ACTUARIAL VALUATION

City of Waukegan
Waukegan Police Pension Fund

As of May 1, 2015
For the Year Ending April 30, 2016

MWM

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MWM Consulting Group was retained to prepare an actuarial valuation as of May 1, 2015 for the City of Waukegan Police Pension Fund. The purpose of the actuarial valuation was to determine the financial position and the annual actuarial requirements of the pension fund under Illinois statute 40 ILCS 5/3, Section 125, and to develop a recommended minimum contribution amount.

For quick reference, some of the key results of the valuation, along with selected financial and demographic information for the year ending April 30, 2016 are summarized in this overview section along with (for comparison) the results from the prior year.

CONTRIBUTIONS

The plan sponsor must contribute at least the statutorily required minimum contribution under Illinois statutes equal to the normal cost plus the amount necessary to amortize the unfunded accrued liability such that by 2040, the liabilities will be 90% funded.

Item	Current Valuation as of 5/1/2015	Prior Year Valuation as of 5/1/2014
Recommended Minimum Contribution	$7,568,821 (61.6%)	$7,536,269 (58.4%)
Statutory Minimum Contribution per 40 ILCS 5/3 Section 125	$6,019,553 (48.9%)	$5,981,501 (46.3%)
() amounts expressed as a percentage of payroll		

STATUTORY MINIMUM FUNDING COST ELEMENTS

Illinois statues require employers to contribute at least the amount necessary such that assets will equal at least 90% of the accrued liability by 2040. The minimum amount is determined under the Projected Unit Credit funding method, with smoothed assets, and is equal to the normal cost plus the amortization amount.

Item	Current Valuation as of 5/1/2015	Prior Year Valuation as of 5/1/2014
Accrued Liability	$ 152,827,048	$ 137,157,997
Market Value of Assets	$ 79,870,473	$ 73,019,890
Actuarial (Smoothed) Value of Assets	$ 76,471,879	$ 68,931,146
Normal Cost	$ 2,180,812	$ 2,585,264
Amortization Amount	$ 3,365,249	$ 2,924,441
Statutory Minimum Contribution	$ 6,019,553	$ 5,981,501

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RECOMMENDED MINIMUM FUNDING CONTRIBUTION COST ELEMENTS

Illinois statues require employers to contribute at least the amount necessary such that assets will equal at least 90% of the accrued liability by 2040. The minimum amount is determined under the Projected Unit Credit funding method, with smoothed assets, and is equal to the normal cost plus the amortization amount.

Item	Current Valuation as of 5/1/2015	Prior Year Valuation as of 5/1/2014
Accrued Liability	$ 156,909,027	$ 148,270,174
Market Value of Assets	$ 79,870,473	$ 73,019,890
Actuarial (Smoothed) Value of Assets	$ 76,471,879	$ 68,931,146
Normal Cost	$ 1,801,563	$ 1,864,538
Amortization Amount	$ 5,192,438	$ 5,098,221
Recommended Minimum Contribution	$ 7,568,821	$ 7,536,269

FINANCIAL THUMBNAIL RATIOS

This chart summarizes traditional financial ratios as applied to the pension plan. This liquidity ratio relates the cash flow position of the Fund by comparing the investment income plus employer and employee contributions to the annual benefit payments. Maintaining a ratio well above 100% prevents the liquidation of assets to cover benefit payments. The increase in benefits paid over the years is generally a result of the maturing of the pension plan.

Coverage of the Accrued Liabilities by the Assets is the Coverage Ratio and is one indication of the long term funding progress of the plan.

Tests	2015 Valuation	2014 Valuation
Liquidity Ratio (based upon year ended)	202%	257%
Coverage Ratio (Market Value Assets)	50.9%	49.2%
Annual Benefit Payments (expected)	$7,136,209	$6,785,695
Annual Contributions (expected)		
Members	$1,218,113	$1,230,242
City	$7,568,821	$7,536,269

PARTICIPANT DATA SUMMARY

The Actuarial Valuation takes into account demographic and benefit information for active employees, vested former employees, and retired pensioners and beneficiaries. The statistics for the past two years are compared in the chart.

Item	Current Year Valuation as of 5/1/2015	Prior Year Valuation as of 5/1/2014
Active Members	142	146
Terminated Members entitled to future benefits	30	20
Retired Members (including beneficiaries and disabled participants receiving benefits)	125	127
Total	297	293

Significant Events and Issues Influencing Valuation Results

Actuarial valuations are snapshot calculations which incorporate and reflect the experience and events of the past year such as changes in the demographics of the plan participants, gains and losses in the plan assets, changes in actuarial assumptions about future experience and outside influences such as legislation. Some of the more significant issues affecting the Plan's contribution level are described here.

Change in Actuarial Assumptions

With respect to demographic assumptions, modifications were made to the disability and duty disability assumptions. Mortality was changed to RP2000 with mortality improvements to the 2015 valuation year projected by Scale AA with Blue Collar adjustment and a 50% load. Retirement rates were not changed for this valuation, however, a review of the retirement rates is recommended before the next valuation.

Asset Performance for yearend 4/30/2015

The approximate 7.24% return (not time weighted) on net assets was above the actuarial assumption of 7.00%.

Employer Contributions

The employer contribution is expected to exceed the required statutory minimum amount.

ACTUARIAL CERTIFICATION

This is to certify that MWM Consulting Group has prepared an Actuarial Valuation of the Plan as of May 1, 2015 for the purposes of determining statutory contribution requirements for the Fund in accordance with the requirements of 40 ILCS 5/3, Section 125, of determining a recommended minimum contribution, and of determining the Annual Required Contribution in accordance with Statement No. 25 of the Governmental Accounting Standards Board (GASB). The contributions determined are net of contributions made by active member police officers during the year.

The results shown in this report have been calculated under the supervisions of a qualified Actuary as defined in appropriate State statutes. All results are based upon demographic data submitted by the Fund /City, financial data submitted by the Fund, applications of actuarial assumptions, and generally accepted actuarial methods.

This valuation report has been prepared at the request of City of Waukegan Incorporated to assist in administering the Plan and meeting specified financial and accounting requirements. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Fund sponsor and may only be provided to other parties in its entirety. The information and valuation results shown in this report are prepared with reliance upon information and data provided to us, which we believe to the best of our knowledge to be complete and accurate and include:

- Employee census data submitted by the City of Waukegan Incorporated. This data was not audited by us but appears to be consistent with prior information, and sufficient and reliable for purposes of this report.
- Financial data submitted by the Police Fund/City of Waukegan Incorporated.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Actuarial valuations involve calculations that require assumptions about future events. Certain of the assumptions or methods are mandated for specific purposes. Future actuarial measurements may differ significantly from the current measurements presented in the report due to such factors as experience that deviates from the assumptions, changes in assumptions, 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 contributions based on the Plan's funded status) and changes in plan provisions or applicable law. This report does not include an analysis of the potential range of such future measurements.

We believe the assumptions and methods used are within the range of possible assumptions that are reasonable and appropriate for the purposes for which they have been used. In our opinion, all methods, assumptions and calculations are in accordance with requirements and the procedures followed and presentation of results are in conformity with generally accepted actuarial principles and practices. The undersigned actuary meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. There is no relationship between the City of Waukegan Incorporated and MWM Consulting Group that impacts our objectivity. I certify that the results presented in this report are accurate and correct to the best of my knowledge.

MWM CONSULTING GROUP
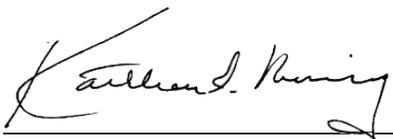
Kathleen E Manning, FSA
Managing Principal & Consulting Actuary
MWM Consulting Group
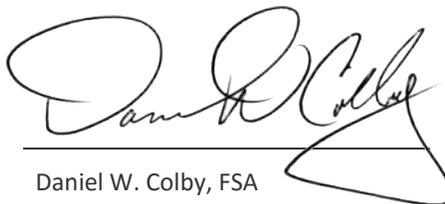
Daniel W. Colby, FSA
Consulting Actuary
MWM Consulting Group

10/26/2015

Date

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SECTION 3 - FINANCIAL AND ACTUARIAL EXHIBITS

Exhibit 1 - Statement of Market Value of Assets

Item	Plan Year Ending 4/30/2015	Plan Year Ending 4/30/2014
1. Investments at Fair Value:		
a. Cash and Cash equivalents	$ 0	$ 0
b. Money Market Mutual Funds	4,406,745	605,455
c. Municipal Bonds	13,797,182	12,111,247
d. Corporate Bonds	0	0
e. US Government and Agency Bonds	9,327,961	9,832,493
f. Common and Preferred Stocks	0	0
g. Insurance Contracts (at contract value):	8,559,528	7,537,345
h. Mutual Funds	43,611,453	42,779,186
i. Accrued Interest and receivables	186,334	173,327
j. Other	5,475	0
Subtotal Assets (a + b + c +d + e + f + g+ h+ i +j)	$ 79,894,678	$ 73,039,053
2. Liabilities:		
a. Expenses Payable	$ 24,205	$ 17,475
b. Liability for benefits due and unpaid	0	0
c. Total Liabilities	$ 24,205	$ 17,475
3. Net Market Value of Assets Available for Benefits: (1j – 2c)	$ 79,870,473	$ 73,021,578[1]
		$ 73,019,890[2]

(1) Per 5/1/2014 Tepfer Actuarial Report
(2) Per DOI asset report 4/30/2015

Exhibit 2 - Statement of Change in Net Assets

Item	Plan Year Ending	
	4/30/2015	4/30/2014
Additions		
Contributions		
Employer	$ 7,092,838	
Plan Member	1,399,855	
Other	0	
Total Contributions	$ 8,492,693	
Investment Income		
Net appreciation in fair value of investments	$ 3,593,914	
Interest	741,430	
Dividends	982,464	
Real estate operating income-net	0	
Investment Expenses	0	
Net Investment Income	21,938	
Total additions	$ 13,832,439	
Deductions		
Benefits	$ 6,741,890	
Refunds	0	
Administrative and Investment Expenses	239,966	
Total deductions	$ 6,981,856	
Total increase (decrease)	$ 6,850,583	
Net Market Value of Assets Available for Benefits:		
Beginning of year	$ 73,019,890[1]	
End of year	$ 79,870,473	

(1)   Per DOI asset report 4/30/2015

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Exhibit 3 – Actuarial Value of Assets

Under 40 ILCS 5/3, the statutory minimum required contribution is to be determined based upon **Actuarial Value of Assets**, which are asset values which have been smoothed over a five-year period, beginning with the year 2011. The **Actuarial Value of Assets** has been calculated below based upon the market value of assets at May 1, 2015 with adjustments for the preceding year's gains/losses, which are reflected at the rate of 20% per year.

1. Expected Return on Assets	
a. Market Value of Assets as of Beginning of Year	$ 73,019,890
b. Income and Disbursements During the year	
i. Contributions Received (weighted 50%)	$ 4,246,347
ii. Benefit Payments and Expenses (weighted 50%)	3,490,928
iii. Weighted net income (other than investment income) (i) – (ii)	755,419
c. Market Value adjusted for income and disbursements	$ 73,775,309
d. Expected Return on Assets at assumed rate of 7.00%	**$ 5,164,272**
2. Actual Return on Assets for year	
a. Market Value of Assets (Beginning of Year)	$ 73,019,890
b. Income (less investment income)	8,492,693
c. Disbursements	6,981,856
d. Market Value of Assets (End of Year)	79,870,473
e. Actual Return on Assets (d) – (a) – (b) + (c)	5,339,746
f. Investment Gain/(Loss) for year 2(e) - 1(d)	**$ 175,474**
3. Actuarial Value of Assets	
a. Market Value of Assets as of End of Year	$ 79,870,473
b. Deferred Investment gains/(losses)	
i. 80% of 2015 gain of $175,474	(140,379)
ii. 60% of 2014 gain of $5,402,263	(3,241,358)
iii. 40% of 2013 gain of $1,325,458	(530,183)
iv. 20% of 2012 loss of $(2,566,631)	513,326
v. Total	(3,398,594)
c. Actuarial Value of Assets for statutory funding 3(a) + 3(b)(iv)	**$ 76,471,879**

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Exhibit 4- Determination of the Statutory Minimum Required Contribution

Under 40 ILCS 5/3, the statutory minimum required contribution is to be determined based upon the Projected Unit Credit actuarial funding method, where the unfunded liability is amortized such that 90% of the liability will be funded as of 2040. Under the statute, 90% of the unfunded liability is to be amortized as a level percentage of payroll over the period through 2040. The mandated funding method, the Projected **Unit Credit funding method, requires** the annual cost of the plan to be developed in two parts: that attributable to benefits allocated to the current year (the normal cost); and that allocated to benefits attributable to prior service (the accrued liability).

Funding Elements for 40 ILCS 5/3

	Present Value of Benefits as of 5/1/2015	Projected Unit Credit (PUC) Normal Cost 5/1/2015	PUC Actuarial Accrued Liability as of 5/1/2015
1. Active Officers			
a) Normal & Early Retirement	$ 73,251,313	$ 2,709,012	$ 46,498,556
b) Vested Withdrawal	2,399,700	133,039	1,684,959
c) Pre-Retirement Death	2,064,142	91,572	1,388,257
d) Disability	9,240,598	465,302	6,098,898
e) Total Active Police Officers	$ 86,955,753	$ 3,398,925	$ 55,670,670
2. Inactive Police Officers and Survivors:			
a) Normal Retirees	$ 68,964,034		$ 68,964,034
b) Widows (survivors)	6,292,728		6,292,728
c) Deferred Vested	342,315		342,315
d) Disabled	21,557,301		21,557,301
e) Total - Nonactive	$ 97,156,378		$ 97,156,378
3. Total – All	$ 184,112,131		$ 152,827,048

Minimum Statutory Contribution under 40 ILCS 5/3

Item	Amount
1. Annual Payroll	$ 12,291,761
2. Normal Cost (net of employee/member contributions)	2,180,812
3. Employee Contributions (expected)	1,218,113
4. Funding Actuarial Liability	152,827,048
5. 90% of Funding Actuarial Liability	137,544,343
6. Actuarial Value of Assets (Exhibit 3)	76,471,879
7. Unfunded Actuarial Balance	61,072,464
8. Amortization of Unfunded Balance over 25 years as a level percentage of payroll	3,365,249
9. Interest on (2), (3) and (8)	473,492
10. Minimum statutory tax levy contribution per 40 ILCS 5/3 – (2) + (8) + (9)	**$6,019,553 (48.9%)**

*() amount as a percent of payroll

Exhibit 5- Determination of the Recommended Contribution

The Tax Levy has been based upon the actuary's recommended contribution, rather than the amount determined as the minimum under 40 ILCS 5/3. The recommended contribution is developed below, based upon the Entry Age Normal Funding Method, with the unfunded accrued liability amortized as a level dollar amount over the 25 years through 2040. The contribution is then the sum of the Normal Cost (developed under the entry age method, but where the total normal cost is not less than 17.5%) plus the amortization payment.

Funding Elements for Recommended Contribution

	Present Value of Benefits as of 5/1/2015	Entry Age Normal Cost 5/1/2015	Entry Age Accrued Liability as of 5/1/2015
1. Active Officers			
a) Normal & Early Retirement	$ 73,251,313	$ 2,171,661	$ 53,842,874
b) Vested Withdrawal	2,399,700	197,091	522,899
c) Pre-Retirement Death	2,064,142	100,951	1,152,848
d) Disability	9,240,598	549,947	4,234,028
e) Total Active Police Officers	$ 86,955,753	$ 3,019,650	$ 59,752,649
2. . Inactive Police Officers and Survivors:			
f) Normal Retirees	$ 68,964,034		$ 68,964,034
g) Widows (survivors)	6,292,728		6,292,728
h) Deferred Vested	342,315		342,315
i) Disabled	21,557,301		21,557,301
j) Total - Nonactive	$ 97,156,378		$ 97,156,378
3. Total – All	$ 184,112,131		$ 156,909,027

Recommended Contribution for Tax Levy

Item	Amount
1. Normal Cost (net of employee/member contributions)	$ 1,801,537
2. Employee Contributions (expected)	1,218,113
3. Funding Actuarial Liability	156,909,027
4. 90% of Funding Actuarial Liability	141,218,124
5. Actuarial Value of Assets (Exhibit 3)	76,471,879
6. Unfunded Actuarial Balance	64,746,245
7. Amortization of Unfunded Balance over 25 years as a level dollar amount	5,192,438
8. Interest on (1), (2) and (7)	574,846
9. Recommended tax levy contribution (1) + (7) + (8)	**$7,568,821 (61.6%)**

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Exhibit 6 – Summary of Participant Data as of May 1, 2015

Participant Data

Item	As of 5/1/2015
Active Members	142
Terminated Members entitled to future benefits	30
Retired Members (including beneficiaries and disabled participants receiving benefits)	<u>125</u>
Total	297

AGE AND SERVICE DISTRIBUTION AS OF MAY 1, 2015

Active Employee Participants

Age Group	Service									Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40+	
Under 20										0
20 - 24	2									2
25 - 29	11									11
30 - 34	3	12	3							18
35 - 39	3	7	19	6						35
40 - 44	1	2	6	22	2					33
45 - 49			7	5	18					30
50 - 54				3	4	2				9
55 - 59					1	2				3
60 - 64					1					1
75 & Over										0
Total	**20**	**21**	**35**	**36**	**26**	**4**	**0**	**0**	**0**	**142**

Average Age: 40.2 years
Average Length of Service: 13.5 years

SECTION 4 - SUMMARY OF PRINCIPAL PLAN PROVISIONS

This summary provides a general description of the major eligibility and benefit provisions of the pension fund upon which this valuation has been based. It is not intended to be, nor should it be interpreted as, a complete statement of all provisions

Definitions

Tier 1 – For Police Officers first entering Article 3 prior to May 1, 2011

Tier 2 – For Police Officers first entering Article 3 after December 31, 2010

Police Officer (3-106): Any person appointed to the police force and sworn and commissioned to perform police duties.

Persons excluded from Fund (3-109): Part-time officers, special police officer, night watchmen, traffic guards, clerks   and civilian employees of the department. Also, police officers who fail to pay the required fund contributions or who   elect the Self-Managed Plan option.

Creditable Service (3-110): Time served by a police officer, excluding furloughs in excess of 30 days, but including   leaves of absences for illness or accident and periods of disability where no disability pension payments have been   received and also including up to 3 years during which disability payments have been received provided contributions   are made.

Pension (3-111)

Normal Pension Age
Tier 1 - Age 50 with 20 or more years of creditable service.

Tier 2 - Age 55 with 10 or more years of creditable service.

Normal Pension Amount
Tier 1 - 50% of the greater of the annual salary held in the year preceding retirement or the annual salary held on the   last day of service, plus 2½% of such annual salary for service from 20 to 30 year (maximum 25%)].

Tier 2 - 2½% of Final Average salary for each year of service. Final Average Salary is the highest salary based on   the highest consecutive 96 months of the final 120 months of service

Early Retirement at age 50 with 10 or more years of service but with a penalty of ½% for each month prior to age 55.

Annual Salary capped at $106,800 increased yearly by the lesser of ½ of the Consumer Price Index- Urban (CPI-U) or 3%. Salary for valuations beginning in 2013 is $109,971.43.

Minimum Monthly Benefit: $1,000

Maximum Benefit Percentage: 75% of salary

Termination Retirement Pension Date
Separation of service after completion of between 8 and 20 years of creditable service.

Termination Pension Amount

Commencing at age 60, 2½% of annual salary held in the year preceding termination times years of creditable service or refund of contributions, or for persons terminating on or after July 1, 1987, 2½% of annual salary held on the last day of service times years of credible service, whichever is greater.

Pension Increase Non-Disabled

Tier 1 - 3% increase of the original pension amount after attainment of age 55 for each year elapsed since retirement, followed by an additional 3% of the original pension amount on each May 1 thereafter. Effective July 1, 1993, 3% of the amount of pension payable at the time of the increase including increases previously granted, rather than 3% of the originally granted pension amount.

Tier 2 - The lesser of ½ of the Consumer Price Index- Urban (CPI-U) or 3% increase of the original pension amount after attainment of age 60, followed by an additional 3% of the original pension amount on each May 1 thereafter.

Disabled

3% increase of the original pension amount after attainment of age 60 for each year he or she received pension payments, followed by an additional 3% of the original pension amount in each May 1 thereafter.

Pension to Survivors (3-112)

Death of Retired Member
Tier 1 - 100% of pension amount to surviving spouse (or dependent children).

Tier 2 – 66 2/3% of pension amount to surviving spouse (or dependent children), subject to the following increase: the lesser of ½ of the Consumer Price Index- Urban (CPI-U) or 3% increase of the original pension amount after attainment of age 60, followed by an additional 3% of the original pension amount on each May 1 thereafter.

Death While in Service (Not in line of duty)
With 20 years of creditable service, the pension amount earned as of the date of death.

With between 10 and 20 years of creditable service, 50% of the salary attached to the rank for the year prior to the date of death.

Death in Line of Duty
100% of the salary attached to the rank for the last day of service year prior to date of death.

Minimum Survivor Pension
$1,000 per month to all surviving spouses.

Disability Pension - Line of Duty (3-114.1)

Eligibility
Suspension or retirement from police service due to sickness, accident or injury while on duty.

Pension
Greater of 65% of salary attached to rank at date of suspension or retirement and the retirement pension available.   Minimum $1,000 per month.

Disability Pension - Not on Duty (3-114.2)

Eligibility
Suspension or retirement from police service for any cause other than while on duty.

Pension
50% of salary attached to rank at date of suspension or retirement. Minimum $1,000 per month.

Other Provisions

Marriage after Retirement (3-120)
No surviving spouse benefit available.

Refund (3-124)
At death prior to completion of 10 years of service, contributions are returned without interest to widow.   At termination with less than 20 years of service, contributions are refunded upon request.

Contributions by Police Officers (3-125.1)
Beginning May 1, 2001, 9.91% of salary including longevity, but excluding overtime pay, holiday pay, bonus pay,   merit pay or other cash benefit.

Actuarial Accrued Liability
See **Entry Age Normal Cost** Method and **Projected Unit Credit Cost** Method.

Actuarial Assumptions
The economic and demographic predictions used to estimate the present value of the plan's future obligations. They include estimates of investment earnings, salary increases, mortality, withdrawal and other related items. The *Actuarial Assumptions* are used in connection with the *Actuarial Cost Method* to allocate plan costs over the working lifetimes of plan participants.

Actuarial Cost Method
The method used to allocate the projected obligations of the plan over the working lifetimes of the plan participants. Also referred to as an *Actuarial Funding Method.*

Actuarial Funding Method
See *Actuarial Cost Method*

Actuarial Gain (Loss)
The excess of the actual *Unfunded Actuarial Accrued Liability* over the expected *Unfunded Actuarial Accrued Liability* represents an *Actuarial Loss.* If the expected *Unfunded Actuarial Accrued Liability* is greater, an *Actuarial Gain* has occurred.

Actuarial Present Value
The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of *Actuarial Assumptions*.

Actuarial Value of Assets
The asset value derived by using the plan's *Asset Valuation Method.*

Asset Valuation Method
A valuation method designed to smooth random fluctuations in asset values. The objective underlying the use of an asset valuation method is to provide for the long-term stability of employer contributions.

Employee Retirement Income Security Act of 1974 (ERISA)
The primary federal legislative act establishing funding, participation, vesting, benefit accrual, reporting, and disclosure standards for pension and welfare plans.

Entry Age Normal Cost Method
One of the standard actuarial funding methods in which the *Present Value of Projected Plan Benefits* of each individual included in the *Actuarial Valuation* is allocated on a level basis over the earnings of the individual between entry age and assumed exit age(s). The portion of this *Actuarial Present Value* allocated to a valuation year is called the *Normal Cost*. The portion of this *Actuarial Present Value* not provided for at a valuation date by the *Actuarial Present Value* of future *Normal Costs* is called the *Actuarial Accrued Liability*.

Normal Cost
The portion of the *Present Value of Projected Plan Benefits* that is allocated to a particular plan year by the *Actuarial Cost Method*. See *Entry Age Normal Cost Method* for a description of the Normal Cost under the *Entry Age Normal Cost Method.* See *Projected Unit Credit Cost Method* for a description of the Normal Cost under the *Projected Unit Credit Cost Method.*

Present Value of Future Normal Costs

The present value of future normal costs determined based on the *Actuarial Cost Method* for the plan. Under the *Entry Age Normal Cost Method*, this amount is equal to the excess of the *Present Value of Projected Plan Benefits* over the sum of the *Actuarial Value of Assets* and *Unfunded Actuarial Accrued Liability.*

Present Value of Projected Plan Benefits

The present value of future plan benefits reflecting projected credited service and salaries. The present value is determined based on the plan's actuarial assumptions.

Projected Unit Credit Cost Method

One of the standard actuarial funding methods in which the *Present Value of Projected Plan Benefits* of each individual included in the *Actuarial Valuation* is allocated by a consistent formula to valuation years. The *Actuarial Present Value* allocated to a valuation year is called the *Normal Cost*. The *Actuarial Present Value* of benefits allocated to all periods prior to a valuation year is called the *Actuarial Accrued Liability*.

Statement No. 25 of the Governmental Accounting Standards Board (GASB No. 25)

The accounting statement that established the standards of financial accounting and reporting for the financial statements of defined benefit pension plans.

Unfunded Actuarial Accrued Liability

The excess of the *Actuarial Accrued Liability* over the *Actuarial Value of Assets.*

SECTION 5 - SUMMARY OF ACTUARIAL ASSUMPTIONS AND COST METHODS

Nature of Actuarial Calculations

The results documented in this report are estimates based on data that may be imperfect and on assumptions about future events, some of which are mandated assumptions. Certain provisions may be approximated or deemed immaterial and therefore are not valued. Assumptions may be made about participant data or other factors.   A range of results, different from those presented in this report could be considered reasonable. The numbers are not rounded, but this is for convenience and should not imply precisions, which is not inherent in actuarial calculations.

Actuarial Assumption Item	Annual Actuarial Valuation Statutory Minimum	Annual Actuarial Valuation Recommended Minimum
Interest	7.00% per annum	7.00% per annum
Mortality	RP2000 Mortality Table projected to 2015 with Blue Collar Adjustments, 50% Load	RP2000 Mortality Table projected to 2015 with Blue Collar Adjustments, 50% Load
Retirement	Rates of retirement for all ages are: Age / Age 50 35.52% 60 21.17% 51 22.38% 61 30.41% 52 18.42% 62 39.11% 53 18.83% 63 47.81% 54 19.24% 64 56.51% 55 19.65% 65 65.20% 56 20.07% 66 73.90% 57 20.48% 67 82.60% 58 20.89% 68 91.30% 59 21.30% 69 100%	Rates of retirement for all ages are: Age / Age 50 35.52% 60 21.17% 51 22.38% 61 30.41% 52 18.42% 62 39.11% 53 18.83% 63 47.81% 54 19.24% 64 56.51% 55 19.65% 65 65.20% 56 20.07% 66 73.90% 57 20.48% 67 82.60% 58 20.89% 68 91.30% 59 21.30% 69 100%
Withdrawal	Rates of termination are based upon age only. Sample rates for selected ages are: Age 25 3.65% 40 0.82% 50 0.00% 55 0.00%	Rates of termination are based upon age only. Sample rates for selected ages are: Age 25 3.65% 40 0.82% 50 0.00% 55 0.00%
Salary Increase	Rates of salary increases are based upon age only. An additional 2.5% reflecting inflationary increases, was added in addition to the rates illustrated below. Sample rates for selected ages are: Age 25 4.86% 40 1.52% 50 1.18% 55 1.12%	Rates of salary increases are based upon age only. An additional 2.5% reflecting inflationary increases, was added in addition to the rates illustrated below. Sample rates for selected ages are: Age 25 4.86% 40 1.52% 50 1.18% 55 1.12%

Actuarial Assumption Item	Annual Actuarial Valuation Statutory Minimum	Annual Actuarial Valuation Recommended Minimum
Payroll Growth	Total payroll is assumed to increase at 4.0% per year	Total payroll is assumed to increase at 4.0% per year
Percentage Married	85% are married, females are assumed to be 3 years younger	85% are married, females are assumed to be 3 years younger
Asset Valuation Method	Assets are valued at fair market value and smoothed over five years, reflecting gains and losses at 20% per year.	Assets are valued at fair market value and smoothed over five years, reflecting gains and losses at 20% per year.
Actuarial Cost Methods	Projected Unit Credit Cost Method This is the mandated actuarial method to be used in determining the statutory contribution requirements and under PA 096-1495. This method determines the present value of projected benefits and prorates the projected benefit by service to date to determine the accrued liability. Amounts attributable to past service are amortized as a level percentage of pay with the goal of reaching 90% of the accrued liability by 2040.	Entry Age Normal Cost Method This method projects benefits from entry age to retirement age and attributes costs over total service, as a level percentage of pay. Amounts attributable to past service have been amortized over 26 years as a level dollar amount.