

November 9, 2018

The Board of Trustees
City of Roseville Employees Retirement System
Roseville, Michigan

Dear Board Members:

The purpose of the annual actuarial valuation of the City of Roseville Employees Retirement System as of June 30, 2018 is to:

- Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement System,
- Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement System, and
- Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2019.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. Data concerning active members, retirees, beneficiaries and assets was provided by the city. This data has been reviewed for reasonableness, but no attempt has been made to audit such information. The valuation was based on the provisions of the Retirement System as amended through June 30, 2018. The actuarial assumptions used in this valuation are reasonably related to the past experience of the System and represent reasonable expectations of future experience under the System. This report was prepared under the direction of a member of the American Academy of Actuaries who meets the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,



Denise M. Jones
Senior Consultant



Sandra W. Rodwan
Member, American Academy of Actuaries

***City of Roseville
Employees Retirement System***

Actuarial Valuation as of June 30, 2018

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Section One:
Valuation Summary



Purpose of Valuation

The purpose of the annual actuarial valuation of the City of Roseville Employees Retirement System as of June 30, 2018 is to:

- ❖ Compute the liabilities associated with benefits likely to be paid on behalf of current retired and active members of the Retirement System,
- ❖ Compare accrued assets with accrued liabilities to assess the funded condition of the Retirement System, and
- ❖ Compute the City's recommended contribution rate for the Fiscal Year beginning July 1, 2019.

Liabilities and Funded Condition of Retirement System

Accrued liabilities of the Retirement System as of June 30, 2018 were computed to be \$190,828,284. The funding value of accrued assets was \$138,192,403. The ratio of the funding value of accrued assets to accrued liabilities was 72.4%.

Funding Value of Assets

A smoothed market value of assets was used for the June 30, 2018 valuation. This method, which spreads the difference between actual and expected investment return over four years, is the same as the method used for last year's valuation.

Computed City's Contribution Rate

The City's normal cost contribution rate was computed to be 7.57% for General members and 13.03% for Police and Fire members payroll.

The City's total contribution rate was computed to be 32.85% for General members and 38.31% for Police and Fire members. This includes an amortization payment of 25.28% for General members and Police and Fire members.

Retirement System Experience

The aggregate experience of the Retirement System was less favorable than assumed during the year ended June 30, 2018. The primary sources of the unfavorable experience were the recognized rate of investment return on the smoothed funding value of assets which was less than the assumed rate (5.6% vs. 7.5%) and salary increases which were greater than assumed. The investment income during the year exceeded the assumption, but the smoothed funding value includes carryforwards from the prior 3 years.

Assumption and Method Changes

There were no assumption and/or method changes in this valuation.

Benefit Provision Changes

There were no significant benefit provision changes in this valuation.

Participant Data

	<u>6/30/2018</u>		<u>6/30/2017</u>	
	Number	Payroll	Number	Payroll
Active Members				
General	118	\$6,402,810	124	\$6,163,880
Police	68	5,879,954	66	5,620,049
Fire	<u>40</u>	<u>3,331,173</u>	<u>39</u>	<u>2,942,390</u>
Total Active Members	226	15,613,937	229	14,736,319
Retirees and Survivors	369*	\$13,711,667	366**	\$12,462,656

*Includes 2 General and 4 Police/Fire Members in the Deferred Retirement Option Plan.

** Includes 1 General and 6 Police/Fire members in the Deferred Retirement Option Plan.

Financial Data

	<u>06/30/2018</u>	<u>06/30/2017</u>
Funding Value of Assets	\$138,192,403	\$139,364,686
Market Value of Assets	139,401,081	137,318,577

Conclusion

The Retirement System is being funded in accordance with a sound level percent of payroll financing objective.



Section Two:

***Actuarial Calculations –
Funding***



Computed Contribution Rates for The Year Beginning July 1, 2019

The contribution rates shown below are expressed as percents of active member payroll.

The normal cost can be viewed as the long-term on-going cost of the Retirement System. The unfunded actuarial accrued liability was amortized over 16 years. This is a 1 year decrease from the period used last year.

Contribution Recommendation:

	<u>Percents of Payroll</u>	
	<u>General</u>	<u>Police/Fire</u>
Normal Cost		
Regular Retirement	10.39%	17.65%
Pre-retirement Death	1.18	0.70
Disability	1.04	1.84
Withdrawal	<u>3.11</u>	<u>2.42</u>
Total Normal Cost	15.72	22.61
Unfunded Actuarial Accrued Liability	25.28	25.28
Total Computed Contribution	41.00	47.89
Member Portion	8.15	9.58
City's Net Contribution Rate	32.85%	38.31%
City's Dollar Contribution	\$2,208,489	\$3,705,222

Unfunded Actuarial Accrued Liability

	<u>June 30, 2018</u>		<u>June 30, 2017</u>	
	<u>General</u>	<u>Police/Fire</u>	<u>General</u>	<u>Police/Fire</u>
Actuarial Accrued Liabilities	\$68,889,187	121,939,097	\$68,631,932	\$118,624,580
Assets Allocated to Funding	47,307,954	90,892,182	48,563,010	90,791,375
Unfunded Actuarial Accrued Liabilities	\$21,581,233	\$31,046,915	\$20,068,922	\$27,833,205

Recommended City Contributions

Valuation Date June 30	Percent of Valuation Payroll		Dollar Contributions
	General	Police/Fire	
1995	17.85%	20.27%	\$2,305,703
2000	17.72	10.96*	2,208,341
2001	18.64	11.85*	2,449,110
2002	17.56	15.65*	2,813,719
2003	18.03	19.20	3,295,298
2004	20.47	20.23	3,885,102
2005	22.73	18.80	3,938,255
2006	23.54	20.28	4,111,361
2007#	23.65	19.48	4,140,536
2008#@	22.82	19.90	4,160,914
2009	21.84	24.42	4,544,628
2010**	31.11	26.99	5,034,218
2011@	31.08	33.41	5,376,550
2012@	31.66	40.55	5,207,023
2013@	32.91	39.20	5,094,075
2014@	30.09	37.92	4,872,123
2015@	31.10	37.97	5,106,579
2016	30.57	36.16	5,245,221
2017	31.35	36.71	5,332,723
2018	32.85	38.31	5,913,712

#Excluding post-retirement health insurance.

@After changes in benefit provisions and/or actuarial assumptions.

*Net of temporary credit for accrued valuation assets in excess of actuarial accrued liabilities.

**Member contributions increases effective only for FY 11/12 reduced the City’s computed contribution rates to 27.04% for General and 20.41% for Police/Fire, and the dollar amount to \$4,050,676.

History of Assets and Accrued Liabilities

Valuation Date 6/30	Valuation Assets	Actuarial Accrued Liabilities	Funded Ratio	Unfunded Actuarial Accrued Liabilities
1992	\$59,625	\$69,137	92.8%	\$ 4,606
1993	64,653	75,752	85.3	11,099
1994	67,838	80,090	84.7	12,252
1995	70,758	85,608	82.7	14,850
1996	78,957	89,510	88.2	10,553
1997	86,032	92,789	92.7	6,757
1998	97,090	98,592	98.5	1,502
1999	106,123	103,097	102.9	(3,026)
2000	111,153	108,780	102.2	(2,373)
2001	115,009	114,218	100.7	(791)
2002	112,427	117,182	95.9	4,755
2003	109,779	122,849	89.4	13,070
2004	111,328	131,171	84.9	19,843
2005	114,059	135,778	84.0	21,719
2006	119,145	143,792	82.9	24,647
2007	128,047	150,926	84.8	22,879
2008	133,644	158,417	84.4	24,773
2009	131,095	160,689	81.6	29,594
2010	128,488	170,862	75.2	42,374
2011	125,962	174,318	72.3	48,356
2012	121,682	177,578	68.5	55,895
2013	124,769	181,218	68.9	56,449
2014	132,003	182,491	72.3	50,488
2015	135,186	183,739	73.6	48,553
2016	136,876	185,830	73.7	48,954
2017	139,365	187,257	74.4	47,892
2018	138,192	190,828	72.4	52,636

Results shown throughout this report for years prior to 2001 were prepared by the previous actuarial firm.

Aggregate Gain/Loss - Year Ended June 30, 2018

(1) UAAL ^a at start of year	\$47,891,826
(2) Normal cost	3,144,148
(3) Interest accrual	3,827,698
(4) Contributions	6,710,569
(5) Expected UAAL before changes	48,153,103
(6) Benefit Provision Revisions	None
(7) Change from assumption revision	None
(8) Expected UAAL after changes	48,153,103
(9) Actual UAAL	52,677,709
(10) Gain(Loss)	\$(4,524,606)
(11) Percent of AAL ^b	(2.42)%

^a Unfunded Actuarial Accrued Liability.

^b Actuarial Accrued Liability at beginning of year.

Actuarial Balance Sheet June 30, 2018

Actuarial Assets

Accrued Assets		
Assets from system’s financial statements (market value)	\$139,401,081	
Funding value adjustment	<u>(1,208,678)</u>	
Total accrued assets		\$138,192,403
Actuarial present value of expected future		
For normal costs	29,172,520	
For unfunded actuarial accrued liabilities	<u>52,635,881</u>	
		<u>81,828,401</u>
Total Actuarial Present Value of Present and Expected Future Resources		<u><u>\$220,000,804</u></u>

Actuarial Present Values (Liability)

To retirees and beneficiaries		\$134,726,749
To vested terminated members		888,946
To active members		
Allocated to service rendered prior to valuation date	52,144,148	
Allocated to service rendered after valuation date	<u>29,172,520</u>	
		<u>81,316,668</u>
Reserve for DROP accounts		<u>3,068,441</u>
Total Actuarial Present Value of Expected Future Benefit Payments and Reserves		<u><u>\$220,000,804</u></u>

Comments and Conclusion

Comment 1: The aggregate experience of the Retirement System was less favorable than assumed during the year ended June 30, 2018. The primary sources of the unfavorable experience were the recognized rate of investment return on the smoothed funding value of assets which was less than the assumed rate (5.6% vs. 7.5%) and salary increases which were greater than assumed. The investment income during the year exceeded the assumption, but the smoothed funding value includes carryforwards from the prior 3 years.

Comment 2: For the purpose of this valuation we have computed one combined contribution rate for the amortization of unfunded actuarial accrued liability. That combined rate was added to the Normal Cost for each division to determine the total contribution for each division. This eliminates the distortions that can occur due to estimated allocations of the funding value of assets. This results in less fluctuation of the relative employer contribution rates between the General and Police/Fire divisions and is consistent with a level percent of payroll financing approach for each division.

Conclusion: The City is funding Retirement System benefits as they accrue in accordance with a sound level percent of payroll funding objective.

Section Three:

***Retirement System
Benefit Provisions***



Benefit Provision Summary

Service Retirement

(No reduction factor for age)

Eligibility: All General members - any age with 30 or more years of credited service, age 55 with 20 or more years of credited service, or age 60 with 10 or more years of credited service.

Police and Fire members - age 50 with 20 or more years of credited service or age 55 with 10 or more years of service. Police members and Fire members may retire prior to age 50 with 20 or more years of credited service with forfeiture of i) health insurance premiums prior to age 50 and ii) post-retirement escalation.

Annual Benefits:

General, Supervisors, Clerical and Court Clerk members – 2.5% of Final Average Compensation (FAC) times years of credited service earned through 6/30/2012 plus 2.0% of (FAC) times years of credited service earned on or after 7/1/2012. Maximum is 80% of FAC if hired prior to July 1, 1994 or 75% of FAC if hired after July 1, 1994. New hires after 7/1/2012 – 1.5% of FAC times years of credited service up to 75% of FAC (Court – 70% of FAC).

Local 520 members hired prior to 7/1/2012 - 2.8% of FAC times years of credited service earned through 6/30/2012 plus 2.0% of FAC times years of credited service earned on or after 7/1/2012. Maximum is 80% of FAC if hired prior to 1/1/95 or 75% of FAC if hired on or after 1/1/95.

Local 520 members hired on or after 7/1/2012 – 1.5% of FAC times years of credited service. Maximum is 75% of FAC.

COAM Members - 2.8% of FAC times the first 25 years of service, plus 1.5% of FAC times the next four years of service. Maximum is 75%.

POAM members hired prior to 7/1/2012 - 2.8% of FAC times the first 25 years of service plus 1.5% of FAC times the next four years to 29 years of service. Maximum is 75%

POAM members hired on or after July 1, 2012 – 2.5% of FAC times all years of service. Maximum is 70%.

Fire members hired prior to 1/1/2011 - 2.8% of FAC times the first twenty-five (25) years of service for service earned through 10/31/2013 and 2.5% times years of service earned on or after 11/1/2013. 75% of FAC maximum.

Fire members hired on or after January 1, 2011, 2.5% of FAC times all years of service. 70% of FAC maximum.

Type of Final Average Compensation: Clerical members - Average of highest 5 consecutive annual compensations contained within last 10 years preceding retirement. Some lump sum payments included.

Supervisors, Court Clerks, and General members - Average of the highest 3 consecutive annual compensations contained within the last 5 years preceding retirement. Some lump sum payments included. For Supervisors - Any four consecutive quarters constitutes a year and years do not need to be consecutive.

Local 520 members - Average of any 3 years out of the last 5 years, the years do not need to be consecutive.

Command, Police members and Fire members - Average of highest 3 annual compensations contained within last 10 years preceding retirement. Any 4 consecutive quarters will constitute a year. The years need not be consecutive. Some lump sum payments included.

Deferred Retirement Option Program (DROP)

Eligibility: Supervisors are eligible at age 55 with 25 years of service or with 30 years of service regardless of age. Police are eligible at age 50 with 25 years of service. Fire members are eligible at age 50 with 20 years of service.

Supervisors DROP term is for three years. Command DROP has a 7 year maximum for employees who were in the Command Officer's union as of 12/31/2016 or prior. Police Patrolman hired prior to July 1, 2012, has a 2 year maximum. Fire has a 3 year maximum. New Patrol hired after 7/1/2012 are not eligible and officers who join COAM union on or after 01/01/2017 are not eligible for DROP.

Command and Fire members electing DROP will continue to contribute at the current member contribution rate of 9% and 10% respectively. Patrolman will contribute 10%. These contributions and interest earned on these contributions will not be eligible for Annuity Withdrawal.

Deferred Retirement (Vested benefit)

Eligibility: Termination of City employment with 10 or more years of credited service.

Annual Benefit: Accrued regular retirement amount payable beginning at age 55 with 20 years of service or age 60 with 10 years of service for all General members, and age 50 with 20 years of service or age 55 with 10 years of service for Police and Fire.

Duty Disability Retirement

Eligibility: Total and permanent disability incurred in line of duty with the City for which Worker's Compensation is paid.

Annual Benefit: General members - Accrued regular retirement amount; minimum to age 55, 15% of FAC; minimum at age 55, sum of 10% of first \$4,200 of FAC, plus 15% of FAC in excess of \$4,200. Police and Fire – minimum to age 50, 15% of FAC. Command, Police and Fire disability retirees are not eligible for annuity withdrawal.

For all members, upon termination of Worker's Compensation period, or attainment of age 65, if earlier, service credit is increased to include years in receipt of Worker's Compensation. Minimum - 50% of FAC.

Non-Duty Disability

Eligibility: Total and permanent disability after 10 years of credited service.

Annual Benefit: All General members: Accrued regular retirement amount, minimum 15% of FAC. Police and Fire - Accrued regular retirement amount. Command, Police and Fire disability retirees are not eligible for annuity withdrawal.

Duty Death in Service Survivor's Pension

Eligibility: Death incurred in line of duty with the City, or death of disability retiree as a result of same injury or disease for which he was retired; Worker's Compensation is being paid as a result of the death.

Annual Benefit: Termination of Worker's Compensation period, an amount equal to Worker's Compensation payments are continued to unmarried spouse, unmarried children under age 18, and parents who were in receipt of Worker's Compensation as a result of the death. Command and Police members, benefit is continued until remarried or death.

Minimum amount to spouse of a deceased Police or Fire member may continue after age 18 if Board finds child to be incapable of self-support due to a disability which began prior to attainment of age 18. Accumulated contributions are refunded.

Non-Duty Death in Service Survivor's Pension

Eligibility: Any age with 10 or more years of credited service.

Annual Benefit: Option II (100% survivor) actuarial equivalent of accrued regular retirement amount to elected beneficiary.

Post-Retirement Cost-of-Living

Eligibility: Command members, Police members and Fire members with effective dates of retirement on or after July 1, 1977 and July 1, 1976, respectively, and all General members with effective dates of retirement on or after January 1, 1993 are eligible. Command, Police and Fire members who begin normal retirement prior to age 50 forfeit post-retirement cost-of-living adjustments.

Annual Benefit: Police and Fire Members retired prior to 7/1/2012 – 15% increase effective 5 years after the date of retirement with another 15% increase, compounded, effective 10 years after date of retirement. Command, Police and Fire members retired on or after 7/1/2012 – 15% of regular retirement amount effective 5 years after date of retirement. Fire members hired on or after January 1, 2011 – 10% of regular retirement amount effective 5 years after date of retirement, 5% of increase 10 years after retirement. Command members retired or in DROP prior to 5/20/2013 – 15% effective 5 and 10 years after date of retirement. Police patrol members hired after 7/1/2012 do not receive escalators.

All General Members retired prior to 7/1/2012 - 10.0% increase effective 5 years after the date of retirement and another 10.0% increase, compounded, effective 5 years after the first increase. General Members except Court Clerks retiring on or after 7/1/2012 - 5% increase effective 5 years after the date of retirement plus another 5% increase compounded, effective 10 years after the date of retirement plus a final 5% increase compounded, effective 15 years after the date of retirement. Court Clerks retiring on or after 7/1/2012 - 5% increase effective 5 years after the date of retirement plus another 5% increase compounded, effective 10 years after the date of retirement.

Member Contributions

Varies by what union contracts the member's benefits are based upon.

Annuity Withdrawal

Eligibility: Command, Police (except POAM hired after July 1, 2012) and Fire members.

Benefit: A police or fire member retiring with a normal retirement allowance may elect to withdraw all or part of their member contributions. The member's pension shall be reduced by the actuarial equivalent of the amount withdrawn. If a member elects the Annuity Withdrawal Option, the member shall only receive a distribution of ninety-five percent (95%) of the amount elected to be withdrawn, and the remaining five percent (5%) shall be credited to the Retirement System.

The additional two percent (2%) employee contribution agreed to by the Command Officers and Patrolman contracts and interest earned on those contributions shall not be available for the Annuity Withdrawal Option and any contribution (and interest) to the City's retirement system by a Command, Patrolman or Fire member participating in the City's Deferred Retirement Option Plan ("DROP") shall not be subject to the Annuity Withdrawal Option. Effective July 1, 2016, the extra 2% contribution and interest earned can now be withdrawn upon retirement for Command Officers. The additional 2% contribution paid prior to July 1, 2016 along with interest cannot be withdrawn.



Section Four:

***Actuarial Assumptions
And Methods***



Actuarial Assumptions

Economic Assumptions

(i) **Interest Rate** 7.5% (net of expenses)

(ii) **Salary Increases**

Across-the-Board 5.0%
 Merit and Longevity Age-related rates

Sample Annual Rates of Salary Increase

Sample Ages	Across-the-Board	Merit and Longevity		Totals	
		All General	Police-Fire	All General	Police-Fire
20	5.0%	3.8%	3.0%	8.8%	8.0%
25	5.0	3.1	3.0	8.1	8.0
30	5.0	2.7	2.6	7.7	7.6
35	5.0	2.4	1.1	7.4	6.1
40	5.0	2.1	0.2	7.1	5.2
45	5.0	1.7	0.2	6.7	5.2
50	5.0	1.1	0.2	6.1	5.2
55	5.0	0.7	0.1	5.7	5.1
60	5.0	0.2	-	5.2	5.0
65	5.0	-	-	5.0	5.0

Demographic Assumptions

(i) Mortality

RP 2000 Combined Healthy
Mortality Table

Sample Ages	Future Life Expectancy (Years)	
	Men	Women
50	30.84	33.64
55	26.22	28.95
60	21.78	24.42
65	17.65	20.16
70	13.92	16.27
75	10.61	12.78
80	7.79	9.71

(ii) Disability

Percent Becoming Disabled Within Next Year			
Sample	General		Police/Fire
Ages	Men	Women	
20	0.07%	0.03%	0.10%
25	0.09	0.05	0.15
30	0.10	0.07	0.20
35	0.14	0.13	0.25
40	0.21	0.19	0.50
45	0.32	0.28	0.65
50	0.52	0.45	0.80
55	0.92	0.76	0.95

(iii) Termination of Employment

Service related rates for first 5 years of employment. Age related rates after first 5 years of employment

Sample Ages	Years of Service	Members Separating Within the Year		
		General Members	Police	Fire
ALL	0	20.00%	12.00%	10.00%
	1	15.00	9.00	7.00
	2	10.00	7.00	5.00
	3	8.00	5.00	4.00
	4	7.00	4.50	3.50
20	5 & Over	6.00	4.50	3.50
25		6.00	4.50	3.50
30		5.50	3.90	2.90
35		4.40	2.30	1.50
40		1.85	0.90	0.60
45		1.25	0.50	0.50
50		1.25	0.50	0.50
55		1.25	0.50	0.50
60		1.25	0.50	0.50
65		1.25	-	-

(iv) Retirement Rates

Age-related rates

**Active Members Retiring within Year
Following Attainment of Indicated Retirement Age**

Age Retiring	Percent Retiring			
	Supervisors	General	Police	Fire
50	30	20	50	50
51	25	15	25	35
52	20	10	25	25
53	20	10	25	25
54	20	10	25	25
55	20	10	25	25
56	20	10	25	25
57	20	10	25	25
58	20	10	25	25
59	20	10	25	25
60	20	10	100	100
61	20	10		
62	40	30		
63	20	10		
64	20	10		
65	100	100		

A General member was assumed to be eligible for normal retirement after attaining age 50 with 30 years of service, after attaining age 55 with 20 or more years of service, or after attaining age 60 with 10 or more years of service. Supervisor members were assumed eligible for DROP retirement at age 55 with 25 or more years of service or with 30 years of service regardless of age. Police members were assumed eligible after attaining age 50 with 20 or more years of service or after attaining age 55 with 10 or more years of service. Fire members were assumed eligible after attaining age 50 with 20 or more years of service or after attaining age 55 with 10 or more years of service. Police members were assumed eligible for DROP retirement at age 50 with 25 years of service, and Fire members are eligible at age 50 with 20 years of service.

Lump sum payments included in the calculation of average pay upon which benefits are computed were assumed to increase benefits by 10%. Using non-consecutive quarters in FAC was assumed to increase benefits by 1%.

Actuarial Method Used for the Valuation

Normal Cost. Normal cost and the allocation of actuarial present values between service rendered before and after the valuation date were determined using an individual entry-age actuarial cost method having the following characteristics:

- ❖ The annual normal costs for each individual active member, payable from date of hire to date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement;
- ❖ Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Financing of Unfunded Actuarial Accrued Liability. Unfunded actuarial accrued liability was amortized as a level percent of payroll over 16 years, a decrease of 1 year from the period used for the June 30, 2017 annual valuation.

Active member payroll was assumed to increase 5.0% a year for the purpose of determining the level percent of payroll amortization payment.



Section Five:
Valuation Data



Summary of Asset Information Submitted for the Valuation

Revenues and Expenses for the Year Ended June 30, 2018

a. Revenues	
(i) Member Contributions	\$1,465,348
(ii) Employer Contributions	5,245,221
(iii) Investment Income (Net of Expenses)	11,665,522
(iv) Other	0
(v) Total Income	\$18,376,091
b. Expenses	
(i) Pensions and Refunds	\$15,191,849
(ii) Administrative Expense	209,219
(iii) Investment Expense	893,520
(v) Total Expenses	16,293,588
Total revenues minus total expenditures	\$2,082,504

Asset Reconciliation

Market Value of Assets – June 30, 2017	\$137,318,577
Revenues	18,376,091
Expenditures	(16,293,588)
Market Value of Assets – June 30, 2018	\$139,401,081

Asset Summary

As of June 30, 2018 the market value of assets was reported to be \$139,401,081. The funding value of assets (smoothed market value) was computed to be \$138,192,403.

Funding Value of Assets

A. Funding Value Beginning of Year	\$139,364,686
B. Market Value End of Year	139,401,081
C. Market Value Beginning of Year	137,318,577
D. Non-Investment Net Cash Flow	(8,689,498)
E. Investment Income	
E1. Market Total B-C-D	10,772,003
E2. Amount for Immediate Recognition (7.5%)	10,126,495
E3. Amount for Phased-In Recognition E1-E2	645,507
F. Phased-In Recognition of Investment Income	
F1. Current Year 0.25 x E3	161,377
F2. First Prior Year	1,929,895
F3. Second Prior Year	(3,136,076)
F4. Third Prior Year	(1,564,476)
F5. Total Recognized Investment Gain	(2,609,280)
G. Funding Value End of Year A+D+E2+F5	138,192,403
H. Difference Between Market and Funding Value	1,208,678
I. Net Funding Value	\$138,192,403
J. Recognized Rate of Return on Funding Value	5.6%

Participant Summary

Retirees and Beneficiaries Included in the Valuation

There were 369 retirees and beneficiaries included in the valuation, with annual pensions totaling \$13,711,667.

During the year ended June 30, 2018, 9 General, 6 Police/Fire were added. Six General members and four Police members were removed. Two Police/Fire members were removed from the DROP.

Pensions Being Paid Historical Schedule

Valuation Date June 30	No.	Annual Pensions	Average Pension	Discounted Value of Pensions	
				Total	Average
1995	237	\$3,546,617	\$14,977	\$40,059,089	\$169,026
2000	261	5,468,133	20,951	60,606,499	232,209
2001	262	5,725,074	21,851	62,075,690	236,930
2002	272	5,989,093	22,019	63,239,260	232,497
2003	270	6,381,561	23,635	65,879,324	243,986
2004	270	6,501,678	24,080	66,273,122	245,456
2005	276	6,966,711	25,242	71,198,776	257,967
2006	291	7,663,900	26,336	79,112,714	271,865
2007	304	8,297,320	27,294	84,776,799	278,871
2008	308	8,919,064	28,958	92,532,238	300,429
2009	313	9,254,286	29,566	92,490,698	295,497
2010	335	10,296,903	30,737	106,938,529*	319,219
2011	341	10,870,888	31,879	110,616,458*	324,388
2012	362	12,089,618	33,397	128,420,409*	354,753
2013	365	12,537,040	34,348	132,671,338*	363,483
2014	363	12,695,841	34,975	131,581,940*	362,485
2015	359	12,733,680	35,470	133,011,400*	370,506
2016	360	12,985,736	36,071	131,199,689*	364,444
2017	366	13,462,656	36,783	132,843,237*	362,960
2018	369	13,711,667	37,159	134,726,749*	365,113

*Includes the Drop Reserve balance beginning in 2010.

Note: Includes DROP participants beginning in 2003.

Retired Members and Survivors - June 30, 2018

Attained Age	Age and Service		Casualty			Totals
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions
45-49	7	\$216,727			7	216,727
50-54	27	1,318,910			27	1,318,910
55-59	43	2,172,096	3	225,914	46	2,398,009
60-64	56	2,411,326	4	119,148	60	2,530,471
65-69	66	2,444,314			66	2,444,314
70-74	62	2,322,301			62	2,322,301
75-79	38	1,181,717	2	21,101	40	1,202,818
80	7	183,426			7	183,426
81	4	152,577			4	152,577
82	3	82,613	1	12,991	4	95,605
83	5	158,628			5	158,628
84	3	67,885			3	67,885
85	3	61,117			3	61,117
86	6	136,305			6	136,305
87	5	114,390			5	114,390
88	4	61,814			4	61,814
89	3	43,385			3	43,385
90	1	20,390			1	20,390
91	7	98,904			7	98,904
92	2	18,516			2	18,516
93	3	44,730			3	44,730
95	4	20,443			4	20,443
Totals	359	\$13,332,516	10	\$379,154	369	\$13,711,667

*Includes 6 members in the Deferred Retirement Option Plan.

Inactive Members - June 30, 2018

Age	No.	Estimated Annual Pension
43	1	\$6,933
44	1	29,124
45	1	30,542
48	1	21,892
54	1	27,619
58	2	19,864
63	<u>1</u>	<u>5,362</u>
Totals	8	\$141,336

Active Member Summary

General Active Members - June 30, 2018
Age and Service Distribution

Attained Age	Service							No.	Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30-34		Payroll
20-24	5							5	\$233,672
25-29	4							4	152,551
30-34	8							8	330,623
35-39	5	3	2					10	627,450
40-44	4	3		2				9	496,704
45-49	3	2	2	6	6	2		21	1,417,681
50-54	8	1	4	7	7	1		28	1,527,841
55-59	4	2	2	6	2	2	1	19	1,031,809
60-64	1	3	4		1			9	490,716
65-69	1		1		1			3	59,359
70-74			2					2	34,404
Totals	43	14	17	21	17	5	1	118	\$6,402,810

Group Averages:

Age: 49.7 years
Service: 11.3 years
Annual Pay: \$54,261

Police Active Members - June 30, 2018
Age and Service Distribution

Attained Age	Service						No.	Totals Payroll
	0-4	5-9	10-14	15-19	20-24	25-29		
20-24	9						9	\$578,982
25-29	6	1					7	482,402
30-34	5	1	1				7	531,579
35-39	1		4	3	1		9	786,413
40-44	1	1	3	8	2		15	1,407,773
45-49	2		1	6	4	1	14	1,348,966
50-54				1	3		4	457,191
55-59	1				1		2	201,762
60-64		1					1	84,886
Totals	25	4	9	18	11	1	68	\$5,879,954

Group Averages:

Age: 39.5 years
Service: 11.8 years
Annual Pay: \$86,470

Fire Active Members - June 30, 2018
Age and Service Distribution

Attained Age	Service						No.	Totals
	0-4	5-9	10-14	15-19	20-24	25-29		Payroll
20-24	4						4	\$212,986
25-29	4	2					6	423,863
30-34	3	2	1				6	458,880
35-39	1	3	2	1			7	574,070
40-44		2	1				3	267,146
45-49				5	5	3	13	1,291,657
50-54					1		1	102,571
Totals	12	9	4	6	6	3	40	\$3,331,173

Group Averages:

Age: 39.7 years
Service: 11.6 years
Annual Pay: \$83,279

Active Members – Two -Year Summary

	<u>2018</u>			<u>2017</u>		
	<u>General</u>	<u>Police</u>	<u>Fire</u>	<u>General</u>	<u>Police</u>	<u>Fire</u>
Active Members	118	68	40	124	66	39
Valuation Payroll	\$6,402,810	\$5,879,954	\$3,331,173	\$6,173,880	\$5,620,049	\$2,942,390
Average Compensation	\$54,261	\$86,470	\$83,279	\$49,789	\$85,152	\$74,743
Average Age (yrs.)	49.7	39.5	39.7	48.3	39.8	39.7
Average Service (yrs.)	11.3	11.8	11.6	10.7	11.5	12.4