CITY OF SPRINGFIELD
FIREFIGHTERS' PENSION FUND

ACTUARIAL VALUATION
AS OF FEBRUARY 28, 2014

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October 21, 2014

Mr. Dallas Whitford
Office of Management and Budget
City of Springfield
Room 210 – Municipal Building
Springfield, Illinois 62701

Re: **Actuarial Valuation of the Springfield Firefighters' Pension Fund**

Dear Mr. Whitford:

I am pleased to submit our actuarial report based on an actuarial valuation of the Springfield Firefighters' Pension Fund as of February 28, 2014.

The report consists of 10 Sections and 2 Appendices as follows:

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I would be pleased to discuss any aspects of this report with you and other interested persons.

Respectfully submitted,

Sandor Goldstein, F.S.A.
Consulting Actuary

A. PURPOSE AND SUMMARY

We have carried out an actuarial valuation of the Springfield Firefighters' Pension Fund as of February 28, 2014. The purpose of the valuation was to determine the financial position and the annual actuarial requirements of the pension fund. This report is intended to present the results of the valuation. The results of the valuation are summarized below:

1. Total Actuarial Liability	$ 236,325,500
2. Actuarial Value of Assets	$ 111,954,009
3. Unfunded Actuarial Liability	$ 124,371,491
4. Funded Ratio	47.4%
5. Total Normal Cost For Year Beginning March 1, 2014	$ 4,835,391
6. Total Normal Cost as a Percent of Payroll	28.76%
7. Annual Actuarial Requirements For Year Beginning March 1, 2015	$ 9,786,645
8. Annual Required Contribution For GASB Statement No. 25 For Year Beginning March 1, 2015	$ 12,653,173
9. Employer's Share of Annual Required Contribution For GASB Statement No. 25	$ 11,021,847

B. DATA USED FOR THE VALUATION

Participation Data. The participant data required to carry out the valuation was supplied by the pension fund. The participant data for the pension fund as of February 28, 2014, on which the valuation is based, is summarized in Exhibit 1. It can be seen that there were 217 active members, 2 inactive members and 241 members receiving benefits. The total active payroll as of February 28, 2014 was $16,810,957.

Exhibit 1

Summary of Participant Data

1. Number of Members		
(a) Active Members		
(i) Vested		130
(ii) Non-vested		87
(b) Inactive Members		2
(c) Members Receiving		
(i) Retirement Pensions		160
(ii) Survivor Pensions		52
(iii) Disability Pensions		29
(d) Total		460
2. Annual Salaries		
(a) Total Salary	$	16,810,957
(b) Average Salary		77,470
3. Total Accumulated Contributions of Active Members	$	14,203,900
4. Annual Benefit Payments Currently Being Made		
(a) Retirement Pensions	$	9,887,411
(b) Survivor Pensions		1,605,973
(c) Disability Pensions		1,145,022

Assets. In November of 1994, the Governmental Accounting Standards Board (GASB) issued GASB Statement No. 25, which establishes standards of financial reporting for governmental pension plans. Under GASB Statement No. 25, the actuarial value of assets to be used for determining a plan's funded status and annual required contribution needs to be market related.

However, GASB has indicated that current market values should not be used if those values would result in unnecessary fluctuation in the funded status and the annual required contribution. Thus, in determining the actuarial value of assets, smoothing changes in the market value of assets over a period of three to five years is considered appropriate.

The asset values for the valuation were based on the asset information contained in the financial statements of the pension fund as of February 28, 2014. The actuarial value of assets was determined by smoothing unexpected gains or losses from investment return over a five-year period. The resulting actuarial value of assets is $111,954,009. The development of this value is outlined in Exhibit 2.

Exhibit 2

Actuarial Value of Assets

A. Development of Investment Gain/(Loss) for the Year Ended February 28, 2014

1. Actuarial Value of Assets as of February 28, 2013	$ 103,274,478
2. Contributions and Miscellaneous Income	11,228,545
3. Disbursements	12,455,778
4. Expected Investment Income	7,700,397
5. Actual Investment Income (Loss)	12,077,281
6. Investment Gain/(Loss) (5 – 4)	4,376,884

B. Development of Actuarial Value of Assets as of February 28, 2014

7. Expected Value of Assets (1 +2 – 3 +4)	$ 109,747,642
8. Investment Gain/(Loss) for Fiscal Year 2010 Recognized in Current Year	1,495,010
9. Investment Gain/(Loss) for Fiscal Year 2011 Recognized in Current Year	560,854
10. Investment Gain/(Loss) for Fiscal Year 2012 Recognized in Current Year	(877,764)
11. Investment Gain/(Loss) for Fiscal Year 2013 Recognized in Current Year	152,890
12. Investment Gain/(Loss) for Fiscal Year 2014 Recognized in Current Year (20% of 6)	875,377
13. Actuarial Value of Assets (7 + 8 + 9 +10 + 11 + 12)	$ 111,954,009

C. FUND PROVISIONS

Our valuation was based on the provisions of the fund in effect as of February 28, 2013 as provided in Article 4 of the Illinois Pension Code. A summary of the principal provisions of the fund is provided in Appendix 1.

D. ACTUARIAL ASSUMPTIONS AND COST METHOD

The actuarial assumptions used for the February 28, 2014 actuarial valuation are the same as those used for the February 28, 2013 actuarial valuation. The actuarial assumptions used for the February 28, 2014 actuarial valuation are summarized below:

Mortality Rates. The RP-2000 Mortality Table with Blue Collar Adjustment for Males and

Females, projected to 2014, was used for active employees and pensioners. The RP-2000 Disabled Mortality Table, projected to 2014, was used for disabled firefighters.

Termination Rates. Termination rates are used to estimate the probability that an employee will terminate employment at a given age. The following is a sample of the termination rates that were used:

Age	Rate of Termination
25	.0500
30	.0250
35	.0200
40 and above	.0100

Disability Rates. Disability rates are used to estimate the probability that an employee will become disabled at a given age. The following is a sample of the disability rates that were used:

Age	Rate of Disability
25	.0010
30	.0014
35	.0035
40	.0050
45	.0065
50	.0100
55	.0150
60	.0300
65 and above	.0425

Retirement Rates. Retirement rates are used to estimate the probability that an employee will retire at each age at which a retirement benefit is available. The following is a sample of the retirement rates that were used for the valuation:

Age	Rate of Retirement
50	.1400
55	.2000
60	.2500
65	.5000
70	1.0000

Salary Progression. 5.0% per year, compounded annually. This can be considered to consist of a 4.0% inflation assumption and 1.0% merit increase assumption.

Investment Return Rate. 7.5% per year, compounded annually.

Marital Status. 80% of participants were assumed to be married.

Spouse's Age. The age of the spouse was assumed to be 3 years younger than the age of the employee.

Actuarial Value of Assets. The actuarial value of assets was determined by smoothing unexpected gains or losses from investment return over a five-year period.

Actuarial Cost Method. Based on the requirements of Public Act 96-1495, the actuarial cost method used for the February 28, 2014 actuarial valuation is the projected unit credit cost method. This is the same cost method that was used for the February 28, 2013 actuarial valuation.

E. ACTUARIAL LIABILITY

The actuarial liability as determined under the valuation for the various classes of members is summarized in Exhibit 3. The total actuarial liability is then compared with the actuarial value of assets in order to arrive at the unfunded actuarial liability. (The actuarial terms used in this report are defined in Appendix 2.)

As of February 28, 2014 the total actuarial liability is $236,325,500, the actuarial value of assets is $111,954,009, and the unfunded actuarial liability is $124,371,491. The ratio of the actuarial value of assets to the actuarial liability, or funded ratio, is 47.4%.

Exhibit 3

Actuarial Liability as of February 28, 2014

1. Actuarial Liability For Members Receiving Benefits	
(a) Retirement Pensions	$ 137,162,647
(b) Survivor Pensions	13,714,811
(c) Disability Pensions	14,464,072
(d) Total	$ 165,341,530
2. Actuarial Liability For Inactive Members	369,983
3. Actuarial Liability For Active Members	70,613,987
4. Total Actuarial Liability	$ 236,325,500
5. Actuarial Value of Assets	111,954,009
6. Unfunded Actuarial Liability	$ 124,371,491
7. Funded Ratio	47.4%

F. RECONCILIATION OF CHANGE IN UNFUNDED LIABILTY

The net actuarial experience during the period March 1, 2013 to February 28, 2014 resulted in an increase in the fund's unfunded liability of $1,381,628. This increase in unfunded liability is a result of several kinds of gains and losses, which have an impact on the unfunded liability. The financial effect of the most significant gains and losses is illustrated in Exhibit 4.

The contribution required to keep the unfunded liability from increasing was $12,056,325, whereas the actual employer contribution was $9,599,575, resulting in an increase in the unfunded liability of $2,456,750.

The net rate of investment return earned by the fund during the year, based on the actuarial value of assets, was approximately 9.7%, in comparison to the assumed rate of 7.5%. This resulted in a decrease in the unfunded liability of $2,206,367. Salaries increased at an average rate of approximately 3.7% in comparison to the assumed rate of 5.0%. Salary increases lower than assumed resulted in a decrease in the unfunded liability of $904,906.

The various other aspects of the fund's experience resulted in an increase in the unfunded liability of $2,036,151. The aggregate financial experience of the fund resulted in an increase in the unfunded liability of $1,381,628.

Exhibit 4

Reconciliation of Change in Unfunded Liability
Over the Period March 1, 2013 to February 28, 2014

1. Unfunded Liability as of March 1, 2013	$ 122,989,863
2. Increase in Unfunded Liability Due to Employer Contribution Less Than Normal Cost Plus Interest on the Unfunded Liability	2,456,750
3. (Decrease) in Unfunded Liability Due to Investment Return Higher Than Assumed	(2,206,367)
4. (Decrease) in Unfunded Liability Due to Salary Increases Lower Than Assumed	(904,906)
5. Increase in Unfunded Liability Due to Other Sources	2,036,151
6. Net Increase in Unfunded Liability for The Year (2 + 3 + 4 + 5)	$ 1,381,628
7. Unfunded Liability as of February 28, 2014 (1 + 6)	$ 124,371,491

G. NORMAL COST

The normal cost for the year beginning March 1, 2014 is developed in Exhibit 5. For the year beginning March 1, 2014, the total normal cost is estimated to be $4,835,391, which can be expressed as 28.76% of payroll.

Exhibit 5

Normal Cost For Year Beginning March 1, 2014

	Dollar Amount	Percent of Payroll
1. Basic Retirement Pension	$ 2,656,277	15.80%
2. Annual Increases in Pension	797,595	4.74
3. Survivor's Pension	488,146	2.90
4. Disability Pension	733,777	4.36
5. Refunds	39,971	.24
6. Administrative Expenses	119,625	.71
7. Total Normal Cost	$ 4,835,391	28.76%

Note. The above figures are based on a total active payroll of $16,810,957 as of February 28, 2014.

H. ANNUAL ACTUARIAL REQUIREMENTS FOR YEAR BEGINNING MARCH 1, 2015

According to Section 5/4-118 of the Illinois Pension Code, the city council shall annually levy a tax which, when added to employee contributions, will produce an amount sufficient to meet the annual actuarial requirements of the pension fund.

Senate Bill 3538, which was signed into law as Public Act 96-1495 and became effective on January 1, 2011, made significant changes in the determination of the annual actuarial requirements of the pension fund. Under Public Act 96-1495, the annual requirements of the pension fund are to be determined as a level percent of payroll sufficient to bring the total assets of the pension fund up to 90% of the total actuarial liabilities determined under the projected unit credit actuarial cost method by the year 2040.

It is our understanding that the results of the current valuation will be used to determine the amount of tax to be levied by the City for contribution to the pension fund in the year beginning March 1, 2015. Based on the February 28, 2014 actuarial valuation and the funding provisions of Public Act 96-1495, we have therefore performed funding projections through 2040 in order to determine the required employer contribution for fiscal year 2016 which begins March 1, 2015. We have also estimated the required employer contributions for fiscal years 2017 through 2021. These required employer contributions are as follows:

Fiscal Year	Projected Payroll	Required Employer Contribution as a Percent of Payroll	Required Employer Contribution as a Dollar Amount
2016	$ 17,253,577	56.72%	$ 9,786,645
2017	17,716,980	56.72	10,049,499
2018	18,199,391	56.72	10,323,134
2019	18,721,533	56.72	10,619,305
2020	19,252,748	56.72	10,920,623
2021	19,800,804	56.72	11,231,494

Method of Calculation

The employer contribution requirements shown above have been determined using the actuarial assumptions, membership data and benefit provisions that were used for the regular actuarial valuation. However, in order to determine the contribution requirements, certain calculations needed to be made that are not normally required in a regular actuarial valuation. Benefit payout requirements, normal costs, and payroll were estimated over the 26-year period from 2015 through 2040 by projecting the membership of the system over the 26-year period, taking into account the impact of new entrants to the fund over the 26-year period.

In order to make the required projections, assumptions needed to be made regarding the age and salary distribution of new entrants as well as the size of the active membership of the fund. The assumptions regarding the profile of new entrants to the fund was based on the recent experience of the fund with regard to new entrants. The size of the active membership of the fund was assumed to remain constant over the 26-year projection period.

The year by year results of our funding projections are shown in Exhibit 6 below:

Exhibit 6

Springfield Firefighters' Pension Fund

Funding Projections to End of 2040
Based on Reduced Benefits for Employees Hired after January 1, 2011
and Changes in the Funding Provisions Provided Under Public Act 96-1495

Fiscal Year	Annual Payroll	Total Payout	Employers' Contribution	Employers' Contribution as Percent of Payroll	Actuarial Liability	Assets	Unfunded Liability	Funded Ratio
2014					$236,325,500	$111,954,009	$124,371,491	47.4%
2015	$16,810,957	$14,358,407	$9,473,179	56.35%	243,458,838	117,644,808	125,814,030	48.3%
2016	17,253,577	14,830,330	9,786,645	56.72%	250,434,686	123,080,660	127,354,026	49.1%
2017	17,716,980	15,355,581	10,049,499	56.72%	257,475,906	129,574,799	127,901,107	50.3%
2018	18,199,391	15,811,453	10,323,134	56.72%	264,693,089	136,260,595	128,432,494	51.5%
2019	18,721,533	16,306,402	10,619,305	56.72%	272,056,519	142,416,302	129,640,217	52.3%
2020	19,252,748	16,839,026	10,920,623	56.72%	279,541,239	148,844,239	130,697,000	53.2%
2021	19,800,804	17,401,491	11,231,494	56.72%	287,047,111	155,544,913	131,502,198	54.2%
2022	20,307,187	18,068,529	11,518,726	56.72%	294,416,783	162,400,966	132,015,817	55.2%
2023	20,782,735	18,677,950	11,788,469	56.72%	301,706,704	169,461,715	132,244,989	56.2%
2024	21,276,952	19,382,244	12,068,801	56.72%	308,755,820	176,655,971	132,099,849	57.2%
2025	21,738,695	20,063,155	12,330,712	56.72%	315,588,569	183,994,414	131,594,155	58.3%
2026	22,234,034	20,706,687	12,611,681	56.72%	322,256,333	191,548,420	130,707,913	59.4%
2027	22,774,255	21,413,584	12,918,107	56.72%	328,622,369	199,297,889	129,324,480	60.6%

Exhibit 6

Springfield Firefighters' Pension Fund

Funding Projections to End of 2040
Based on Reduced Benefits for Employees Hired after January 1, 2011
and Changes in the Funding Provisions Provided Under Public Act 96-1495

Fiscal Year	Annual Payroll	Total Payout	Employers' Contribution	Employers' Contribution as Percent of Payroll	Actuarial Liability	Assets	Unfunded Liability	Funded Ratio
2028	23,295,268	22,208,275	13,213,638	56.72%	334,525,950	207,151,377	127,374,573	61.9%
2029	23,803,336	22,958,686	13,501,827	56.72%	339,992,345	215,151,626	124,840,719	63.3%
2030	24,345,885	23,664,128	13,809,573	56.72%	345,048,413	223,377,830	121,670,583	64.7%
2031	24,933,852	24,365,913	14,143,083	56.72%	349,673,515	231,879,797	117,793,718	66.3%
2032	25,559,595	25,122,374	14,498,019	56.72%	353,724,467	240,645,178	113,079,289	68.0%
2033	26,182,062	25,829,249	14,851,097	56.72%	357,249,056	249,739,933	107,509,123	69.9%
2034	26,868,038	26,504,406	15,240,199	56.72%	360,245,005	259,262,651	100,982,354	72.0%
2035	27,588,108	27,070,520	15,648,641	56.72%	362,835,986	269,378,773	93,457,213	74.2%
2036	28,398,783	27,611,366	16,108,475	56.72%	365,045,321	280,218,177	84,827,144	76.8%
2037	29,280,271	28,095,657	16,608,476	56.72%	366,925,183	291,939,164	74,986,019	79.6%
2038	30,233,141	28,551,810	17,148,967	56.72%	368,503,278	304,682,777	63,820,501	82.7%
2039	31,231,966	28,874,015	17,715,525	56.72%	369,938,814	318,692,882	51,245,932	86.1%
2040	32,318,396	29,133,275	18,331,774	56.72%	371,315,114	334,183,603	37,131,511	90.0%

I. ANNUAL REQUIRED CONTRIBUTION FOR GASB STATEMENT NO. 25

GASB Statement No. 25 requires the disclosure of the annual required contribution (ARC), calculated in accordance with certain parameters. Based on the results of the February 28, 2014 actuarial valuation, we have therefore calculated the annual required contribution for the fiscal year beginning March 1, 2015. In accordance with the parameters prescribed in GASB Statement No. 25, in calculating the annual required contribution, we have used smoothed market value for the actuarial value of assets, and have amortized the unfunded liability over 25 years from March 1, 2015 as a level percent of payroll. As can be seen from Exhibit 7 below, the annual required contribution for the fiscal year beginning March 1, 2015 has been determined to be $12,653,173. Employee contributions for the year are estimated to be $1,631,326. Therefore, the employer's share of the annual required contribution is determined to be $11,021,847.

Exhibit 7

Annual Required Contribution for Year Beginning March 1, 2015

	Dollar Amount	Percent of Payroll
1. Total Normal Cost	$ 4,947,977	28.68%
2. Annual Amount Required to Amortize Unfunded Liability Over 25 Years Subsequent to March 1, 2015 as a Level Percent of Payroll	7,705,196	44.66
3. Annual Required Contribution for Year Beginning March 1, 2015 (1 + 2)	$12,653,173	73.34%
4. Employee Contributions for Year	1,631,326	9.46
5. Employer's Share of Annual Required Contribution (3 – 4)	$11,021,847	63.88%

Note. The above figures have been based on a projected payroll of $17,253,577.

J. CERTIFICATION

This actuarial report has been prepared in accordance with generally accepted actuarial principles and practices and to the best of our knowledge, fairly represents the financial condition of the Springfield Firefighters' Pension Fund as of February 28, 2014.

Respectfully submitted,

Sandor Goldstein, F.S.A.
Consulting Actuary

Appendix 1

Summary of Principal Provisions

Pension Benefits

A firefighter age 50 or over who has at least 20 years of creditable service and is no longer in service as a firefighter is entitled to a monthly pension of 1/2 of the monthly salary attached to the firefighter's rank at the date of retirement. The pension is increased 1/12 of 2.5% of such monthly salary for each additional month over 20 years of service through 30 years of service, to a maximum of 75% of such monthly salary.

Separation Benefits

A firefighter who is separated from service having at least 10 years but less than 20 years of creditable service is entitled upon attainment of age 60 to a pension based on the monthly salary attached to his or her rank in the fire service on the date of separation of service, according to the following schedule :

- For 10 years of service, 15.0% of salary;
- For 11 years of service, 17.6% of salary;
- For 12 years of service, 20.4% of salary;
- For 13 years of service, 23.4% of salary;
- For 14 years of service, 26.6% of salary;
- For 15 years of service, 30.0% of salary;
- For 16 years of service, 33.6% of salary;
- For 17 years of service, 37.4% of salary;
- For 18 years of service, 41.4% of salary;
- For 19 years of service, 47.4% of salary.

Annual Increases In Pension

The monthly pension of a firefighter who retires after January 1, 1977, shall, upon either the first of the month following the first anniversary of the date of retirement, if 55 years of age or over at retirement date, or upon the first day of the month following attainment of age 55 if it occurs after the first anniversary of retirement, be increased by 1/12 of 3% of the originally granted monthly pension for each full month that has elapsed since the pension began, and by an additional 3% in each January thereafter.

The monthly pension of a firefighter who is receiving a disability pension shall be increased in January of the year following the year the firefighter attains age 60 by 3% of the originally granted monthly pension for each year that pension payments have been made. In each January thereafter, the firefighter shall receive an additional increase of 3% of the original monthly pension.

Disability Pension

If a firefighter, as a result of an act of duty or an occupational disease, is found to be disabled for service in the fire department, the firefighter shall be granted a disability pension equal to the greater of (1) 65% of the firefighter's salary, or (2) the retirement pension that the firefighter would be eligible to receive if he or she retired. If the disability is the result of any cause, and the firefighter has a minimum of 7 years of creditable service, the disability pension is 50% of monthly salary.

In addition, any firefighter disabled by an act of duty or an occupational disease is entitled to receive a child's disability benefit of $20 a month for each dependent minor child, provided that the total benefits received does not exceed 75% of the salary he or she was receiving at the date of removal from the municipality's payroll.

Pension To Survivors

Upon the death of an active firefighter, his or her surviving spouse, is entitled to a survivor's pension of 54% of the firefighter's monthly salary. Upon the death of a disabled, or retired firefighter, his or her surviving spouse, children, or dependent parents are entitled to a survivor's pension as follows: To the surviving spouse, a monthly pension of the greater of 54% of the firefighter's monthly salary or the pension which the firefighter was receiving at the time of death, and to the guardian of each minor child, 12% of such monthly salary for each child, until attainment of age 18.

Beginning July 1, 2004, the total monthly pension payable to the surviving spouse of a firefighter who died while receiving a retirement pension, including the amount payable on account of children, shall be no less than 100% of the monthly retirement pension that the deceased firefighter was receiving at the time of death.

Contributions By Firefighters

Firefighters are required to contribute 9.455% of their salary to the pension fund as a condition of participation in the pension fund.

Persons Who First Become Participants On or After January 1, 2011

The following changes to the above provisions apply to persons who first become participants on or after January 1, 2011:

1. The highest salary for annuity purposes is equal to the average monthly salary obtained by dividing the participant's total salary during the 96 consecutive months of service within the last 120 months of service in which the total compensation was the highest by the number of months in that period.

2. For 2011, the final average salary is limited to the Social Security wage base of $106,800. Limitations for future years shall automatically be increased by the lesser of 3% or one-half of percentage change in the Consumer Price Index-U during the preceding month calendar year.
3. A participant is eligible to retire with unreduced benefits after attainment of age 55 with at least 10 years of service credit. However, a participant may elect to retire at age 50 with at least 10 years of service credit and receive a retirement annuity reduced by one-half of 1% for each month that his or her age is under 55.
4. The initial survivor's annuity is equal to 66 2/3% of the participant's earned retirement annuity at the date of death, subject to automatic annual increases of the lesser of 3% or one-half of the increase in the Consumer Price Index-U during the preceding calendar year, based on the originally granted survivor's annuity.
5. Automatic annual increases in the retirement annuity then being paid are equal to the lesser of 3% or one-half the annual change in the Consumer Price Index for all Urban Consumers, whichever is less, based on the originally granted retirement annuity.

Appendix 2

Glossary of Terms used in Report

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

2. Actuarial Cost Method or Funding Method. A procedure for determining the actuarial present value of pension plan benefits and for determining an actuarially equivalent allocation of such value to time periods. Usually in the form of a normal cost and an actuarial accrued liability.

3. Normal Cost. That portion of the actuarial present value of pension plan benefits which is allocated to a valuation year by the actuarial cost method.

4. Actuarial Accrued Liability or Accrued Liability. That portion, as determined by a particular actuarial cost method, of the actuarial present value of pension benefits which is not provided for by future normal costs.

5. Actuarial Value of Assets. The value assigned by the actuary to the assets of the pension plan for purposes of an actuarial valuation.

6. Unfunded Actuarial Liability. The excess of the actuarial liability over the actuarial value of assets.

7. Projected Unit Credit Actuarial Cost Method. A cost method under which the projected benefits of each individual included in an actuarial valuation are allocated by a consistent formula to valuation years. The actuarial present value of benefit 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 liability.

8. Actuarial Assumptions. Assumptions as to future events affecting pension costs.

9. Actuarial Valuation. The determination, as of a valuation date, of the normal cost, actuarial liability, actuarial value of assets, and related actuarial present values for the pension plan.

10. Accrued Benefit or Accumulated Plan Benefits. The amount of an individual's benefit as of a specific date determined in accordance with the terms of a pension plan and based on compensation and service to that date.

11. Vested Benefits. Benefits that are not contingent on an employee's future service.