



VILLAGE OF CARPENTERSVILLE
CARPENTERSVILLE FIREFIGHTERS PENSION FUND

Actuarial Valuation Report

For the Year

Beginning May 1, 2014

And Ending April 30, 2015

Timothy W. Sharpe, Actuary, Geneva, IL (630) 262-0600

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INTRODUCTION

Fire-sworn personnel of the Village of Carpentersville are covered by the Firefighters Pension Plan that is a defined-benefit, single-employer pension plan. The purpose of this report is to provide to the Intended Users of this report, specifically the Intended Users are the Village Officials, the Pension Board and the Village and Pension Board auditors, the reporting requirements of the Illinois Pension Code, the GASB Statements No. 25 & 27 financial information and related actuarial information for the year stated in this report. This report is not intended for distribution or usage to or by anyone who is not an Intended User and should not be used for any other purpose.

The valuation results reported herein are based on the employee data, plan provisions and the financial data provided by the Village. The actuary has relied on this information and does not assume responsibility for the accuracy or completeness of this information. I hereby certify that to the best of my knowledge this report is complete and accurate and fairly presents the actuarial position of the Fund in accordance with generally accepted actuarial principles and procedures. In my opinion, the assumptions used are reasonably related to the experience of the Plan and to reasonable expectations. A reasonable request for supplementary information not included in this report should be directed to the undersigned actuary.

The actuary cautions the Intended Users of the possibility of uncertainty or risks in any of the results in this report.

I, Timothy W. Sharpe, am an Enrolled Actuary and a member of the American Academy of Actuaries, and I meet the Qualifications Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,



Timothy W. Sharpe, EA, MAAA
Enrolled Actuary No. 14-4384

12/18/2014

Date

SUMMARY OF RESULTS

There were no material changes with respect to Plan Provisions, Actuarial Methods or Actuarial Assumptions from the prior year. However, the Village adopted the Tax Levy Requirement based on Entry Age Normal and 100% amortization. Previously, the Tax Levy Requirement was based on PA 096-1495.

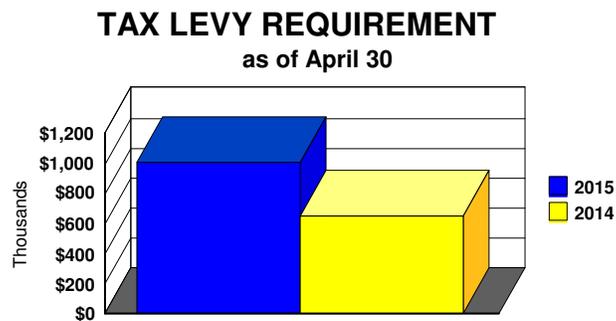
There were no unexpected changes with respect to the participants included in this actuarial valuation (0 new member, 0 terminations, 0 retirements, 0 incidents of disability, annual payroll increase 7.3%, average salary increase 7.3%).

There were no unexpected changes with respect to the Fund's investments from the prior year (annual investment return 5.65%).

The Village's Tax Levy Requirement has increased from \$654,008 (PA 096-1495) last year to \$1,010,754 (EAN, 100% amortization) this year (54.5%). The increase in the Tax Levy is due to the change from "PA 096-1495" to "EAN 100% amortization," the increase in salaries and the investment return was less than assumed. The Percent Funded has decreased from 79.2% last year to 70.6% this year.

SUMMARY OF RESULTS (Continued)

	For Year Ending April 30	
	<u>2015</u>	<u>2014</u>
Tax Levy Requirement	\$ 1,010,754	\$ 654,008
	as of May 1	
	<u>2014</u>	<u>2013</u>
Village Normal Cost	626,939	516,231
Anticipated Employee Contributions	286,674	267,172
Accrued Liability	24,413,583	20,468,175
Actuarial Value of Assets	17,230,933	16,208,828
Unfunded Accrued Liability/(Surplus)	7,182,650	4,259,347
Amortization of Unfunded Accrued Liability/(Surplus)	317,691	94,991
Percent Funded	70.6%	79.2%
Annual Payroll	\$ 3,031,982	\$ 2,825,725



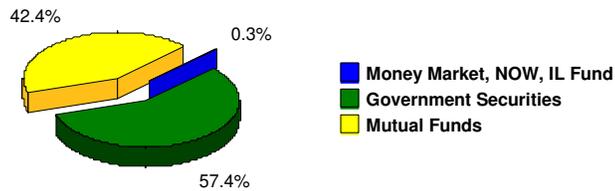
ACTUARIAL VALUATION OF ASSETS

		as of May 1	
	<u>2014</u>		<u>2013</u>
Money Market, NOW, IL Fund	\$ 43,848		\$ 120,526
Government Securities	9,736,455		9,630,997
Mutual Funds	7,185,420		6,348,506
Interest Receivable	82,365		79,476
Miscellaneous Receivable/(Payable)	<u>(5,369)</u>		<u>(3,140)</u>
Market Value of Assets	<u>17,042,719</u>		<u>16,176,364</u>
Actuarial Value of Assets	\$ 17,230,933		\$ 16,208,828

FYE 2012-2014 (Gain)/Loss: \$216,004; (\$121,422); \$218,332

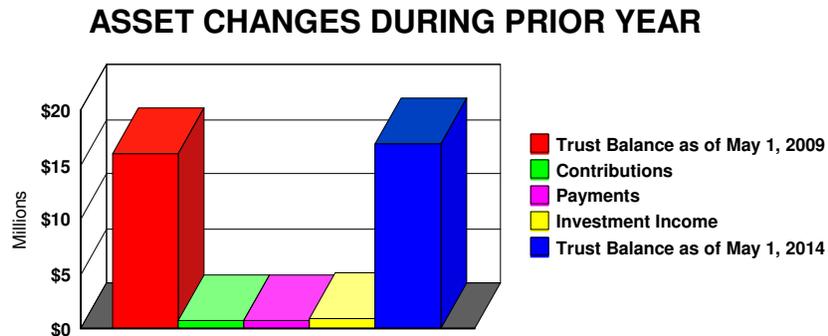
SUMMARY OF ASSETS

As Of May 1, 2014



ASSET CHANGES DURING PRIOR YEAR

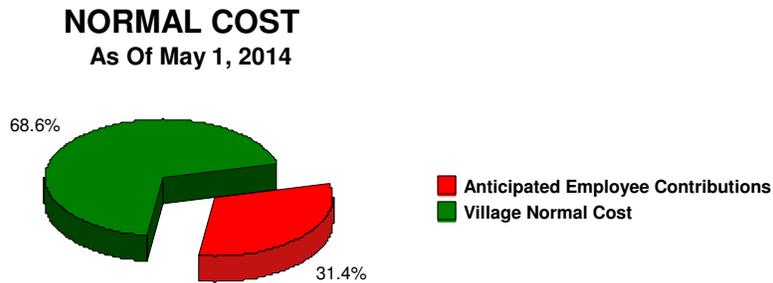
Trust Balance as of May 1, 2013		\$	16,176,364
Contributions			
Village	519,515		
Employee	<u>287,978</u>		
Total			807,493
Payments			
Benefit Payments	783,207		
Expenses	<u>70,333</u>		
Total			853,540
Investment Income			<u>912,402</u>
Trust Balance as of May 1, 2014		\$	<u>17,042,719</u>
Approximate Annual Rate of Return			5.65%



NORMAL COST

The Normal Cost is the actuarial present value of the portion of the projected benefits that are expected to accrue during the year based upon the actuarial valuation method and actuarial assumptions employed in the valuation.

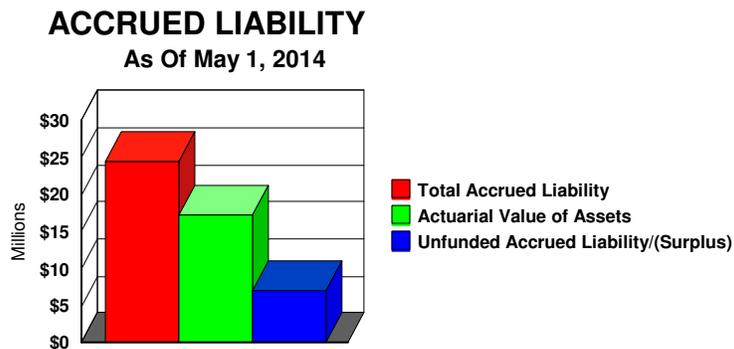
	as of May 1	
	<u>2014</u>	<u>2013</u>
Total Normal Cost	\$ 913,613	\$ 783,403
Anticipated Employee Contributions	<u>286,674</u>	<u>267,172</u>
Village Normal Cost	<u>626,939</u>	<u>516,231</u>
Normal Cost Payroll	\$ 3,031,982	\$ 2,825,725
Village Normal Cost Rate	20.68%	18.27%
Total Normal Cost Rate	30.13%	27.72%



ACCRUED LIABILITY

The Accrued Liability is the actuarial present value of the portion of the projected benefits that has been accrued as of the valuation date based upon the actuarial valuation method and actuarial assumptions employed in the valuation. The Unfunded Accrued Liability is the excess of the Accrued Liability over the Actuarial Value of Assets.

	as of May 1	
Accrued Liability	<u>2014</u>	<u>2013</u>
Active Employees	\$ 12,723,313	\$ 8,802,820
Children Annuities	9,383	10,348
Disability Annuities	3,298,787	3,277,563
Retirement Annuities	8,124,651	8,112,636
Surviving Spouse Annuities	257,449	264,808
Terminated Vested Annuities	<u>0</u>	<u>0</u>
Total Annuities	11,690,270	11,665,355
Total Accrued Liability	24,413,583	20,468,175
Actuarial Value of Assets	<u>17,230,933</u>	<u>16,208,828</u>
Unfunded Accrued Liability/(Surplus)	\$ <u>7,182,650</u>	\$ <u>4,259,347</u>
Percent Funded	70.6%	79.2%



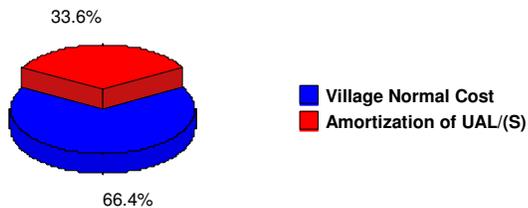
TAX LEVY REQUIREMENT

The Public Act 096-1495 Tax Levy Requirement is determined as the annual contribution necessary to fund the normal cost, plus the amount to amortize the excess (if any) of ninety percent (90%) of the accrued liability over the actuarial value of assets as a level percentage of payroll over a thirty (30) year period which commenced in 2011, plus an adjustment for interest. Prior to 2011, the amortization amount was equal to the amount to amortize the unfunded accrued liability as a level percentage of payroll over a forty (40) year period which commenced in 1993.

	For Year Ending April 30	
	<u>2015</u>	<u>2014</u>
Village Normal Cost as of Beginning of Year	\$ 626,939	\$ 516,231
Amortization of Unfunded Accrued Liability/(Surplus)	317,691	94,991
Interest for One Year	<u>66,124</u>	<u>42,786</u>
Tax Levy Requirement as of End of Year	\$ <u>1,010,754</u>	\$ <u>654,008</u>
 Public Act 096-1495 Tax Levy Requirement		
1) Normal Cost (PUC)	591,611	516,231
2) Accrued Liability (PUC)	22,069,970	20,468,175
3) Amortization Payment	116,416	94,991
4) Interest for One Year	49,562	42,786
5) PA 096-1495 Tax Levy Requirement (1 + 3 + 4)	\$ 757,589	654,008

TAX LEVY REQUIREMENT

For Fiscal Year Ending April 30, 2015



SUMMARY OF PLAN PARTICIPANTS

The actuarial valuation of the Plan is based upon the employee data furnished by the Village.
 The information provided for Active participants included:

- Name
- Sex
- Date of Birth
- Date of Hire
- Compensation
- Employee Contributions

The information provided for Inactive participants included:

- Name
- Sex
- Date of Birth
- Date of Pension Commencement
- Monthly Pension Benefit
- Form of Payment

Membership	<u>2014</u>	<u>2014</u>	<u>2013</u>	<u>2013</u>
Current Employees				
Vested	19		17	
Nonvested	<u>17</u>		<u>19</u>	
Total	<u>36</u>		<u>36</u>	
Inactive Participants		<u>Annual Benefits</u>		<u>Annual Benefits</u>
Children	7 \$	1,958	7 \$	1,900
Disabled Employees	4	190,020	4	190,020
Retired Employees	9	575,616	9	556,927
Surviving Spouses	1	30,056	1	30,056
Terminated Vesteds	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	<u>21</u>	<u>797,650</u>	<u>21</u>	<u>778,903</u>
Annual Payroll	\$	3,031,982	\$	2,825,725

SUMMARY OF PLAN PARTICIPANTS (Continued)

Age and Service Distribution

Service Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total	Salary
20-24									
25-29	2	1						3	75,795
30-34	1	3						4	77,847
35-39	1	6	7					14	82,158
40-44		2	2	2				6	87,452
45-49			1		1	1		3	87,915
50-54			1	1	1			3	101,320
55-59		1	1	1				3	83,526
60+									
Total	<u>4</u>	<u>13</u>	<u>12</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>36</u>	<u>84,222</u>
Salary	72,748	78,677	87,483	91,555	104,408	93,363			

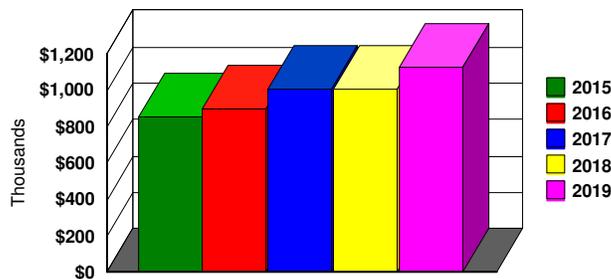
Average Age: 40.1 Average Service: 10.6

DURATION (years) Active Members: 21.8 Retired Members: 11.2 All Members: 16.2

PROJECTED PENSION PAYMENTS

<u>2015</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
\$855,090	\$902,629	\$1,008,605	\$1,009,707	\$1,123,747

**PROJECTED PENSION PAYMENTS
2015-2019**



SUMMARY OF PLAN PROVISIONS

The Plan Provisions have not been changed from the prior year.

The Village of Carpentersville Firefighters Pension Fund was created and is administered as prescribed by "Article 4. Firefighters' Pension Fund - Municipalities 500,000 and Under" of the Illinois Pension Code (Illinois Compiled Statutes, 1992, Chapter 40). A brief summary of the plan provisions is provided below.

Employees attaining the age of (50) or more with (20) or more years of creditable service are entitled to receive an annual retirement benefit of one-half of the salary attached to the rank held on the last day of service. The pension shall be increased by (1/12) of (2.5%) of such monthly salary for each additional month of service over (20) years up to (30) years, to a maximum of (75%) of such monthly salary.

Employees with at least (10) years but less than (20) years of credited service may retire at or after age (60) and receive a reduced benefit ranging from (15%) of final salary for (10) years of service to (45.6%) for 19 years of service.

Surviving spouses receive (100%) of final salary for fatalities resulting from an act of duty, or otherwise the greater of (54%) of final salary or the monthly retirement pension that the deceased firefighter was receiving at the time of death. Surviving children receive (12%) of final salary. The maximum family survivor benefit is (75%) of final salary.

Employees disabled in the line of duty receive (65%) of final salary.

The monthly pension of a covered employee who retired with (20) or more years of service after January 1, 1977, shall be increased annually, following the first anniversary date of retirement and be paid upon reaching the age of at least (55) years, by (3%) of the amount of the pension payable at the time of the increase.

Employees are required to contribute (9.455%) of their base salary to the Firefighters' Pension Plan. If an employee leaves covered employment with less than twenty (20) years of service, accumulated employee contributions may be refunded without accumulated interest.

For Employees hired after January 1, 2011, the annual retirement benefit is (2.5%) of final average salary for each year of service up to (30) years, to a maximum of (75%) of such salary, the Normal Retirement age is attainment of age 55 and completion of 10 years of service; Early Retirement age is attainment of age 50, completion of 10 years of service and the Early Retirement Factor is 6% per year; the Employee's Accrued Benefit is based on the Employee's final 8-year average salary not to exceed \$106,800 (as indexed); Cost-of-living adjustments are simple increases (not compounded) of the lesser of 3% or 50% of CPI beginning the later of the anniversary date and age 60; Surviving Spouse's Benefits are 66 2/3% of the Employee's benefit at the time of death.

ACTUARIAL METHODS

The Actuarial Methods employed for this valuation are as follows:

Projected Unit Credit Cost Method (for years beginning on or after 2011 for PA 096-1495)

Under the Projected Unit Credit Cost Method, the Normal Cost is the present value of the projected benefit (including projected salary increases) earned during the year.

The Accrued Liability is the present value of the projected benefit (including projected salary increases) earned as of the actuarial valuation date. The Unfunded Accrued Liability is the excess of the Accrued Liability over the plan's assets. Experience gains or losses adjust the Unfunded Accrued Liability.

Entry Age Normal Cost Method

Under the Entry Age Normal Cost Method the Normal Cost for each participant is computed as the level percentage of pay which, if paid from the earliest age the participant is eligible to enter the plan until retirement or termination, will accumulate with interest to sufficiently fund all benefits under the plan. The Normal Cost for the plan is determined as the greater of a) the sum of the Normal Costs for all active participants, and b) 17.5% of the total payroll of all active participants.

The Accrued Liability is the theoretical amount that would have accumulated had annual contributions equal to the Normal Cost been paid. The Unfunded Accrued Liability is the excess of the Accrued Liability over the plan's assets. Experience gains or losses adjust the Unfunded Accrued Liability.

ACTUARIAL ASSUMPTIONS

The Actuarial Assumptions used for determining the Tax Levy Requirement and GASB Statements No. 25 & 27 Disclosure Information are the same (except where noted) and have not been materially changed from the prior year. The methods and assumptions disclosed in this report may reflect statutory requirements and may reflect the responsibility of the Principal and its advisors. Unless specifically noted otherwise, each economic and demographic assumption was selected in accordance with Actuarial Standards of Practice 27 and 35 and may reflect the views and advice of advisors to the Principal. In the event a method or assumption conflicts with the actuary's professional judgment, the method or assumption is identified in this report. The Actuarial Assumptions employed for this valuation are as follows:

Valuation Date	May 1, 2014
Asset Valuation Method	5-year Average Market Value (PA 096-1495)
Investment Return	7.00% net of investment expenses.
Salary Scale	5.50%
Mortality	RP 2000 Mortality Table (BCA, +1M, -4F, 2x>105), adjusted for future mortality improvement using 1-year setback after 15 years.
Withdrawal	Based on studies of the Fund and the Department of Insurance, Sample Rates below
Disability	Based on studies of the Fund and the Department of Insurance, Sample Rates below
Retirement	Uniform distribution from ages 50-62 (100% by age 62)
Marital Status	80% Married, Female spouses 3 years younger

ACTUARIAL ASSUMPTIONS (Continued)

<u>Sample Annual Rates Per 100 Participants</u>				
<u>Age</u>	<u>Mortality</u>	<u>Withdrawal</u>	<u>Disability</u>	<u>Retirement</u>
20	0.04	4.02	0.17	
25	0.04	3.45	0.19	
30	0.08	2.56	0.20	
35	0.12	1.79	0.24	
40	0.14	1.14	0.30	
45	0.19	0.62	0.41	
50	0.27		0.62	20.00
55	0.50		1.09	41.67
60	0.94		1.84	83.33
62	1.23			100.00

GASB STATEMENTS NO. 25 & 27 DISCLOSURE INFORMATION

The Governmental Accounting Standards Board (GASB) issued Statements No. 25 & 27 that established generally accepted accounting principles for the annual financial statements for defined benefit pension plans. The required information is as follows:

Membership in the plan consisted of the following as of:

	<u>April 30, 2014</u>	<u>April 30, 2013</u>
Retirees and beneficiaries receiving benefits	21	21
Terminated plan members entitled to but not yet receiving benefits	0	0
Active vested plan members	19	17
Active nonvested plan members	<u>17</u>	<u>19</u>
Total	<u>57</u>	<u>57</u>
Number of participating employers	1	1

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) -Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
04/30/12	14,998,520	18,894,580	3,896,060	79.4%	2,910,441	133.9%
04/30/13	16,176,364	20,468,175	4,291,811	79.0%	2,825,725	151.9%
04/30/14	17,042,719	24,413,583	7,370,864	69.8%	3,031,982	243.1%

GASB STATEMENTS NO. 25 & 27 DISCLOSURE INFORMATION (Continued)

ANNUAL PENSION COST AND NET PENSION OBLIGATION

	<u>April 30, 2014</u>	<u>April 30, 2013</u>
Annual required contribution	840,509	830,749
Interest on net pension obligation	110,296	81,662
Adjustment to annual required contribution	<u>(68,610)</u>	<u>(49,370)</u>
Annual pension cost	882,195	863,041
Contributions made	<u>519,515</u>	<u>453,980</u>
Increase (decrease) in net pension obligation	362,680	409,061
Net pension obligation beginning of year	<u>1,575,655</u>	<u>1,166,594</u>
Net pension obligation end of year	<u>1,938,335</u>	<u>1,575,655</u>

THREE-YEAR TREND INFORMATION

Fiscal Year <u>Ending</u>	Annual Pension Cost (APC) <u>Cost (APC)</u>	Percentage of APC <u>Contributed</u>	Net Pension Obligation <u>Obligation</u>
04/30/12	972,072	77.7%	1,166,594
04/30/13	863,041	52.6%	1,575,655
04/30/14	882,195	58.9%	1,938,335

GASB STATEMENTS NO. 25 & 27 DISCLOSURE INFORMATION (Continued)

FUNDING POLICY AND ANNUAL PENSION COST

Contribution rates:

Village	17.135%	16.066%
Plan members	9.455%	Same
Annual pension cost	882,195	863,041
Contributions made	519,515	453,980
Actuarial valuation date	04/30/2014	04/30/2013
Actuarial cost method	Entry age	Same
Amortization period	Level percentage of pay, closed	Same
Remaining amortization period	27 years	28 years
Asset valuation method	Market	Same
Actuarial assumptions:		
Investment rate of return*	7.00%	Same
Projected salary increases*	5.50%	Same
*Includes inflation at	3.00%	Same
Cost-of-living adjustments	Tier 1: 3.00% per year, compounded Tier 2: 2.00% per year, simple	Same