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GASB STATEMENT NO. 68 REPORT

FOR THE

CONNECTICUT MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM

PREPARED AS OF JUNE 30, 2018

REVISED AS OF JULY 31, 2019

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

July 31, 2019

State of Connecticut
State Employees' Retirement Commission
55 Elm Street
Hartford, CT 06106

Members of the Commission:

Presented in this revised report is information to assist the Connecticut Municipal Employees' Retirement System in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statement No. 68 and to identify the information to be provided by the actuary, Cavanaugh Macdonald Consulting (CMC). The information is presented for the purpose of employer financial reporting for the period ending June 30, 2019 (the Reporting Date). This revision was necessary to change the treatment of the receivable contributions due to the amortization of the initial unfunded liabilities established at plan entry.

GASB Statement No. 68 establishes accounting and financial reporting requirements for governmental employers who provide pension benefits to their employees through a trust.

The annual actuarial valuation used as a basis for much of the information presented in this report was performed as of June 30, 2018. The valuation was based on data, provided by the Retirement System staff, for active, inactive and retired members along with pertinent financial information. The valuation utilized the most recent actuarial assumptions and methods as presented in the experience study for the five-year period ended June 30, 2017 and adopted by the Commission at their meeting on November 15, 2018.

The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the System, and on actuarial assumptions that are, individually and in the aggregate, internally consistent and reasonably based on the actual experience of the System. In addition, the calculations were completed in compliance with the laws governing the System and, in our opinion, meet the requirements of GASB 68. The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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These results are only for financial reporting and may not be appropriate for funding purposes or other types of analysis. Calculations for purposes other than satisfying the requirements of GASB 67 and GASB 68 may produce significantly different results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as changes in plan experience or changes in economic or demographic assumptions.

Sincerely yours,

John J. Garrett ASA, FCA, MAAA
Principal and Consulting Actuary

Edward J. Koebel, FCA, EA, MAAA
Principal and Consulting Actuary

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REPORT OF THE ANNUAL GASB STATEMENT NO. 68
REQUIRED INFORMATION FOR THE
EMPLOYERS PARTCIPATING IN THE
CONNECTICUT MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM

PREPARED AS OF JUNE 30, 2018

SECTION I – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 68 (GASB 68), *"Accounting and Financial Reporting For Pensions"* in June 2012. This report, prepared as of June 30, 2018 (the Measurement Date), presents information to assist the employers participating in the System in meeting the requirements of GASB 68 for the fiscal year ending June 30, 2019 (Reporting Date). Much of the material provided in this report is based on the data, assumptions and results of the annual actuarial valuation of the System as of June 30, 2018. The results of that valuation were detailed in a report dated January 17, 2019. The Connecticut Municipal Employees' Retirement System (System) is a cost-sharing multiple employer defined benefit pension plan.

GASB 68 replaced GASB 27 and represents a significant departure from the requirements of that prior statement. GASB 68 created disclosure and reporting requirements that may or may not be consistent with the basis used for funding the Plan.

Two major changes in GASB 68 are the requirements to include a proportionate share of a Net Pension Liability (NPL) and to recognize a proportionate share of a Pension Expense (PE) in the financial statements of each of the participating employers and non-employer contributing entities.

The NPL shown in the GASB Statement No. 67 Report for the Connecticut Municipal Employees' Retirement System prepared as of June 30, 2018 and submitted March 20, 2019, is the collective NPL used for purposes of GASB 68. Please refer to that report for the derivation of the collective NPL.

Pension Expense includes amounts for service cost (the normal cost under the Entry Age Normal actuarial cost method for the year), interest on the Total Pension Liability (TPL), changes in benefit structure, amortization of increases/decreases in liability due to actuarial experience and actuarial assumption changes, and amortization of investment gains/losses. The actuarial experience and assumption change impacts are amortized over the average expected remaining service life of the Plan membership as of the beginning of the measurement year (4.97 years), and investment gains/losses are amortized over five years.

Section II of this report is a summary of the principal results of the collective amounts under GASB 68. Section III provides the results of all the necessary calculations, presented in the order laid out in GASB 68 for note disclosure. The unamortized portions of each year's experience, assumption changes and investment gains/losses are used to develop deferred inflows and outflows, which also must be included in the employer's financial statements. The development of the collective deferred inflows and outflows is shown in Section III. The development of the collective PE is shown in Section IV and Section V shows the Required Supplementary Information (RSI).

This report provides the determination of the collective measures of the net pension liability, deferred amounts and pension expense. The information contained herein will be the subject of an independent auditor's review along with the related information for the System provided under GASB Statement No. 67 as of the same measurement date which is contained in a separate report. The auditor's report will also contain the schedules of each participating share of the collective amounts and other disclosure information.

SECTION II - SUMMARY OF COLLECTIVE AMOUNTS
($ IN THOUSANDS)

	2018
Valuation Date (VD):	June 30, 2018
Measurement Date (MD):	June 30, 2018
Reporting Date (RD):	June 30, 2019
Single Equivalent Interest Rate (SEIR):	
Long-Term Expected Rate of Return	7.00%
Municipal Bond Index Rate at Measurement Date	3.89%
Fiscal Year in which Plan's Fiduciary Net Position is projected to be depleted from future benefit payments for current members	N/A
Single Equivalent Interest Rate	7.00%
Collective Net Pension Liability:	
Total Pension Liability (TPL)	$ 3,622,468
Fiduciary Net Position (FNP)	2,666,025
Net Pension Liability (NPL = TPL – FNP)	$ 956,443
FNP as a percentage of TPL	73.60%
Collective Pension Expense (PE):	$377,877
Collective Deferred Outflows of Resources:	$478,643
Collective Deferred Inflows of Resources:	$0

SECTION III –NOTES TO FINANCIAL STATEMENTS

The material presented herein will follow the order presented in GASB 68. Paragraph numbers are provided for ease of reference. Amounts are shown in aggregate.

Paragraphs 77 and 78(a)-(f): These paragraphs require information to be disclosed regarding the actuarial assumptions used to measure the TPL. The actuarial assumptions used in the June 30, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2012 to June 30, 2017. The complete set of actuarial assumptions utilized in developing the TPL are outlined in Schedule B. The TPL was determined by an actuarial valuation as of June 30, 2018, using the following key actuarial assumptions:

Inflation	2.50 percent
Salary increases, including inflation	3.50 – 10.00 percent
Long-Term Investment Rate of Return, net of pension plan investment expense, including inflation	7.00 percent

For the period after retirement and for dependent beneficiaries, mortality rates were based on the RP-2014 Combined Mortality Table adjusted to 2006 and projected to 2015 with Scale MP-2017 and projected to 2022 with Scale BB for General Employees and the RP-2014 Blue Collar Mortality Table adjusted to 2006 and projected to 2015 with Scale MP-2017 and projected to 2022 with Scale BB for Police and Fire. For disabled retirees, the RP-2014 Disabled Mortality Table projected with Scale BB to 2020 was used. The static projection produces sufficient margin in the mortality rates to reflect future improvement in our judgement.

The long-term expected rate of return on pension plan investments was determined using statistical analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and most recent best estimates of arithmetic real rates of return for each major asset class are to be provided by the Fiduciary of the Plan.

Discount rate. The discount rate used to measure the total pension liability was 7.00 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at the actuarially determined rates in future years. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Paragraph 78 (g): This paragraph requires disclosure of the sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability of the System, calculated using the discount rate of 7.00 percent, as well as what the System's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00 percent) or 1-percentage-point higher (8.00 percent) than the current rate ($ thousands):

Sensitivity of Net Pension Liability to Discount Rate Assumption			
	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Collective net pension liability	$1,410,766	$956,443	$576,020

Paragraph 80(a): This paragraph requires disclosure of the employer's proportionate share of the collective NPL and if an employer has a special funding situation the portion of the non-employer contributing entities' proportional share of the collective NPL that is associated with the employer.

Paragraph 80(b): This paragraph requires disclosure of the employer's proportion (percentage) of the collective NPL and the changes in proportion since the prior measurement date. The System has hired an outside independent auditor to report the amounts each employer will need to maintain schedules for amortizing deferred amounts and pension expenses.

Paragraph 80(c): June 30, 2018 is the actuarial valuation date upon which the TPL is based.

Paragraph 80(d) and (e): In 2018, the latest experience study for the System updated most of the actuarial assumptions utilized in the June 30, 2018 valuation to include: rates of inflation, real investment return mortality, withdrawal, disability, retirement and salary increase were adjusted to more closely reflect actual and anticipated experience. These assumptions were recommended as part of the Experience Study for the System for the five-year period ended June 30, 2017.

Paragraph 80(f): Not applicable.

Paragraph 80(g): Please see Section IV of this report for the development of the collective pension expense.

Paragraph 80(h): Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce collective pension expense they are labeled deferred inflows. If they will increase collective pension expense they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average expected remaining service life of the active and inactive Plan members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five year period.

The table below provides a summary in the difference between projected and actual earnings on plan investments. We determine the investment earnings based on the applicable CAFR information for the measurement year.

	Investment Earnings (Gain)/Loss as of June 30, 2018 ($ thousands)		
a	Expected asset return rate for measurement year		8.00%
b	Beginning of year net position (BOY) less receivables		2,459,909
c	End of year net position (EOY)		2,646,912
d	Expected return on BOY for plan year (a x b)		196,793
	External Cash Flow		
	Contributions - employer	179,370	
	Contributions - member	24,996	
	Refunds of contributions	(1,605)	
	Benefits paid	(165,548)	
	Admin expenses	0	
	Other	50	
e	Net cash flow	37,263	
f	Expected return on net cash flow (a x 0.5 x e)		1,490
g	Projected earnings for plan year (d + f)		198,283
h	Net investment income (c - b - e)		149,740
	Investment earnings (gain)/loss (g -h)		**48,543**

Gains and losses due to investment earnings are recognized over a five-year period.

Deferred Outflows and Inflows for Differences in Investment Experience ($ in thousands)

Year	Investment Losses (a)	Investment Gains (b)	Amounts Recognized in Pension Expense through 2018 (c)	Balances as of June 30, 2019 (Reporting Date): Deferred Outflows (a) – (c)	Balances as of June 30, 2019 (Reporting Date): Deferred Inflows (b) – (c)
2018	$48,543	$0	$9,708	$38,835	$0
2017	0	107,645	(43,058)	0	(64,587)
2016	161,524	0	96,914	64,610	0
2015	118,004	0	94,404	23,600	0
2014	0	107,179	(107,179)	0	0
Total				$127,045	$(64,587)
Net difference between projected and actual earnings on investments				**$62,458**	

Unexpected changes to the measurement of the total pension liability (TPL) is recognized over the 4.97 years of weighted average remaining service.

Deferred Outflows and Inflows for Differences between Expected and Actual Experience ($ in thousands)					
				Balances as of June 30, 2019 (Reporting Date)	
Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in Pension Expense through 2018 (c)	Deferred Outflows (a) – (c)	Deferred Inflows (b) – (c)
2018	$56,149	$0	$11,298	$44,851	$0
2017	0	0	0	0	0
2016	50,327	0	30,876	19,451	0
2015	0	0	0	0	0
2014	0	0	0	0	0
Total				**$64,302**	**$0**

Changes to the TPL due to changes in assumptions are also recognized over the 4.97 year weighted average remaining service period.

Deferred Outflows and Inflows for Differences from Assumption Changes ($ in thousands)					
				Balances as of June 30, 2019 (Reporting Date)	
Year	Increase due to Changes (a)	Decrease due to Changes (b)	Amounts Recognized in Pension Expense through 2018 (c)	Deferred Outflows (a) – (c)	Deferred Inflows (b) – (c)
2018	$440,517	$0	$88,635	$351,882	$0
2017	0	0	0	0	0
2016	0	0	0	0	0
2015	0	0	0	0	0
2014	0	0	0	0	0
Total				**$351,882**	**$0**

The table below provides a summary of the collective deferred inflows and outflows as of the Measurement Date.

	Collective Deferred Outflows of Resources ($ thousands)	Collective Deferred Inflows of Resources ($ thousands)
Differences between expected and actual experience	$64,303	$0
Changes of actuarial assumptions	351,882	0
Net difference between projected and actual earnings on plan investments	62,458	0
Total	$478,643	$0

Paragraph 80(i): Collective amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in the collective pension expense as follows.

Deferred Amounts to be Recognized in Fiscal Years Following the Reporting Date: ($ in thousands)	
Year 1	$154,310
Year 2	129,577
Year 3	88,113
Year 4	106,643
Thereafter	0

SECTION IV – COLLECTIVE PENSION EXPENSE

As noted earlier, the collective Pension Expense (PE) consists of a number of different items. GASB 68 refers to the first as Service Cost which is the Normal Cost using the Entry Age Normal actuarial funding method. The second item is interest on the beginning Total Pension Liability (TPL) and the cash flow during the year at the 8.00% rate of return in effect as of the previous measurement date. The next three items refer to any changes that occurred in the TPL due to:

- benefit changes, or
- actual versus expected experience, or
- changes in actuarial assumptions.

Benefit changes, which are reflected immediately in PE, can be positive, if there is a benefit improvement for existing Plan members, or negative if there is a benefit reduction. For the year ended June 30, 2018, there were no benefit changes to be recognized.

The next item to be recognized is the portion of current year changes in TPL due to actual versus expected experience for the year. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire Plan membership. The remaining service life of active members is the average number of years they are expected to remain active. As of the valuation dated June 30, 2018 (the most recently calculated at the beginning of the measurement year), the number of years for the active members is 9.45. The average expected remaining service life of the inactive members is, of course, zero. Therefore, the number of years to use for the amortization is the weighted average for all active and inactive members, or 4.97 years.

The table below provides a summary of the determination of the average expected remaining service life for the Plan membership applicable to the beginning of the measurement year.

Category	Number (1)	Average Years of Working Lifetime (2)
a. Active Members	9,373	9.45
b. Inactive Members	8,437	0.00
c. Total	17,810	
Weighted Average Years of Working Lifetime [(a1 * a2) + (b1 * b2)]/c1		4.97

The last item under changes in TPL are changes in actuarial assumptions. There were no changes in assumptions since the last measurement date. If there was a change in TPL due to changes in actuarial assumptions, recognition of the change would also be spread over the average expected remaining service life of the plan membership.

Member contributions for the year and projected earnings on the Fiduciary Net Position (FNP), again at the discount rate used to calculate the liabilities, are subtracted from the amount determined thus far. One-fifth of current period differences between projected and actual investment earnings on the FNP are recognized in the pension expense.

The current year portions of previously determined experience, assumption and earnings amounts, recognized as deferred outflows and inflows (see Section V) are included also. Deferred outflows are added to the PE while deferred inflows are subtracted from the PE. Finally, administrative expenses and other miscellaneous items are included where applicable.

The calculation of the Collective Pension Expense determined as of the measurement date is shown in the following table:

Collective Pension Expense Determined as of the Measurement Date ($ thousands)	
Service Cost at end of year	$ 79,098
Interest on the TPL and net cash flow	231,873
Current-period benefit changes	0
Expensed portion of current-period difference between expected and actual experience in the total pension liability	11,298
Expensed portion of current-period changes of assumptions	88,635
Member contributions	(24,996)
Projected earnings on plan investments	(198,283)
Expensed portion of current-period differences between projected and actual earnings on plan investments	9,709
Administrative expense	0
Other	157,310
Recognition of beginning deferred outflows of resources as pension expense	23,233
Recognition of beginning deferred inflows of resources as pension expense	0
Collective Pension Expense	377,877

SECTION V – REQUIRED SUPPLEMENTARY INFORMATION

Paragraphs 81(a)-(b): CMC was not required to supply this information.

Paragraph 82:

Changes of assumptions. In 2018, the latest experience study for the System updated most of the actuarial assumptions utilized in the June 30, 2018 valuation to include: rates of inflation, real investment return mortality, withdrawal, disability, retirement and salary increase were adjusted to more closely reflect actual and anticipated experience. These assumptions were recommended as part of the Experience Study for the System for the five-year period ended June 30, 2017.

Method and assumptions used in calculations of actuarially determined contributions. The actuarially determined contributions in the schedule of employer contributions are calculated as of June 30 each biennium for the fiscal years ending two and three years after the valuation date. The following actuarial methods and assumptions were used to determine the most recent contributions reported in that schedule:

Actuarial cost method	Entry age
Amortization method	Level dollar, closed
Single equivalent amortization period	23 years
Asset valuation method	5-year smoothed market (20% write up)
Inflation	3.25 percent
Salary increase	4.25-11.00 percent, including inflation
Investment rate of return	8.00 percent, net of investment related expense

SCHEDULE A

BENEFIT AND CONTRIBUTION PROVISIONS

MEMBERSHIP

Municipalities may designate which departments (including elective officers if so specified) are to be covered under the Municipal Employees Retirement System. This designation may be the result of collective bargaining. Only employees covered under the State Teachers Retirement System may not be included. There are no minimum age or service requirements. Membership is mandatory for all regular full time employees of participating departments except Police and Fire hired after age 60.

DEFINITIONS

Average Final Compensation	Average of the three highest paid years of service.
Normal Form of Benefit	Life annuity.
Year's Breakpoint	With respect to the calendar year in which a member terminates service, $10,700 increased by 6.0% each year after 1982, rounded to the nearest multiple of $100.

BENEFITS

Service Retirement Allowance

Condition for Allowance	Age 55 and 5 years of continuous service, or 15 years of active aggregate service, or 25 years of aggregate service. Compulsory retirement at age 65 for police and fire members.
Amount of Allowance	For members not covered by Social Security: 2% of average final compensation times years of service. For members covered by Social Security: 1-1/2% of the average final compensation not in excess of the year's breakpoint plus 2% of average final compensation in excess of the year's breakpoint, times years of service. The maximum benefit is 100% of average final compensation and the minimum benefit is $1,000 annually. Both the minimum and the maximum include Workers Compensation and Social Security benefits.

If any member covered by Social Security retires before age 62, his/her benefit until he/she reaches age 62 or receives a Social Security disability award is computed as if he/she were not under Social Security.

Non-Service Connected
Disability Retirement Allowance

Condition for Allowance	10 years of service and permanently and totally disabled from engaging in any gainful employment in the service of the Municipality.
Amount of Allowance	Calculated as a service retirement allowance based on compensation and service to the date of the disability.

Service Connected Disability

Condition for Allowance	Totally and permanently disabled from engaging in any gainful employment in the service of the Municipality provided such disability has arisen out of and in the course of his/her employment with the Municipality. Disability due to hypertension or heart disease, in the case of firemen and policemen, is presumed to have been suffered in the line of duty.
Amount of Allowance	Calculated as a service retirement allowance based on compensation and service to the date of the disability with a minimum benefit (including Worker's Compensation benefits) of 50% of compensation at the time of the disability.

Vesting Retirement Allowance

Condition for Allowance	5 years of continuous or 15 years of active aggregate service.
Amount of Allowance	Calculated as a service retirement allowance on the basis of average final compensation and service to the date of termination. Deferred to normal retirement age, or an actuarially reduced allowance may begin at the time of separation.

Death Benefit

Condition for Benefit	Eligible for service, disability retirement, or vested allowance, and married for at least 12 months preceding death.
Amount of Benefit	Computed on the basis of the member's average final compensation and creditable service at date of death, payable to the spouse. Benefit is equal to 50% of the average of the life annuity allowance and the reduced 50% joint and survivor allowance.

Return of Deductions

Upon the withdrawal of a member the amount of his accumulated deductions is payable to him/her on demand, with 5% interest from July 1, 1983.

Optional Benefits

Prior to the retirement, a member may elect to convert his retirement allowance into a benefit of equivalent actuarial value in accordance with one of the optional forms described below:

1. A reduced retirement allowance payable during his life with the provision that after his death the beneficiary designated by him at the time of his retirement; or

2. A reduced retirement allowance payable during his life with the provision that after his death an allowance of one half of his reduced allowance will be continued for life to the beneficiary designated by him at the time of his retirement;

3. A reduced retirement allowance payable during his life with a guarantee of 120 or 240 monthly payments to the member or his designated beneficiary.

Cost-of-Living Adjustment

For those retired prior to January 1, 2002:

(i) The benefits of disabled retirees, service retirees who have reached age 65, and beneficiaries of deceased retirees who would have reached age 65 are adjusted each July 1. The difference between the actual annual yield of the actuarial value of assets on a calendar year basis to a 6% yield is calculated. This difference is the adjustment applied the following July 1. The minimum adjustment is 3% and the maximum is 5%.

(ii) The benefits for all others on the roll are adjusted on January 1, 2002 and on each subsequent July 1. The amount of each adjustment is 2.5%.

For those retiring in or after January 1, 2002, benefits are adjusted each July 1. The adjustment is 60% of the annual increase in the CPI up to 6%. The minimum annual COLA is 2.5%; the maximum is 6%.

CONTRIBUTIONS

By Members	For members not covered by Social Security: 5% of compensation. For members covered by the Social Security: 2-1/4% of compensation up to the Social Security taxable wage base plus 5%of compensation, if any, in excess of such base.
By Municipalities	Participating Municipalities make annual contributions consisting of a normal cost contribution, a contribution for the amortization of the net unfunded accrued liability and a prior service amortization payment which covers the liabilities of the System not met by member contributions.

SCHEDULE B

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

Adopted or reaffirmed by the Commission for the June 30, 2018 and later valuations.

VALUATION INTEREST RATE: 7.00% per annum, compounded annually, net of expenses.

SALARY INCREASES: Representative values of assumed annual rates of salary increase are as follows:

	Annual Rates of				
	Merit & Seniority			Increase Next Year	
Service	General Employees	Firemen & Policemen	Base (Economy)	General Employees	Firemen & Policemen
0	3.50%	7.00%	3.00%	6.50%	10.00%
5	2.40%	3.50%	3.00%	5.40%	6.50%
10	1.70%	1.90%	3.00%	4.70%	4.90%
15	1.35%	1.50%	3.00%	4.35%	4.50%
20	1.10%	1.38%	3.00%	4.10%	4.38%
25	0.85%	1.12%	3.00%	3.85%	4.12%
30	0.60%	0.70%	3.00%	3.60%	3.70%
35	0.50%	0.50%	3.00%	3.50%	3.50%
40	0.50%	0.50%	3.00%	3.50%	3.50%

COST OF LIVING ADJUSTMENTS: Annually compounded increases are applied to disabled and non-disabled retirement benefits and vary based upon member age and date of retirement. For members that retired prior to January 1, 2002, increases of 3.25% are assumed for those who have reached age 65 and (effective January 1, 2002) increases of 2.50% are assumed for those who have not yet reached age 65. For members that retire after December 31, 2001, increases of 2.50% are assumed, regardless of age.

SOCIAL SECURITY WAGE BASE INCREASES: 3.50% per annum.

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed annual rates of separation before service retirement are as follows:

GENERAL EMPLOYEES

Age	Withdrawal and Vesting: Male 0 – 4 years	Withdrawal and Vesting: Male 5 – 24 years	Withdrawal and Vesting: Female 0 – 4 years	Withdrawal and Vesting: Female 5 – 24 years	Non-Service Related Disability*	Death: Male	Death: Female	Service Retirement
20	16.00%	12.00%	24.00%	18.00%	0.02%	0.05%	0.02%	
25	16.00	12.00	19.00	18.00	0.02	0.06	0.02	
30	12.50	10.00	16.00	12.00	0.02	0.06	0.03	
35	10.00	8.00	12.00	10.00	0.03	0.07	0.04	
40	9.50	5.75	10.00	8.00	0.04	0.09	0.05	
45	8.50	5.00	9.00	6.00	0.06	0.12	0.08	13.00%
50	8.50	4.50	9.00	4.50	0.09	0.21	0.14	13.00
55	6.50	0.00	8.00	0.00	0.40	0.35	0.21	7.50
60	6.50	0.00	8.00	0.00	1.00	0.56	0.31	9.50
65	6.00	0.00	8.00	0.00	1.60	0.95	0.44	18.00
70	6.00	0.00	8.00	0.00	2.50	1.50	0.71	18.00
75								100.00

POLICEMEN AND FIREMEN

Age	Withdrawal and Vesting: 0 – 4 years	Withdrawal and Vesting: 5 – 24 years	Service Related Disability*	Death: Male	Death: Female	Service Retirement
20	6.50%	5.00%	0.10%	0.06%	0.02%	
25	6.50	5.00	0.10	0.08	0.03	
30	5.75	4.00	0.10	0.08	0.03	
35	3.50	2.50	0.14	0.09	0.04	
40	3.50	2.00	0.22	0.10	0.06	
45	3.50	1.50	0.30	0.15	0.09	25.00%
50	3.50	0.00	0.64	0.25	0.14	15.00
55	3.50	0.00	2.40	0.41	0.24	13.00
60	3.50	0.00	4.80	0.67	0.34	15.00
65	0.00	0.00				100.00

*Service related disability rates for General Employees and Non-Service related disability rates for Policemen and Firemen are assumed to be zero at all ages.

DEATHS AFTER RETIREMENT: The RP-2014 Combined Mortality Table adjusted to 2006 and projected to 2015 with Scale MP-2017 and projected to 2022 with Scale BB is used by General Employees for the period after retirement and for dependent beneficiaries. The RP-2014 Blue Collar Mortality Table adjusted to 2006 and projected to 2015 with Scale MP-2017 and projected to 2022 with Scale BB is used by Police and Fire for the period after retirement and for dependent beneficiaries. Representative values of the assumed annual rates of mortality are as follows:

	General Employees		Policemen and Firemen	
Age	Male	Female	Male	Female
40	0.085%	0.054%	0.101%	0.060%
45	0.124	0.083	0.148	0.092
50	0.541	0.398	0.568	0.406
55	0.710	0.472	0.745	0.505
60	0.922	0.604	0.987	0.657
65	1.238	0.835	1.370	0.908
70	1.789	1.302	1.996	1.405
75	2.841	2.155	3.149	2.316
80	4.720	3.623	5.174	3.862
85	8.058	6.323	8.632	6.650

For disabled retirees, the RP-2014 Disabled Retiree Mortality Table projected to 2020 by Scale BB is used.

ASSET METHOD: Market Value of Assets.

VALUATION METHOD: Entry Age Normal Cost method.

SPOUSES: For members who have elected spouse coverage, husbands are assumed to be three years older than their wives.

PERCENT MARRIED: 80% of active members are assumed to be married.

LOAD: For those members who retired under and joint & survivor option and have no reported information for a prospective beneficiary, a probabilistic factor was applied to the reversionary portion of the liability. The factor measures the survivorship of the assumed spouse (with men three years older than women) from the date of retirement to the valuation date, based on the assumptions for death after retirement.