased member held, multiplied by the fraction stated in subsection (b)(1) of this section.

The maximum amount of death benefits payable under this subsection shall in no event exceed that amount of pension benefit which the deceased retirant shall have received had he or she survived. The rank escalator benefit, as defined in subsection (b)(1) of this section, shall be applied to both the one-fourth death benefits and the one-eighth minor children death benefits.

(c) *Death of member who retired after May 1, 1991.* When any retirant or member eligible to retire shall die and leave an alternate payee, spouse, dependent mother or father, or child or children under the age of 18 years, or child or children under the age of 24 years, if a full-time student as defined by the IRS code, surviving, such beneficiaries shall receive a monthly allotment as provided for in this section.

(1) *Definition of death benefit.* The surviving spouse shall receive a monthly payment, as authorized by the board, of an amount equal to 75 percent or 100 percent if the surviving spouse has a child under 18 years, or under 24 years, if a full-time student as defined by the IRS code of the benefit, which includes rank escalation, paid the deceased. This benefit shall be reduced by the amount previously disposed of under an approved domestic relations order to an alternate payee.

(2) *Order of succession.* If at the time of death there exists an alternate payee, such alternate payee is entitled to the death benefit provided for under the approved domestic relations order. If at the time of death there exists a surviving spouse, the spouse is entitled to the death benefit not previously disposed of under an approved domestic relations order to an alternate payee as the primary beneficiary. The death of the primary beneficiary, after the commencement of death benefit payments, shall cause 100 percent of the benefit previously paid to the surviving spouse, which includes rank escalation, of the deceased to be paid to the surviving child or children, in equal portions, as secondary beneficiary until such child or children attains the age of 18 years or 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 by the IRS code, each child's entitlement to his or her share of the benefit shall terminate and cease to be paid and the remaining child's share shall be adjusted so that the benefit is paid equally as between the children. If all primary and secondary beneficiaries die or are nonexistent, the death benefit (75 percent) shall be paid to surviving dependent mother and father, if any, in equal portions. This benefit shall be reduced by the amount previously disposed of under an approved domestic relations order to an alternate payee.

The maximum amount of death benefits payable under this subsection shall in no event exceed the amount of pension benefit which the deceased retirant shall have received had he or she survived. The rank escalator benefit, as defined in subsection (b)(1) of this section, shall be applied to all death benefits.

Table 16 - Summary of Benefit Provisions (Continued)

Vested interest death benefit:

(a) Death prior to May 1, 1991; former member. Any former member who is receiving vested interest pension benefits and who dies leaving a surviving spouse, such surviving spouse shall be entitled to receive one-half of such vested interest pension benefits theretofore paid to the deceased. Such payment shall continue monthly until he or she shall die. Any former member receiving a vested interest benefit who shall die leaving no surviving spouse, but leaving a dependent child or children under the age of 18 years, such child or children shall receive one-half of the vested interest pension benefit theretofore paid to the deceased. Such benefit shall be payable in equal shares to the child or children then surviving or to their guardians and one-half of the vested interest pension benefits shall continue to be paid in equal shares to the surviving child or children under the age of 18 years, until the child attains the age of 18 years.

(b) Receipt of vested interest death benefit; death after May 1, 1991; active member as of May 1, 1991. Any surviving spouse of an active member who is receiving this type of benefit for the first time after May 1, 1991, shall be entitled to 75 percent of the death benefit, including rank escalator, of the deceased. Any child shall receive 100 percent of the benefit calculated in the same fashion as a normal death benefit.

(c) *Vested interest death benefits; member.* Any member who shall have elected to leave his or her accumulated contributions 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 or service years, had he or she remained a member of the department, and who leaves a surviving spouse or a dependent child or children under the age of 18 years at the time of his or her death, such spouse shall be entitled to receive the deceased's actual contribution to the pension fund in one lump sum without interest. If there is no surviving spouse, the child or children under the age of 18 years surviving the deceased shall receive the actual contribution of the deceased to the pension fund, to be paid in equal shares to the child or children surviving the deceased, in one lump sum without interest. If there is no surviving spouse or surviving child or children under the age of 18 years, the death benefit contribution shall be payable to the estate of the deceased, if any, and if no heirs survive the deceased, such sum of money shall not escheat to the state, but shall be retained and become a part of the police department "old hire" retirement system.

G. 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-W or the pay increase for the year.

Table 16 - Summary of Benefit Provisions (Continued)

H. 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. Effective March 1, 2003, the member shall self-direct the investments of their DROP funds.

I. Supplemental Monthly Retirement Benefit

Any employee or pension member hired prior to April 8, 1978 who was serving as a commissioned officer on April 1, 2001, shall be entitled to receive a supplemental monthly retirement benefit ("SMRB") in the amount of $200.00, payable upon either entry into DROP or separation from service, increased annually in January, if in payment status, using the annual increase methodology defined in § 102-236 (current rank escalation highest salary). However, such supplemental payments shall only be made following confirmation by the state Fire and Police Pension Association (FPPA) that the plan will be actuarially sound (as required by § 31-30.5-210(2), C.R.S., as amended) and will require no city contributions. SMRB payments shall not be made in the year following release of any FPPA actuarial report that shows that the plan will require city contributions in order to be actuarially sound and payments shall not begin or be resumed until the calendar year following release of an applicable FPPA actuarial report which includes the supplemental payments in the assumptions, finding that the plan is actuarially sound and will require no city contributions. The SMRB shall be payable on an annual or biennial basis in conformity with the city's obligation to contribute or not contribute to the plan as determined annually or biennially based upon an applicable actuarial report. No liability to the plan or to the city will occur for any payments not made under this section, nor shall there be any catch-up for payments not made. Upon the death of a recipient of this supplemental benefit, the benefit shall be payable to the survivor in accordance with, and on the same terms as, section 102-247(c), with the exception that under no condition shall a child(ren) of the retirant or member be entitled to this benefit. The board shall, at its discretion, be authorized to arrange and pay for a special FPPA actuarial report on a calendar year basis in order to facilitate the provisions of this section.

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.

Table 17 - Definition of Terms (Continued)

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%.

9. Required Contribution

Actuarially determined contribution that satisfies Board and Statutory requirements.