



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

Actuarial Valuation Report

For the Year

Beginning May 1, 2004

And Ending April 30, 2005

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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, 2004, and ending April 30, 2005.

The valuation results reported herein are based on plan provisions in effect as of May 1, 2004, 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, 2004, 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. 05-4384

4/29/05

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Date

## SUMMARY OF RESULTS

There were no changes with respect to Plan Provisions, Actuarial Methods, or Actuarial Assumptions from the prior year. The last actuarial valuation was completed two years ago (2002).

There were no unexpected changes with respect to the participants included in this actuarial valuation (5 new members, 1 termination, 0 retirements, 0 incidents of disability, 2-year annual payroll increase 26.4%, 2-year average salary increase 16.8%).

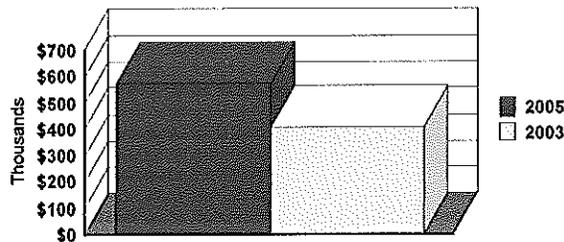
There were no unexpected changes with respect to the Fund's investments from the prior year (annual investment return 5.48%).

The Village's Tax Levy Requirement has increased from \$413,176 (2002) to \$575,516 this year (39.3%). The increase in the Tax Levy is due to the increase in salaries and the investment returns were less than expected. The Percent Funded has decreased from 87.6% (2002) to 72.8% this year.

SUMMARY OF RESULTS (Continued)

	For Year Ending April 30	
	<u>2005</u>	<u>2003</u>
Tax Levy Requirement	\$ 575,516	\$ 413,176
	as of May 1	
	<u>2004</u>	<u>2002</u>
Village Normal Cost	443,495	355,436
Anticipated Employee Contributions	182,137	144,040
Accrued Liability	8,308,341	6,265,487
Actuarial Value of Assets	6,046,713	5,489,003
Unfunded Accrued Liability/(Surplus)	2,261,628	776,484
Amortization of Unfunded Accrued Liability/(Surplus)	94,370	30,710
Percent Funded	72.8%	87.6%
Annual Payroll	\$ 2,154,190	\$ 1,703,607

**TAX LEVY REQUIREMENT**  
as of April 30

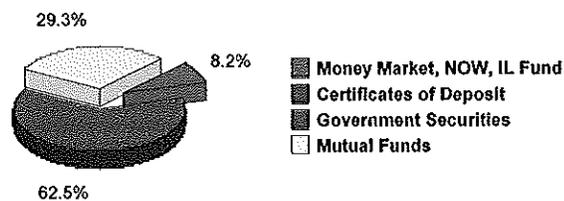


## ACTUARIAL VALUATION OF ASSETS

		as of May 1	
	<u>2004</u>		<u>2002</u>
Money Market, NOW, IL Fund	\$ 496,291	\$	944,139
Certificates of Deposit	0		12,293
Government Securities	3,769,071		3,388,396
Mutual Funds	1,768,880		1,081,572
Interest Receivable	11,343		10,404
Miscellaneous Receivable/(Payable)	<u>1,128</u>		<u>52,200</u>
Actuarial Value of Assets	\$ <u>6,046,713</u>	\$	<u>5,489,003</u>

### SUMMARY OF ASSETS

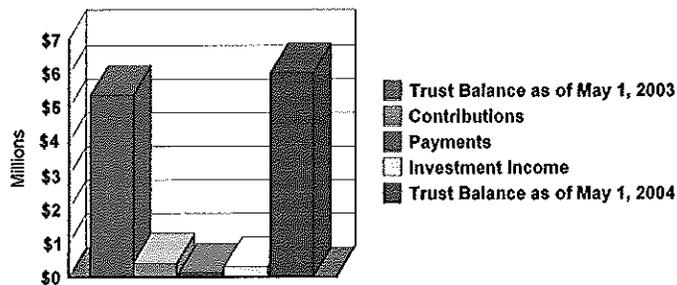
As Of May 1, 2004



## ASSET CHANGES DURING PRIOR YEAR

Trust Balance as of May 1, 2003		\$	5,422,803
<b>Contributions</b>			
Village	262,905		
Employee	<u>185,088</u>		
Total			447,992
<b>Payments</b>			
Benefit Payments	127,351		
Expenses	<u>2,658</u>		
Total			130,008
Investment Income			<u>305,926</u>
Trust Balance as of May 1, 2004		\$	<u>6,046,713</u>
Approximate Annual Rate of Return			5.48%

## ASSET CHANGES DURING PRIOR YEAR

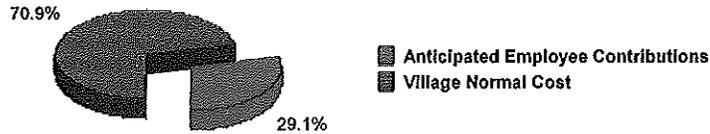


**NORMAL COST**

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>2004</u>	<u>2002</u>
Total Normal Cost	\$	625,632	\$ 499,476
Anticipated Employee Contributions		<u>182,137</u>	<u>144,040</u>
Village Normal Cost		<u>443,495</u>	<u>355,436</u>
Normal Cost Payroll	\$	2,154,190	\$ 1,703,607
Village Normal Cost Rate		20.59%	20.86%
Total Normal Cost Rate		29.04%	29.32%

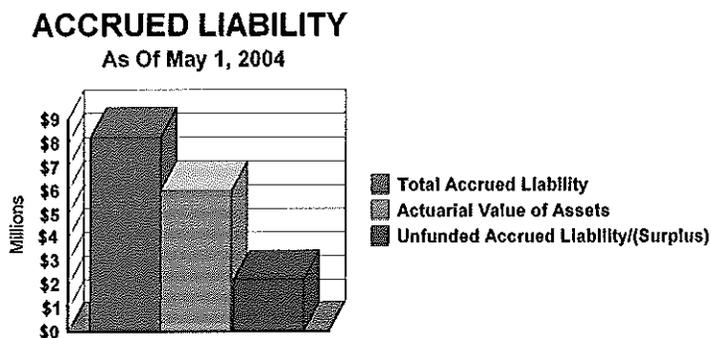
**NORMAL COST**  
As Of May 1, 2004



## 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>2004</u>	<u>2002</u>
Active Employees	\$ 6,811,842	\$ 4,672,320
Children Annuities	0	0
Disability Annuities	0	0
Retirement Annuities	1,340,472	1,593,167
Surviving Spouse Annuities	156,027	0
Terminated Vested Annuities	<u>0</u>	<u>0</u>
Total Annuities	1,496,499	1,593,167
Total Accrued Liability	8,308,341	6,265,487
Actuarial Value of Assets	<u>6,046,713</u>	<u>5,489,003</u>
Unfunded Accrued Liability/(Surplus)	\$ <u>2,261,628</u>	\$ <u>776,484</u>
Percent Funded	72.8%	87.6%



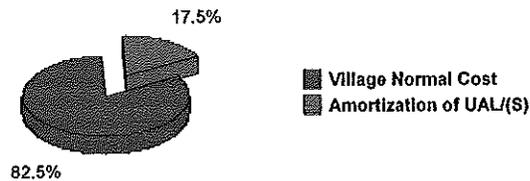
## TAX LEVY REQUIREMENT

The Tax Levy Requirement is determined as the annual contribution necessary to fund the normal cost, plus the amount to amortize the unfunded accrued liability as a level percentage of payroll over a forty (40) year period which commenced in 1993, plus an adjustment for interest.

	For Year Ending April 30	
	<u>2005</u>	<u>2003</u>
Village Normal Cost as of Beginning of Year	\$ 443,495	\$ 355,436
Amortization of Unfunded Accrued Liability/(Surplus)	94,370	30,710
Interest for One Year	<u>37,651</u>	<u>27,030</u>
Tax Levy Requirement as of End of Year	\$ <u>575,516</u>	\$ <u>413,176</u>

### TAX LEVY REQUIREMENT

For Fiscal Year Ending April 30, 2005



## 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>2004</u>	<u>2004</u>	<u>2002</u>	<u>2002</u>
Current Employees				
Vested	10		8	
Nonvested	<u>28</u>		<u>26</u>	
Total	<u>38</u>		<u>34</u>	
Inactive Participants		<u>Annual Benefits</u>		<u>Annual Benefits</u>
Children	0 \$	0	0 \$	0
Disabled Employees	0	0	0	0
Retired Employees	3	111,610	4	137,307
Surviving Spouses	1	22,345	0	0
Terminated Vesteds	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	<u>4</u>	<u>133,955</u>	<u>4</u>	<u>137,307</u>
Annual Payroll	\$	2,154,190	\$	1,703,607

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
25-29	11							11	47,801
30-34	2	3						5	59,039
35-39	1	3	2	1				7	57,278
40-44	3	1	1	1	1			7	64,265
45-49	1	2		1	2			6	59,380
50-54	1							1	52,081
55-59							1	1	74,027
<b>Total</b>	<u>19</u>	<u>9</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>0</u>	<u>1</u>	<u>38</u>	<u>56,689</u>
<b>Salary</b>	48,688	57,916	67,325	67,078	76,878		74,027		

Average Age: 36.7      Average Service: 7.4

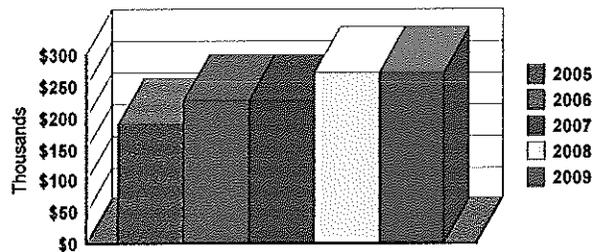
DURATION (years)    Active Members: 16.2    Retired Members: 8.1    All Members: 14.8

PROJECTED PENSION PAYMENTS

<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
\$189,475	\$228,130	\$229,740	\$274,396	\$272,184

**PROJECTED PENSION PAYMENTS**

2005-2009



## 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 (54%) of final salary. 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 (8.455%) 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.

## ACTUARIAL METHODS

The Actuarial Methods used for determining the Tax Levy and GASB Statements No. 25 & 27 financial disclosure have not been changed from the prior year. The Actuarial Method employed for this valuation is as follows:

### 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, 2004
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 69)
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	40.00
60	1.31		1.84	52.63
69	3.24			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, 2004</u>	<u>April 30, 2003</u>
Retirees and beneficiaries receiving benefits	4	4
Terminated plan members entitled to but not yet receiving benefits	0	0
Active vested plan members	10	8
Active nonvested plan members	<u>28</u>	<u>26</u>
Total	<u>42</u>	<u>38</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)
04/30/02	5,489,003	6,265,487	776,484	87.6%	1,703,607	45.6%
04/30/03	5,271,327	6,770,237	1,498,910	77.9%	1,871,471	80.1%
04/30/04	6,046,713	8,308,341	2,261,628	72.8%	2,154,190	105.0%

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

ANNUAL PENSION COST AND NET PENSION OBLIGATION

	<u>April 30, 2004</u>	<u>April 30, 2003</u>
Annual required contribution	413,176	263,112
Interest on net pension obligation	33,242	14,407
Adjustment to annual required contribution	<u>(19,555)</u>	<u>(8,256)</u>
Annual pension cost	426,863	269,263
Contributions made	<u>262,905</u>	<u>191</u>
Increase (decrease) in net pension obligation	163,958	269,072
Net pension obligation beginning of year	<u>474,889</u>	<u>205,817</u>
Net pension obligation end of year	<u>638,847</u>	<u>474,889</u>

THREE-YEAR TREND INFORMATION

<u>Fiscal Year Ending</u>	<u>Annual Pension Cost (APC)</u>	<u>Percentage of APC Contributed</u>	<u>Net Pension Obligation</u>
04/30/02	258,017	20.2%	205,817
04/30/03	269,263	0.1%	474,889
04/30/04	426,863	61.6%	638,847

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

FUNDING POLICY AND ANNUAL PENSION COST

Contribution rates:

Village	12.204%	0.011%
Plan members	8.455%	Same

Annual pension cost	426,863	269,263
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Contributions made	262,905	52,200
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Actuarial valuation date	04/30/2004	04/30/2003
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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	29 years	30 years
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Asset valuation method	Market	Same
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Actuarial assumptions:

Investment rate of return*	7.00%	Same
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Projected salary increases*	5.50%	Same
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*Includes inflation at	3.00%	Same
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Cost-of-living adjustments	3.00% per year	Same
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