



VILLAGE OF CARPENTERSVILLE
CARPENTERSVILLE FIREFIGHTERS PENSION FUND

Actuarial Valuation Report

For the Year

Beginning May 1, 2013

And Ending April 30, 2014

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 disclose the Tax Levy Requirement and GASB Statements No. 25 & 27 financial information and related actuarial information for the year beginning May 1, 2013, and ending April 30, 2014.

The valuation results reported herein are based on plan provisions in effect as of May 1, 2013, the employee data furnished by the Village, the financial data provided by the Fund's trustee and the actuarial methods and assumptions described later in this report. 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 as of April 30, 2013, 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.

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. 11-4384

10/18/2013

Date

SUMMARY OF RESULTS

There was a change with respect to Actuarial Assumptions from the prior year to reflect revised expectations with respect to mortality rates. The mortality rate assumption has been changed to the RP 2000 Mortality Table from the 1971 GA Mortality Table.

There were no changes with respect to Plan Provisions or Actuarial Methods from the prior year.

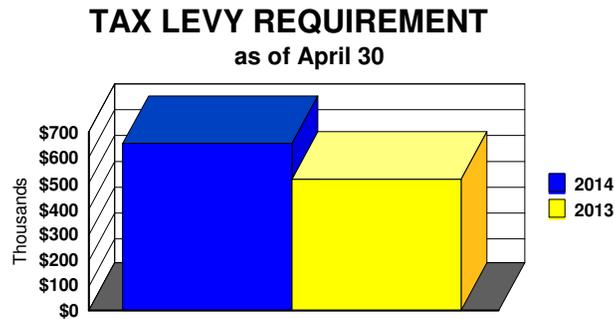
There were no unexpected changes with respect to the participants included in this actuarial valuation (0 new member, 1 termination, 1 retirement, 0 incidents of disability, annual payroll increase -2.9%, average salary increase 3.6%).

There were no unexpected changes with respect to the Fund's investments from the prior year (annual investment return 7.81%).

The Village's Tax Levy Requirement has increased from \$519,515 last year to \$654,008 this year (25.9%). The increase in the Tax Levy is due to the increase in salaries and the change to the mortality table. The Percent Funded has decreased from 80.3% last year to 79.2% this year.

SUMMARY OF RESULTS (Continued)

	For Year Ending April 30	
	<u>2014</u>	<u>2013</u>
Tax Levy Requirement	\$ 654,008	\$ 519,515
	as of May 1	
	<u>2013</u>	<u>2012</u>
Village Normal Cost	516,231	409,009
Anticipated Employee Contributions	267,172	275,182
Accrued Liability	20,468,175	18,894,580
Actuarial Value of Assets	16,208,828	15,171,323
Unfunded Accrued Liability/(Surplus)	4,259,347	3,723,257
Amortization of Unfunded Accrued Liability/(Surplus)	94,991	76,519
Percent Funded	79.2%	80.3%
Annual Payroll	\$ 2,825,725	\$ 2,910,441



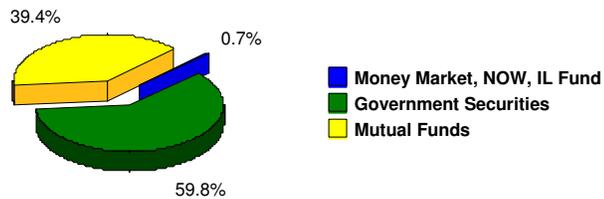
ACTUARIAL VALUATION OF ASSETS

		as of May 1	
		<u>2013</u>	<u>2012</u>
Money Market, NOW, IL Fund	\$	120,526	\$ 330,307
Government Securities		9,630,997	9,219,236
Mutual Funds		6,348,506	5,354,257
Contribution Receivable		0	12,615
Interest Receivable		79,476	89,183
Miscellaneous Receivable/(Payable)		<u>(3,140)</u>	<u>(7,078)</u>
Market Value of Assets		<u>16,176,364</u>	<u>14,998,520</u>
Actuarial Value of Assets	\$	16,208,828	\$ 15,171,323

FYE 2012-2013 (Gain)/Loss: \$216,004; (\$121,422)

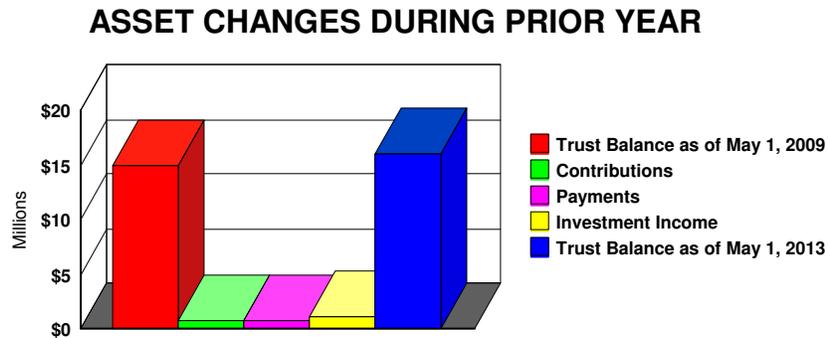
SUMMARY OF ASSETS

As Of May 1, 2013



ASSET CHANGES DURING PRIOR YEAR

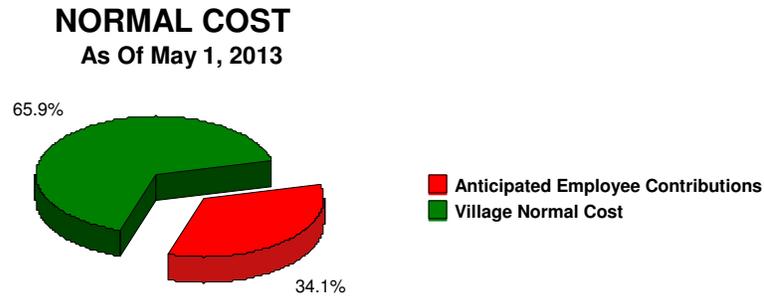
Trust Balance as of May 1, 2012		\$	14,998,520
Contributions			
Village	453,980		
Employee	<u>280,946</u>		
Total			734,926
Payments			
Benefit Payments	661,581		
Expenses	<u>67,040</u>		
Total			728,621
Investment Income			<u>1,171,539</u>
Trust Balance as of May 1, 2013		\$	<u>16,176,364</u>
Approximate Annual Rate of Return			7.81%



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.

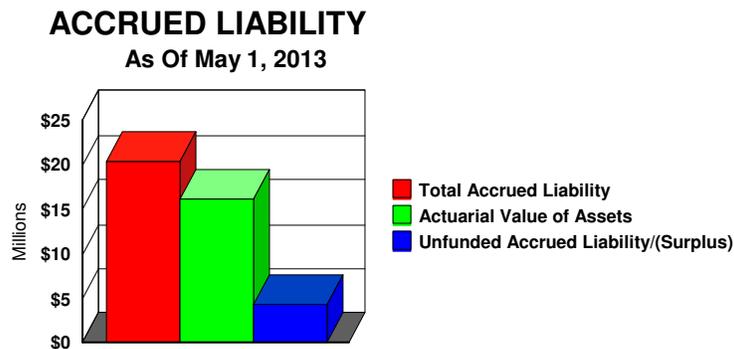
	as of May 1	
	<u>2013</u>	<u>2012</u>
Total Normal Cost	\$ 783,403	\$ 684,191
Anticipated Employee Contributions	<u>267,172</u>	<u>275,182</u>
Village Normal Cost	<u>516,231</u>	<u>409,009</u>
Normal Cost Payroll	\$ 2,825,725	\$ 2,910,441
Village Normal Cost Rate	18.27%	14.05%
Total Normal Cost Rate	27.72%	23.51%



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>2013</u>	<u>2012</u>
Active Employees	\$ 8,802,820	\$ 9,147,417
Children Annuities	10,348	11,171
Disability Annuities	3,277,563	3,180,045
Retirement Annuities	8,112,636	6,555,947
Surviving Spouse Annuities	264,808	0
Terminated Vested Annuities	<u>0</u>	<u>0</u>
Total Annuities	11,665,355	9,747,163
Total Accrued Liability	20,468,175	18,894,580
Actuarial Value of Assets	<u>16,208,828</u>	<u>15,171,323</u>
Unfunded Accrued Liability/(Surplus)	\$ <u>4,259,347</u>	\$ <u>3,723,257</u>
Percent Funded	79.2%	80.3%

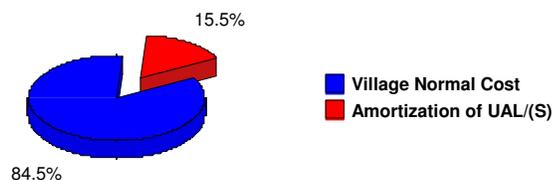


TAX LEVY REQUIREMENT

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>2014</u>	<u>2013</u>
Village Normal Cost as of Beginning of Year	\$ 516,231	\$ 409,009
Amortization of Unfunded Accrued Liability/(Surplus)	94,991	76,519
Interest for One Year	<u>42,786</u>	<u>33,987</u>
Tax Levy Requirement as of End of Year	\$ <u>654,008</u>	\$ <u>519,515</u>
 Public Act 096-1495 Tax Levy Requirement		
1) Normal Cost (PUC)	516,231	409,009
2) Accrued Liability (PUC)	20,468,175	18,894,580
3) Amortization Payment	94,991	76,519
4) Interest for One Year	42,786	33,987
5) PA 096-1495 Tax Levy Requirement (1 + 3 + 4)	\$ 654,008	519,515

TAX LEVY REQUIREMENT For Fiscal Year Ending April 30, 2014



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>2013</u>	<u>2013</u>	<u>2012</u>	<u>2012</u>
Current Employees				
Vested	17		17	
Nonvested	<u>19</u>		<u>21</u>	
Total	<u>36</u>		<u>38</u>	
Inactive Participants		<u>Annual Benefits</u>		<u>Annual Benefits</u>
Children	7 \$	1,900	7 \$	1,845
Disabled Employees	4	190,020	4	190,020
Retired Employees	9	556,927	9	481,636
Surviving Spouses	1	30,056	0	0
Terminated Vesteds	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	<u>21</u>	<u>778,903</u>	<u>20</u>	<u>673,501</u>
Annual Payroll	\$	2,825,725	\$	2,910,441

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	4							4	67,318
30-34	1	5	3					9	74,968
35-39	1	4	4					9	79,694
40-44	1	2	1	2				6	78,722
45-49			1		1	1		3	88,976
50-54			1	1				2	94,167
55-59		1	2					3	78,966
60+									
Total	<u>7</u>	<u>12</u>	<u>12</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>36</u>	<u>78,492</u>
Salary	67,155	74,797	83,551	94,776	85,564	85,572			

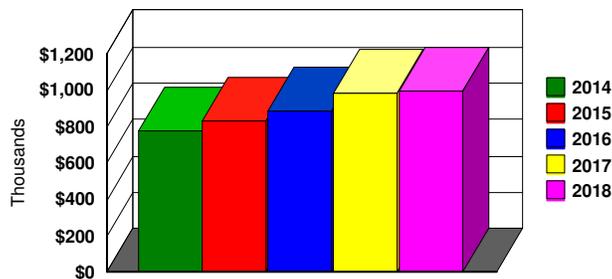
Average Age: 39.1 Average Service: 9.6

DURATION (years) Active Members: 22.4 Retired Members: 11.4 All Members: 16.2

PROJECTED PENSION PAYMENTS

<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
\$778,904	\$839,505	\$886,470	\$991,239	\$993,083

**PROJECTED PENSION PAYMENTS
2014-2018**



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 been changed from the prior year (discussion on page 4). The methods and assumptions disclosed in this report may reflect statutory requirements and may reflect the responsibility of the Principal and its advisors. 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, 2013
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). There is no margin for future mortality improvement beyond the valuation date.
Withdrawal	State of Illinois DOI Experience Rates
Disability	State of Illinois DOI Experience Rates
Retirement	State of Illinois DOI Experience Rates (100% by Age 62)
Marital Status	80% Married, Female spouses 3 years younger
Plan Expenses	None

Sample Annual Rates Per 100 Participants

<u>Age</u>	<u>Mortality</u>	<u>Withdrawal</u>	<u>Disability</u>	<u>Retirement</u>
20	0.04	4.02	0.17	
30	0.08	2.56	0.20	
40	0.14	1.14	0.30	
50	0.27		0.62	20.00
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, 2013</u>	<u>April 30, 2012</u>
Retirees and beneficiaries receiving benefits	21	20
Terminated plan members entitled to but not yet receiving benefits	0	0
Active vested plan members	17	17
Active nonvested plan members	<u>19</u>	<u>21</u>
Total	<u>57</u>	<u>58</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)
04/30/11	13,903,949	18,200,636	4,296,687	76.4%	2,787,939	154.1%
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%

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

ANNUAL PENSION COST AND NET PENSION OBLIGATION

	<u>April 30, 2013</u>	<u>April 30, 2012</u>
Annual required contribution	830,749	944,684
Interest on net pension obligation	81,662	66,519
Adjustment to annual required contribution	<u>(49,370)</u>	<u>(39,131)</u>
Annual pension cost	863,041	972,072
Contributions made	<u>453,980</u>	<u>755,748</u>
Increase (decrease) in net pension obligation	409,061	216,324
Net pension obligation beginning of year	<u>1,166,594</u>	<u>950,270</u>
Net pension obligation end of year	<u>1,575,655</u>	<u>1,166,594</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>
04/30/11	738,700	97.6%	950,270
04/30/12	972,072	77.7%	1,166,594
04/30/13	863,041	52.6%	1,575,655

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

FUNDING POLICY AND ANNUAL PENSION COST

Contribution rates:

Village	16.066%	25.967%
Plan members	9.455%	Same
Annual pension cost	863,041	972,072
Contributions made	453,980	755,748
Actuarial valuation date	04/30/2013	04/30/2012
Actuarial cost method	Entry age	Same
Amortization period	Level percentage of pay, closed	Same
Remaining amortization period	28 years	29 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	3.00% per year	Same