



**VILLAGE OF CARPENTERSVILLE**  
**CARPENTERSVILLE FIREFIGHTERS PENSION FUND**

Actuarial Valuation Report

For the Year

Beginning May 1, 2011

And Ending April 30, 2012

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

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## INTRODUCTION

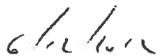
Fire-sworn personnel of the Village of Carpentersville are covered by the Firefighters Pension Plan that is a defined-benefit, single-employer pension plan. The purpose of this report is to disclose the Tax Levy Requirement and GASB Statements No. 25 & 27 financial information and related actuarial information for the year beginning May 1, 2011, and ending April 30, 2012.

The valuation results reported herein are based on plan provisions in effect as of May 1, 2011, 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 this report is complete and accurate and fairly presents the actuarial position of the Fund as of April 30, 2011, 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.

Respectfully submitted,



Timothy W. Sharpe, EA, MAAA  
Enrolled Actuary No. 11-4384



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Date

## SUMMARY OF RESULTS

The provisions of Public Act 096-1495 are reflected in this actuarial report, including changes to benefit provisions (page 13), the actuarial methods (page 14), and the amortization period and method (page 10).

There were no changes with respect to Actuarial Assumptions from the prior year.

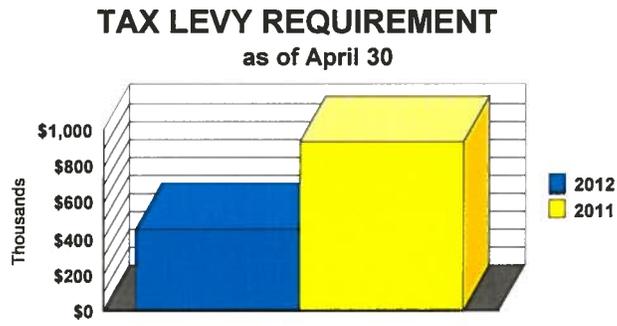
There were no unexpected changes with respect to the participants included in this actuarial valuation (3 new members, 0 terminations, 4 retirements, 0 incidents of disability, annual payroll increase -5.3%, average salary increase 1.2%).

There were no unexpected changes with respect to the Fund's investments from the prior year (annual investment return 10.40%).

The Village's Tax Levy Requirement has decreased from \$944,684 last year to \$453,980 this year (51.9%). The decrease in the Tax Levy is due to the changes referenced above, the investment return was greater than assumed and salaries increased less than assumed. The Percent Funded has increased from 66.1% last year to 76.4% this year.

SUMMARY OF RESULTS (Continued)

	For Year Ending April 30	
	<u>2012</u>	<u>2011</u>
Tax Levy Requirement	\$ 453,980	\$ 944,684
		as of May 1
	<u>2011</u>	<u>2010</u>
Village Normal Cost	323,725	566,223
Anticipated Employee Contributions	263,600	278,211
Accrued Liability	18,200,636	18,494,208
Actuarial Value of Assets	13,903,949	12,261,276
Unfunded Accrued Liability/(Surplus)	4,296,687	6,232,932
Amortization of Unfunded Accrued Liability/(Surplus)	100,555	316,659
Percent Funded	76.4%	66.3%
Annual Payroll	\$ 2,787,939	\$ 2,942,475

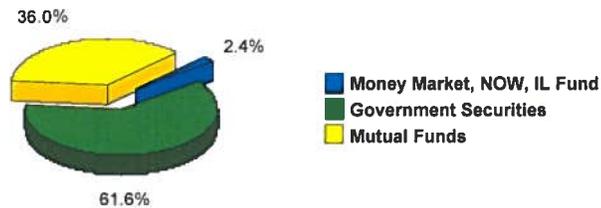


## ACTUARIAL VALUATION OF ASSETS

		as of May 1	
	<u>2011</u>		<u>2010</u>
Money Market, NOW, IL Fund	\$ 335,376	\$	169,213
Government Securities	8,512,276		7,673,602
Mutual Funds	4,972,831		4,341,189
Interest Receivable	86,523		86,082
Miscellaneous Receivable/(Payable)	<u>(3,058)</u>		<u>(8,809)</u>
Actuarial Value of Assets	\$ <u>13,903,949</u>	\$	<u>12,261,276</u>

### SUMMARY OF ASSETS

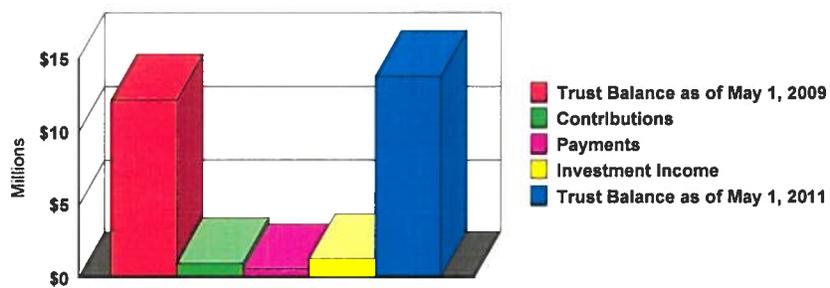
As Of May 1, 2011



## ASSET CHANGES DURING PRIOR YEAR

Trust Balance as of May 1, 2010		\$	12,261,276
<b>Contributions</b>			
Village	720,927		
Employee	<u>272,546</u>		
Total			993,473
<b>Payments</b>			
Benefit Payments	585,091		
Expenses	<u>58,624</u>		
Total			643,715
Investment Income			<u>1,292,914</u>
Trust Balance as of May 1, 2011		\$	<u>13,903,949</u>
Approximate Annual Rate of Return			10.40%

### ASSET CHANGES DURING PRIOR YEAR

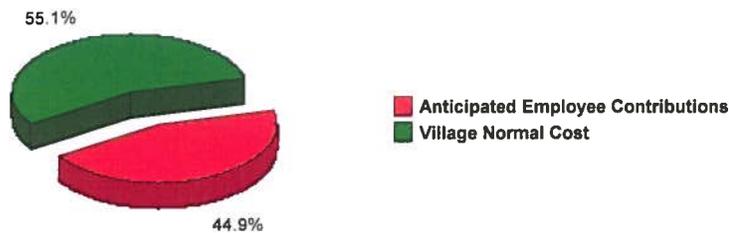


## NORMAL COST

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>2011</u>	<u>2010</u>
Total Normal Cost	\$	587,325	\$ 844,434
Anticipated Employee Contributions		<u>263,600</u>	<u>278,211</u>
Village Normal Cost		<u>323,725</u>	<u>566,223</u>
Normal Cost Payroll	\$	2,787,939	\$ 2,942,475
Village Normal Cost Rate		11.61%	19.24%
Total Normal Cost Rate		21.07%	28.70%

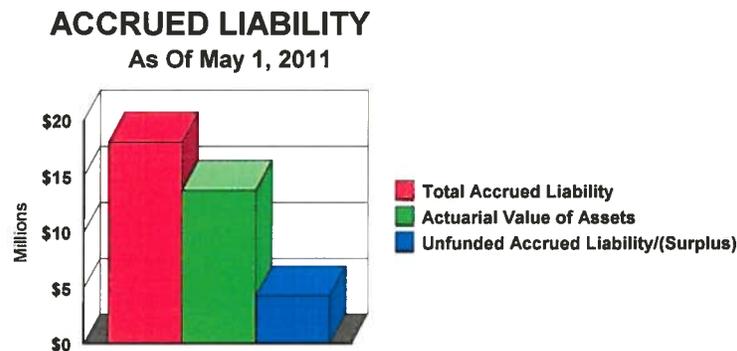
### NORMAL COST As Of May 1, 2011



## 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>2011</u>	<u>2010</u>
Active Employees	\$ 8,309,805	\$ 11,127,051
Children Annuities	11,907	8,754
Disability Annuities	3,195,398	3,153,045
Retirement Annuities	6,460,147	4,011,625
Surviving Spouse Annuities	0	193,733
Terminated Vested Annuities	<u>223,379</u>	<u>0</u>
Total Annuities	9,890,831	7,367,157
Total Accrued Liability	18,200,636	18,494,208
Actuarial Value of Assets	<u>13,903,949</u>	<u>12,261,276</u>
Unfunded Accrued Liability/(Surplus)	\$ <u>4,296,687</u>	\$ <u>6,232,932</u>
Percent Funded	76.4%	66.3%

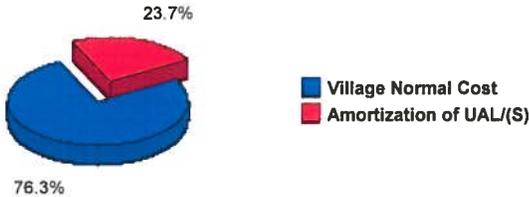


**TAX LEVY REQUIREMENT**

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>2012</u>	<u>2011</u>
Village Normal Cost as of Beginning of Year	\$ 323,725	\$ 566,223
Amortization of Unfunded Accrued Liability/(Surplus)	100,555	316,659
Interest for One Year	<u>29,700</u>	<u>61,802</u>
Tax Levy Requirement as of End of Year	\$ <u>453,980</u>	\$ <u>944,684</u>
 Public Act 096-1495 Tax Levy Requirement		
1) Normal Cost (PUC)	323,725	
2) Accrued Liability (PUC)	18,200,636	
3) Amortization Payment	100,555	
4) Interest for One Year	29,700	
5) PA 096-1495 Tax Levy Requirement	\$ 453,980	
(1 + 3 + 4)		

**TAX LEVY REQUIREMENT**  
For Fiscal Year Ending April 30, 2012



## 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>2011</u>	<u>2011</u>	<u>2010</u>	<u>2010</u>
Current Employees				
Vested	12		16	
Nonvested	<u>25</u>		<u>22</u>	
Total	<u>37</u>		<u>38</u>	
Inactive Participants		<u>Annual Benefits</u>		<u>Annual Benefits</u>
Children	7 \$	1,798	5 \$	1,258
Disabled Employees	4	191,811	4	190,020
Retired Employees	9	464,849	6	319,302
Surviving Spouses	0	0	1	34,812
Terminated Vesteds	<u>1</u>	<u>18,383</u>	<u>0</u>	<u>0</u>
Total	<u>21</u>	<u>676,841</u>	<u>16</u>	<u>545,392</u>
Annual Payroll	\$	2,787,939	\$	2,942,475

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	1							1	59,632
25-29	3							3	53,493
30-34	7	6	1					14	71,253
35-39	1	1	3					5	81,263
40-44	1	2	2		1			6	76,871
45-49		1		1	1			3	91,278
50-54		1	1				1	3	91,186
55-59		1	1					2	77,680
60+									
<b>Total</b>	<u>13</u>	<u>12</u>	<u>8</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>1</u>	<u>37</u>	<u>75,350</u>
<b>Salary</b>	62,292	77,483	82,488	98,144	85,897		118,508		

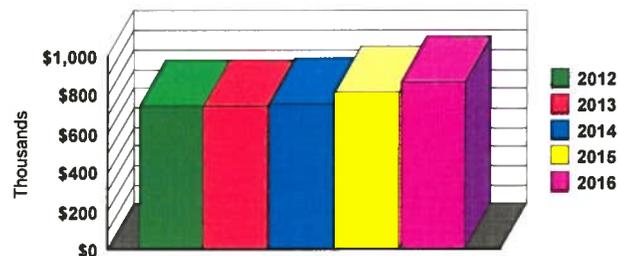
Average Age: 37.5      Average Service: 8.2

DURATION (years)    Active Members: 19.2    Retired Members: 10.6    All Members: 14.6

PROJECTED PENSION PAYMENTS

<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
\$747,339	\$745,316	\$761,030	\$822,679	\$865,984

**PROJECTED PENSION PAYMENTS  
2012-2016**



## SUMMARY OF PLAN PROVISIONS

The Plan Provisions have been changed from the prior year (discussion at page 4).

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 and have not been changed from the prior year. The Actuarial Assumptions employed for this valuation are as follows:

Valuation Date	May 1, 2011
Asset Valuation Method	Market Value
Investment Return	7.00%
Salary Scale	5.50%
Mortality	1971 Group Annuity Mortality Table
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, Spouse Same Age
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	0.05	4.02	0.17	
30	0.81	2.56	0.20	
40	0.16	1.14	0.30	
50	0.53		0.62	20.00
60	1.31		1.84	83.33
62	1.59			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, 2011</u>	<u>April 30, 2010</u>
Retirees and beneficiaries receiving benefits	20	16
Terminated plan members entitled to but not yet receiving benefits	1	0
Active vested plan members	12	16
Active nonvested plan members	<u>25</u>	<u>22</u>
Total	<u>58</u>	<u>54</u>
Number of participating employers	1	1

## SCHEDULE OF FUNDING PROGRESS

	Actuarial Value of Assets	Actuarial Accrued Liability (AAL) -Entry Age	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
<u>Date</u>	<u>(a)</u>	<u>(b)</u>	<u>(b-a)</u>	<u>(a/b)</u>	<u>(c)</u>	<u>((b-a)/c)</u>
04/30/08	10,025,463	13,133,495	3,108,032	76.3%	2,851,584	109.0%
04/30/10	12,261,276	18,494,208	6,232,932	66.3%	2,942,475	211.8%
04/30/11	13,903,949	18,200,636	4,296,687	76.4%	2,787,939	154.1%

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

ANNUAL PENSION COST AND NET PENSION OBLIGATION

	<u>April 30, 2011</u>	<u>April 30, 2010</u>
Annual required contribution	721,243	721,243
Interest on net pension obligation	65,275	63,656
Adjustment to annual required contribution	<u>(47,818)</u>	<u>(44,988)</u>
Annual pension cost	738,700	739,911
Contributions made	<u>720,927</u>	<u>716,781</u>
Increase (decrease) in net pension obligation	17,773	23,130
Net pension obligation beginning of year	<u>932,497</u>	<u>909,367</u>
Net pension obligation end of year	<u>950,270</u>	<u>932,497</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>
04/30/08	686,164	80.4%	909,367
04/30/10	739,911	96.9%	932,497
04/30/11	738,700	97.6%	950,270

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

FUNDING POLICY AND ANNUAL PENSION COST

Contribution rates:

Village	25.859%	24.360%
Plan members	9.455%	Same

Annual pension cost	738,700	739,911
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Contributions made	720,927	716,781
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Actuarial valuation date	04/30/2011	04/30/2010
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Actuarial cost method	Entry age	Same
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Amortization period	Level percentage of pay, closed	Same
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Remaining amortization period	30 years	23 years
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Asset valuation method	Market	Same
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Actuarial assumptions:

Investment rate of return*	7.00%	Same
Projected salary increases*	5.50%	Same

*Includes inflation at	3.00%	Same
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Cost-of-living adjustments	3.00% per year	Same
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