
Concord Retirement System



Actuarial Valuation January 1, 2010





STONE
CONSULTING, INC.

October 5, 2010

Concord Retirement Board
22 Monument Square
P.O. Box 535
Concord, MA 01742

Dear Concord Retirement Board:

Stone Consulting, Inc. has performed a January 1, 2010 actuarial valuation of the Concord Retirement System. This valuation and report was prepared using generally accepted actuarial principles and practices and meets the parameters set by the Governmental Accounting Standards Board Statement (GASB) No. 25. To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system.

As part of performing the valuation, Stone Consulting, Inc. was furnished member data by the Concord Retirement System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. In addition, the administrative staff furnished financial statements that were not audited by the actuary or by the plan's auditors.

The funding objective of the plan is to fully fund the system while attempting to maintain a stable contribution amount for the upcoming fiscal year that is consistent with prior funding schedules or if employer finances allow it, to increase the contribution amount. This funding objective is being met.

We anticipate over time the contribution level to decrease as a percentage of payroll. The contribution rate is determined by adding the normal cost plus an amortization of the unfunded actuarial accrued liability.

The normal cost is expected to remain at a level percentage of payroll. The number of years of the amortization and/or the rate of increase of the amortization is adjusted to maintain a stable contribution level for the upcoming fiscal year. The length of the funding schedule contained in this actuarial valuation report is ten years, ten years more than the prior January 1, 2008 actuarial valuation with a 1.00% amortization increase. The amortization increase cannot exceed 4.50% annually. The maximum length of the amortization is until Fiscal 2030. These limits are contained in Chapter 32 of the Massachusetts General Laws. Recent legislation has extended the maximum length of the funding schedule to Fiscal 2040 and reduced the maximum amortization increase to 4%. These limitations are contained in Section 22F of Chapter 32. The Concord Retirement Board has not relied on this section of Chapter 32.

The contribution amount for Fiscal Year 2012 is \$3,352,832 which is about the same as the anticipated contribution amount from the revised prior funding schedule. PERAC and GASB guidelines indicate that actuarial valuations should be conducted at least every other year. The Concord Retirement Board conducted their previous actuarial valuation effective January 1, 2008. This satisfies these guidelines. We are pleased to present the results of this valuation. If the Retirement Board has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in inaccurate or misleading understanding of the results.

Respectfully submitted,

STONE CONSULTING, INC.

Actuaries for the Plan

Lawrence B. Stone

Member, American Academy of Actuaries





CONCORD RETIREMENT SYSTEM

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CONCORD RETIREMENT SYSTEM

INTRODUCTION

This report presents the results of the actuarial valuation of the Concord Retirement System. The valuation was performed at the request of the Retirement Board as of January 1, 2010 for the purpose of determining the contribution requirements for Fiscal Year 2012 and beyond. The contribution requirements are based on:

- The financial condition of the system as of December 31, 2009
- The benefit provisions of M.G.L. Chapter 32;
- The demographics of members in the system (i.e., active and inactive participants, retirees and beneficiaries as of January 1, 2010);
- Economic assumptions regarding salary increases and investment earnings; and
- Other actuarial assumptions (i.e., terminations, retirement, death, etc.)

JANUARY 1, 2010 VALUATION SUMMARY

	January 1, 2010	January 1, 2008	Change
Contribution Fiscal 2012	\$3,352,832	\$3,323,039*	\$29,793
Funding Schedule Length	10 years	0 years	+10 years
Amortization Increase	1.00%	level	+1.00%
Funding Ratio	85%	96%	-11%
Interest Rate Assumption	7.75%	7.75%	0.00%
Salary Increase Rate Assumption	4.50%	4.75%	-0.25%

**2012 expected appropriation of \$1,344,043 from the 2008 valuation was changed to \$3,323,039.*

- The Fiscal Year 2012 contribution is the same as the planned 2012 contribution. The System experienced a \$23.8 million market value asset loss since January 1, 2008. Stone Consulting, with agreement from the Retirement Board, values assets using a four year asset smoothing method. In this approach, asset gains and losses are recognized over a four-year period. The



CONCORD RETIREMENT SYSTEM

purpose of this approach is to avoid wide swings in asset value from one year to the next.

The System experienced a (.3)% annual rate of return on the actuarial value of assets ((6.1)% on a market value basis) versus our assumption of a 7.75% return. The System's asset portfolio, effective December 31, 2009 was 59% equities and 41% fixed income and short-term investments. The interest rate assumption was maintained at 7.75% to reflect anticipated market performance. Note that in the short-term, due to the unrecognized losses, a return of greater than the 7.75% return will be required to avoid additional actuarial asset losses.

- The salary increase assumption was changed to 4.50% from 4.75% to reflect lower anticipated increases. This decreased the accrued liability by \$1.4 million. Total compensation changed by 13.2% over the prior valuation; however average annual compensation (compensation divided by number of active members) changed by 6.9% or 3.4% per year.
- The funding level of the Concord Retirement System is 85% compared to 96% for the January 1, 2008 actuarial valuation. Chapter 68 requires a minimum funding ratio of 65% along with additional criteria in order to avoid being labeled an “under performing system”. If you are considered an “under performing system” the system assets are required to be transferred to PRIT. The system is likely to remain over the 65% funding ratio level unless the market has a sustained downturn or there are significant changes to benefit provisions. The funding level is estimated to be in the top quartile of Massachusetts' Contributory Retirement Systems.

The schedule length is ten years. The FY 2012 contribution was maintained at the anticipated schedule. The maximum period permitted under Chapter 32 of the Massachusetts General Laws is 19 years (2030). The maximum amortization permitted under Chapter 32 is 4.5%.

- Non-economic assumptions were changed from the January 1, 2008 actuarial valuation. Mortality was changed to the RP2000 mortality table projected 10 years with Scale AA and the retirement age was extended to age 70 for groups 1 and 2. These changes increased the accrued liability by \$200,000.



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JANUARY 1, 2010 ACTUARIAL VALUATION RESULTS

	January 1, 2010	January 1, 2008	Percentage Change
Funding			
• Contribution for Fiscal 2012	\$3,352,832		
• Contribution for Fiscal 2012 based on current schedule		\$3,323,039	1%
Members *			
• <i>Actives</i>			
a. Number	488	461	5.9%
b. Annual Compensation	\$24,096,576	\$21,294,788	13.2%
c. Average Annual Compensation	\$49,378	\$46,193	6.9%
d. Average Attained Age	48.7	48.2	1.0%
e. Average Past Service	11.7	11.3	3.5%
• <i>Retired, Disabled and Beneficiaries</i>			
a. Number	260	253	2.8%
b. Total Benefits*	\$4,791,936	\$4,412,277	8.6%
c. Average Benefits*	\$18,431	\$17,440	5.7%
c. Average Age	73.8	73.0	1.1%
• <i>Inactives</i>			
a. Number	120	110	9.1%
Normal Cost			
a. Total Normal Cost as of January 1, 2010	\$3,159,217	\$2,818,850	12.1%
b. Less Expected Members' Contributions	<u>2,133,303</u>	<u>1,837,047</u>	16.1%
c. Normal Cost to be funded by the Municipality	\$1,025,914	\$981,803	4.5%
d. Adjustment to July 1, 2011	70,023	70,778	-1.1%
e. Administrative Expense Assumption	<u>164,000</u>	<u>162,000</u>	1.2%
f. Normal Cost Adjusted to July 1, 2011	\$1,259,937	\$1,214,581	3.7%

*Excluding State reimbursed COLA



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SUMMARY OF JANUARY 1, 2010 VALUATION (Continued)

	<u>January 1, 2010</u>	<u>January 1, 2008</u>	<u>Percentage Change</u>
Actuarial Accrued Liability as of January 1, 2010			
a. Active Members	\$60,432,578	\$52,435,213	15.3%
b. Inactive Members	1,481,086	1,446,649	2.4%
c. Retired Members and Beneficiaries	<u>44,140,405</u>	<u>40,799,416</u>	8.2%
d. Total	\$106,054,069	\$94,681,278	12.0%
Unfunded Actuarial Accrued Liability			
a. Actuarial Accrued Liability as of January 1, 2010	\$106,054,069	\$94,681,278	12.0%
b. Less Actuarial Value of Assets as of January 1, 2010	<u>90,444,816</u>	<u>90,963,278</u>	-0.6%
c. Unfunded Actuarial Accrued Liability as of January 1, 2010	\$15,609,253	\$3,718,000	319.8%
d. Adjustment to July 1, 2011	<u>\$ 267,931</u>	<u>\$(899,281)</u>	
e. Unfunded Actuarial Accrued Liability as of July 1, 2011	\$15,877,184	\$2,818,719	



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DEMOGRAPHIC INFORMATION

Members	January 1, 2010	Percentage Change
• <i>Actives</i>		
a. Number	488	5.9%
b. Annual Compensation	\$24,096,576	13.2%
c. Average Annual Compensation	\$49,378	6.9%
d. Average Attained Age	48.7	1.0%
e. Average Past Service	11.7	3.5%
• <i>Retired, Disabled and Beneficiaries</i>		
a. Number	260	2.8%
b. Total Annual Retirement Allowance excluding State-reimbursed COLA	\$4,791,936	8.6%
• <i>Inactives</i>		
a. Number	120	9.1%

- The data was supplied by the Concord Retirement Board. The data was checked under broad parameters for reasonableness. With the assistance of the staff of the Concord Retirement Board, we were able to develop a database sufficient for valuation purposes.
- Payroll changed by 13.2% over the course of the past two years. Average annual compensation changed by 6.9% over the same time period.
- The salary increase assumption includes general wage adjustments, step increases, and promotional increases.



CONCORD RETIREMENT SYSTEM

HISTORY OF ACTIVE PARTICIPANTS

Valuation Year	Number	Average Age	Average Past Service	Average Ann'l Compensation
2010	488	48.7	11.7	\$49,378
2008	461	48.2	11.3	\$46,193
2006	451	47.8	11.1	\$41,963
2004	438	47.1	10.5	\$41,086
2002	444	46.2	10.0	\$37,784
2000	434	45.6	9.7	\$34,119

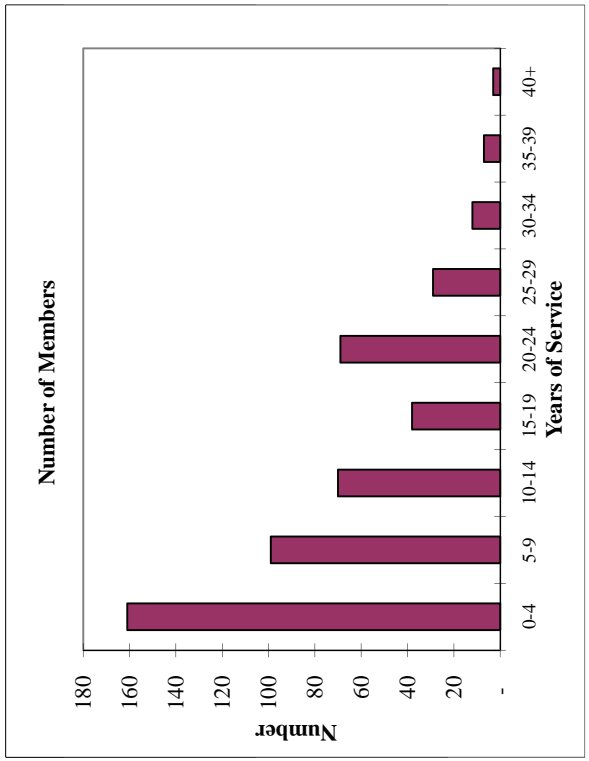
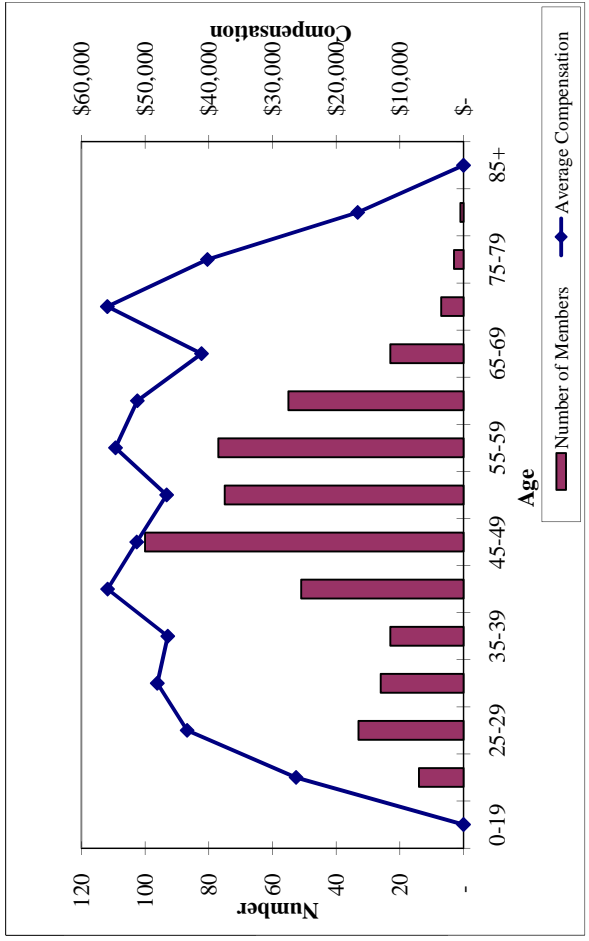
- Employee age has increased by 3.1 years and service has increased by 2.0 years over the course of the past ten years. Average annual compensation has grown by 44.7% (3.8% annually) over the same time period. Our impression is that the changes in age and service are somewhat greater than in most other systems but consistent with the general graying of the Massachusetts work force..

The charts on the following pages summarize demographic information regarding active and retiree members.



CONCORD RETIREMENT SYSTEM
Distribution of Plan Members as of January 1, 2010
Active Members

AGE	Years											Total	Average Compensation				
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total	Total		Average				
0-19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-24	14	-	-	-	-	-	-	-	-	-	-	14	368,092	26,292			
25-29	29	4	-	-	-	-	-	-	-	-	33	1,432,137	43,398				
30-34	12	11	3	-	-	-	-	-	-	-	26	1,250,089	48,080				
35-39	9	8	6	-	-	-	-	-	-	-	23	1,068,096	46,439				
40-44	17	10	8	11	4	1	-	-	-	-	51	2,850,552	55,893				
45-49	31	16	16	6	26	5	-	-	-	-	100	5,131,935	51,319				
50-54	23	17	9	4	10	8	4	-	-	-	75	3,496,039	46,614				
55-59	11	16	13	8	12	10	6	1	-	-	77	4,207,655	54,645				
60-64	13	8	8	7	10	2	2	4	1	-	55	2,816,906	51,216				
65-69	1	8	5	-	6	3	-	-	-	-	23	946,359	41,146				
70-74	1	1	1	1	1	1	-	-	-	-	7	391,464	55,923				
75-79	-	-	1	1	-	-	-	-	-	-	3	120,635	40,212				
80-84	-	-	-	-	-	-	-	-	-	-	1	16,617	16,617				
85+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL	161	99	70	38	69	29	12	7	3	488	\$ 24,096,576	\$ 49,378					



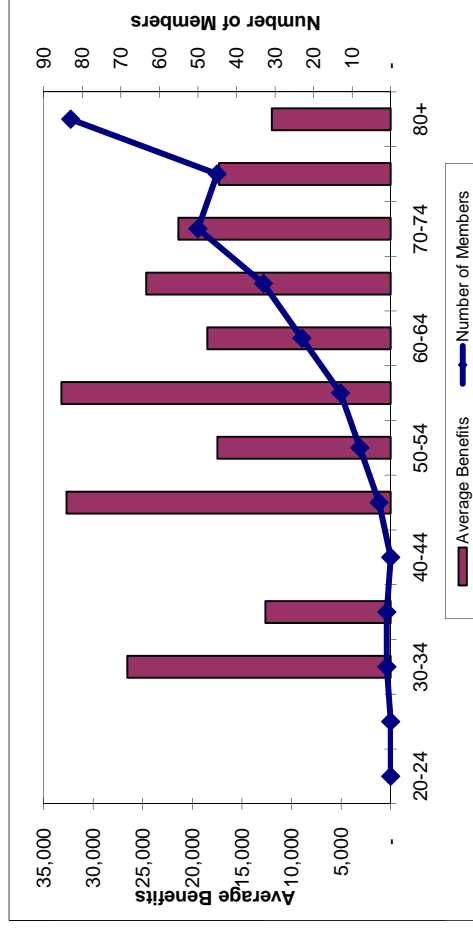


CONCORD RETIREMENT SYSTEM
Distribution of Plan Members as of January 1, 2010
Retired Members

Disabled Member			Retired Members and Beneficiaries			
Age	Number	Average Benefit	Total Benefit	Number	Average Benefit	Total Benefit
20-24	-	-	-	-	-	-
25-29	-	-	-	-	-	-
30-34	1	26,559	26,559	-	-	-
35-39	-	-	-	1	12,632	12,632
40-44	-	-	-	-	-	-
45-49	2	34,620	69,240	1	28,817	28,817
50-54	6	21,477	128,865	2	5,443	10,886
55-59	3	25,856	77,567	10	35,415	354,150
60-64	3	33,673	101,020	20	16,208	324,156
65-69	3	32,519	97,557	30	23,874	716,226
70-74	1	24,355	24,355	49	21,347	1,046,019
75-79	5	16,760	83,799	40	17,383	695,324
80+	3	27,525	82,575	80	11,402	912,189
TOTAL	27	25,613	\$ 691,538	233	\$ 17,598	\$ 4,100,398

<u>Total</u>			
Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	1	26,559	26,559
35-39	1	12,632	12,632
40-44	-	-	-
45-49	3	32,686	98,057
50-54	8	17,469	139,750
55-59	13	33,209	431,717
60-64	23	18,486	425,176
65-69	33	24,660	813,783
70-74	50	21,407	1,070,374
75-79	45	17,314	779,123
80+	83	11,985	994,764
TOTAL	260	\$ 18,431	\$ 4,791,935

Benefits shown are net of State reimbursed COLA.



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CONCORD RETIREMENT SYSTEM

VALUATION METHODOLOGY

Stone Consulting, Inc. used the Entry Age Normal actuarial funding method in this actuarial valuation. The use of the Entry Age Normal actuarial funding method is consistent with the requirements of Chapter 32 of the Massachusetts General Laws.

NORMAL COST

		January 1, 2010	% of Payroll*
Gross Normal Cost (GNC)	\$	3,159,217	13.1%
Employees Contribution		<u>2,133,303</u>	<u>8.9%</u>
Net Normal Cost (NNC)	\$	1,025,914	4.3%
Adjusted to Beginning of Fiscal Year 2012	\$	70,023	
Administrative Expense	\$	<u>164,000</u>	0.7%
Adjusted Net Normal Cost With Admin. Expense	\$	1,259,937	

*Payroll paid in 2009 for employees as of January 1, 2010 is \$24,096,576. Payroll for new hires in 2009 was annualized.

- The gross normal cost (GNC) is the “price” of benefits accruing in the current year if the assumptions underlying the normal cost were realized.
- An individual normal cost represents that part of the cost of a member’s future benefits that are assigned to the current year as if the costs are to remain level as a percentage of the member’s pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation.
- Anticipated employee contributions to be made during the year are subtracted from the GNC to determine employer normal cost, or net normal cost (NNC).
- Administrative expenses added to the NNC. The administrative expense does not include investment manager and custodial fees. These fees are considered part of the interest rate assumption that is net of fees.



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ACTUARIAL ACCRUED LIABILITY AND FUNDED STATUS

		January 1, 2010	Percentage Change
Active Actuarial Accrued Liability		\$ 60,432,578	15.3%
Superannuation	\$ 51,738,620		
Death	\$ 1,558,092		
Disability	\$ 5,639,013		
Termination	\$ 1,496,853		
Retiree, Inactive, Survivor and Beneficiary Actuarial Accrued Liability		<u>45,621,491</u>	8.0%
Retirees and Beneficiaries	\$ 36,528,910		
Disabled	\$ 7,611,495		
Inactive	\$ 1,481,086		
Total Actuarial Accrued Liability (AAL)		\$ <u>106,054,069</u>	12.0%
Actuarial Value of Assets (AVA)		\$ <u>90,444,816</u>	-0.6%
Unfunded Actuarial Accrued Liability		\$ 15,609,253	319.8%
Funded Ratio (AVA / AAL)			
2010 (7.75% interest rate):	85%		
2008 (7.75% interest rate):	96%		

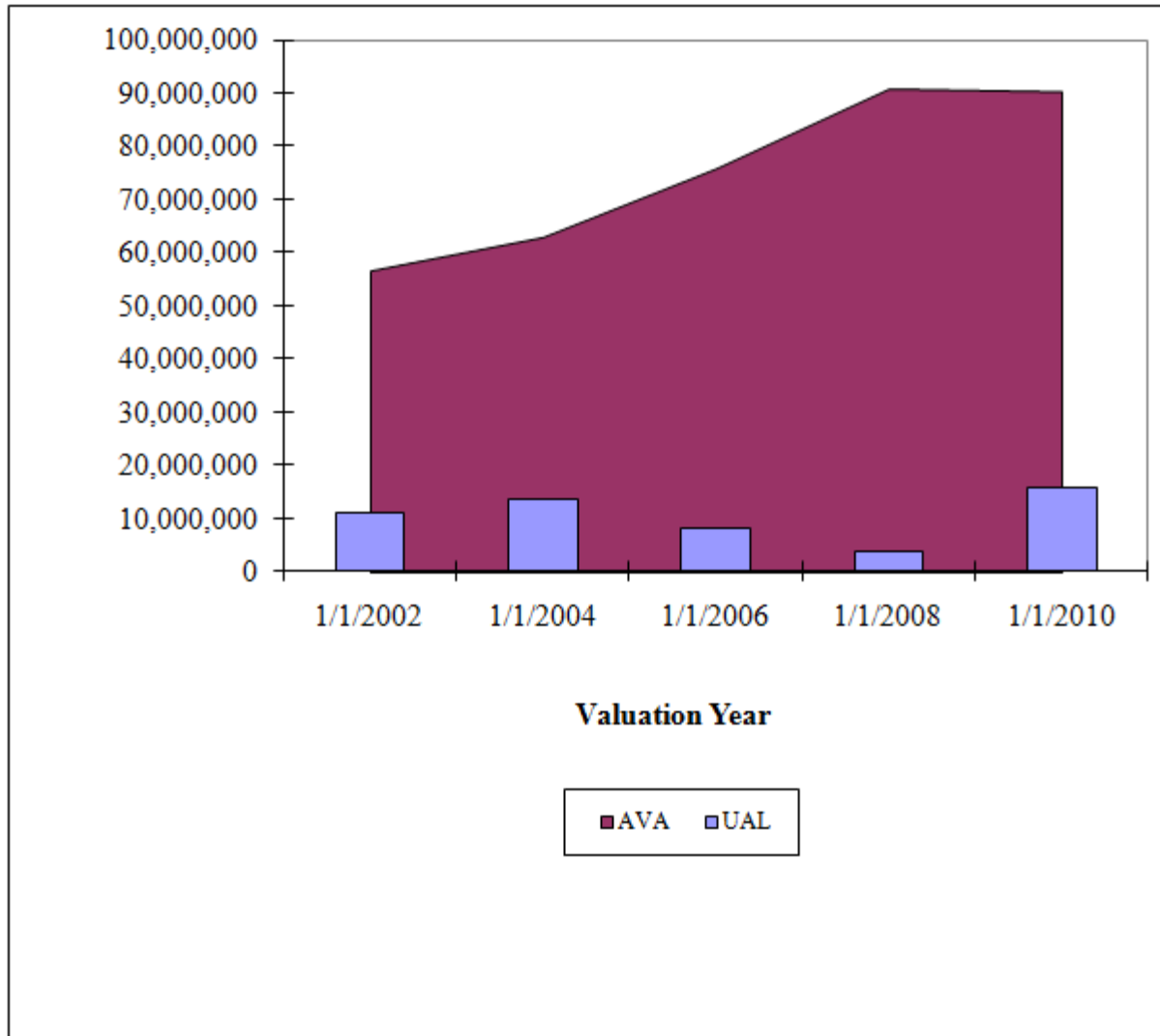
- Actuarial Accrued Liability (AAL) is the “price” of benefits attributable to benefits earned in past years, or in other words, represents today’s value of all benefits earned by active and inactive members.
- The total AAL is \$106,054,069. This along with an actuarial value of assets of \$90,444,816 produces a funded status of 85%. This compares to a funded status of 96% for the 2008 valuation.

The chart on the following page is a history of the unfunded actuarial accrued liability (UAL) and the valuation assets (AVA) over the course of the past five actuarial valuations.



CONCORD RETIREMENT SYSTEM

HISTORY OF ACTUARIAL VALUATION OF ASSETS (AVA) AND UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAL)





CONCORD RETIREMENT SYSTEM

DEVELOPMENT OF FUNDING SCHEDULE

Net Employer Normal Cost for Fiscal 2012	\$	1,259,937
Amortization	\$	<u>2,092,895</u>
Total Appropriation required for Fiscal 2012	\$	3,352,832

- The funding schedule is composed of the normal cost, and the amortization of the actuarial accrued unfunded liability and is adjusted by the administrative expense assumption. The contribution is assumed to be made at the beginning of the Fiscal Year (July 1).
- The contribution amount for Fiscal 2012 is \$3,352,832. The funding schedule is presented on page 14. The schedule's length is ten (10) years (for the fresh start base) which is ten years more than the January 1, 2008 valuation schedule's length, as the unfunded actuarial accrued liability (other than the ERI base) was scheduled to be fully funded as of Fiscal 2012. The maximum funding schedule length allowed by Chapter 32 of the Massachusetts General Laws is nineteen years to 2030 (previously 2028).
- In developing the funding schedule, we used a fresh start approach in which the unfunded actuarial accrued liability is reamortized instead of maintaining the existing amortization amount and separately amortizing the actuarial gain or loss. The use of a fresh-start approach results in a funding schedule in which the changes in contribution amounts from year to year are more consistent. The amortization percentage increase is 1.00% whereas level amortization was used in the prior valuation. The maximum amortization increase allowed under Chapter 32 is 4.50%.



CONCORD CONTRIBUTORY RETIREMENT SYSTEM

FUNDING SCHEDULE

Fiscal Year	Normal Cost	Unfunded Liability	Funding Amortization of UAL	Schedule Contribution
2012	1,259,937	15,877,184	2,092,895	3,352,832
2013	1,316,634	14,852,571	2,113,711	3,430,345
2014	1,375,883	13,726,123	2,134,734	3,510,617
2015	1,437,797	12,489,721	2,155,968	3,593,766
2016	1,502,498	11,134,619	2,177,415	3,679,913
2017	1,570,111	9,651,387	2,187,739	3,757,850
2018	1,640,766	8,042,081	2,209,617	3,850,382
2019	1,714,600	6,284,480	2,231,713	3,946,313
2020	1,791,757	4,366,856	2,254,030	4,045,787
2021	1,872,386	2,276,570	2,276,570	4,148,957
2022	1,956,644	-	-	1,956,644
2023	2,044,693	-	-	2,044,693

Amortization of Unfunded Liability as of July 1, 2011

Year	Type	Original Amort Amount	Percentage Increasing	Original # of Years	Current Amort. Amount	Years Remaining
2005	ERI - CHA(2003)	11,336	0.0%	12	11,336	5
2012	Fresh Start	2,081,559	1.00%	10	2,081,559	10

Notes on Amortization of Unfunded Liability

Year is the year the amortization base was established.

Type is the reason for the creation of the base. Examples are Gain/(Loss) or Fresh Start.

Original Amortization Amount is the annual amortization amount when the base was established.

Percentage Increasing is the percentage that the Original Amortization Amount increases per year.

Original # of Years is the number of years over which the base is being amortized.

Current Amortization Amount is the amortization payment amount for this year.

Years Remaining is the number of years left to amortize the base.



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ASSUMPTIONS AND METHODOLOGY SUMMARY

The principal actuarial assumptions used in this valuation are the same as the assumptions used in the previous valuation, except where noted, and are summarized in the following table:

<u>Assumption</u>	<u>January 1, 2010 Valuation</u>
Interest Rate	7.75% (same as prior valuation)
Salary Increase	4.50% (4.75%, prior valuation)
COLA	3% of \$12,000
COLA Frequency	Granted every year
Mortality	RP-2000 table (sex-distinct) projected 10 years with scale AA. For members retired under an Accidental Disability (job-related), 50% of deaths are assumed to be from the same cause as the disability. Disabled mortality RP-2000 projected table, ages set forward 2 years. <i>(prior valuation used RP-2000 without projection.)</i>
Overall Disability	<u>Groups 1 and 2</u> 50% ordinary disability 50% accidental disability <u>Group 4</u> 10% ordinary disability 90% accidental disability
Retirement Rates	<u>Groups 1 and 2</u> Ages 55 – 70 <i>(prior valuation 55 – 65)</i> <u>Group 4</u> Ages 50 – 65
Administrative Expense	\$164,000 budget estimated for FY 2012 provided by Concord Retirement Board.



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ASSETS

a.	Cash	\$	1,773,097.68
b.	Fixed Income		26,067,135.13
c.	Pooled Domestic Equity Funds		20,145,518.84
d.	Pooled International Equity Funds		4,185,880.26
e.	Pooled Alternative Investments		1,158,911.22
f.	PRIT Fund		28,550,860.71
g.	Sub-Total:	\$	81,881,403.84
h.	Interest Due and Accrued	\$	325,964.63
i.	Accounts Receivable		15,191.84
j.	Accounts Payable		.00
k.	Sub-Total:	\$	341,156.47
l.	Market Value of Assets [(g) + (k)]	\$	82,222,560.31

- We were furnished with the System's annual report by the Board. The market value of assets as of December 31, 2009 (adjusted for interest due and accrued, payables and receivables) is \$82,222,560.31.
- The asset allocation is approximately 3% cash, receivables, payables and short-term investments, 38% fixed income, and 59% equities.
- Historically, 10 to 11% has been the expected long-term rate of return for equities, and 6 to 7% has been the expected long-term rate of return for fixed income securities. Many economists and investment professionals are projecting lower returns of 6.25% to 9.00% for equities and 3.65% to 6.00% for fixed income securities. In light of these projections, as well as historical investment returns, the 7.75% interest rate assumption is within the reasonable assumption range. We encourage close monitoring for changes in investment performance against expectations.



CONCORD RETIREMENT SYSTEM

CALCULATION OF VALUATION ASSETS as of January 1, 2010 4-Year Phase-In of Asset Gains and Losses

1.	Market value of assets including receivable/payable as of 01/01/2010				\$82,222,560
2.	Phase-in of asset gains and losses				
		Plan Year	Original Amount	Percent Unrecognized	Amount Unrecognized
		(1)	(2)	(3)	(2) x (3)
	a.	2009	\$6,176,279	75%	\$4,632,209
	b.	2008	(\$29,955,311)	50%	(\$14,977,655)
	c.	2007	\$358,564	25%	\$89,641
	d.	Total			(\$10,255,806)
3.	Valuation assets without corridor as of 01/01/2010 (1. - 2.d.)				\$92,478,366
4.	Corridor Check				
	a.	90% of Market Value			\$74,000,304
	b.	110% of Market Value			\$90,444,816
5.	Valuation assets with corridor as of 01/01/2010 3. within Corridor				\$90,444,816
6.	Calculation of return on valuation assets				
	a.	Valuation assets as of 01/01/2008			\$90,963,278
	b.	ER contribs + EE contribs - Ben Pymts - Expenses			12,588
	c.	Actual return on valuation assets 5. - (6.a. + 6.b.)			(\$531,050)
	d.	Weighted value of valuation assets			\$90,954,314
	e.	Return on valuation assets 6.c. / 6.d.			-0.6%
	f.	Annualized return on assets			-0.3%



CONCORD RETIREMENT SYSTEM

DISCLOSURE INFORMATION UNDER GASB STATEMENT 25

Schedules of Funding Progress

(Dollars In Thousands)

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll (B-A)/C
	A	B	B-A	A/B	C	(B-A)/C
1/1/2010	\$90,445	\$106,054	\$15,609	85%	\$24,097	65%
1/1/2008	\$90,963	\$94,681	\$3,718	96%	\$21,295	17%
1/1/2006	\$75,974	\$83,989	\$8,015	90%	\$18,925	42%
1/1/2004	\$63,067	\$76,564	\$13,497	82%	\$17,996	75%
1/1/2002	\$56,748	\$67,763	\$11,015	84%	\$16,776	66%

Notes to Schedules

Additional information as of the latest actuarial valuation follows:

Valuation date	1/1/2010
Actuarial cost method	Entry Age Normal
Amortization method	Approximate level percent of payroll Closed
Remaining amortization period	10 years
Asset valuation method	Market value adjusted by accounts payable and receivables adjusted to phase in over 4 years investment gains or losses above or below the expected rate of investment return. The actuarial value of assets must be no less than 90% of the adjusted market value nor more than 110% of the adjusted market value. Market value of assets is \$\$82,222,560.
Actuarial assumptions:	
Investment Rate of Return	7.75% per year
Projected Salary Increases	4.50% per year



CONCORD RETIREMENT SYSTEM

PERAC INFORMATION DISCLOSURE

The most recent actuarial valuation of the System was prepared by Stone Consulting, Inc. as of January 1, 2010
 The normal cost for employees on that date was: \$2,133,303 8.9% of payroll
 The normal cost for the employer was: \$1,025,914 4.3% of payroll

The actuarial liability for active members was: \$60,432,578
 The actuarial liability for retired members was (includes inactives): \$45,621,491
 Total actuarial accrued liability: \$106,054,069
 System assets as of that date: \$90,444,816
 Unfunded actuarial accrued liability: \$15,609,253

The ratio of system's assets to total actuarial liability was: 85%

As of that date the total covered employee payroll was: \$24,096,576

The principal actuarial assumptions used in the valuation are as follows:

Investment Return: 7.75% per annum
 Rate of Salary Increase: 4.50% per annum

SCHEDULE OF FUNDING PROGRESS (Dollars in \$000's)

Actuarial Valuation Date	Actuarial Value of Assets		Actuarial Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
	(a)	(b)					
1/1/2010	\$90,445	\$106,054		\$15,609	85%	\$24,097	65%
1/1/2008	\$90,963	\$94,681		\$3,718	96%	\$21,295	17%
1/1/2006	\$75,974	\$83,989		\$8,015	90%	\$18,925	42%
1/1/2004	\$63,067	\$76,564		\$13,497	82%	\$17,996	75%
1/1/2002	\$56,748	\$67,763		\$11,015	84%	\$16,776	66%



CONCORD RETIREMENT SYSTEM

ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Methods

- 1. Actuarial Cost Method**

The Entry Age Normal Actuarial Cost Method has been used in this valuation. Under this method, the normal cost is the amount calculated as the level percentage of compensation necessary to fully fund the prospective benefits from each member's entry age to retirement age.

The actuarial accrued liability represents the theoretical accumulation of all prior years' normal costs for the plan members as if the program had always been in effect. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over plan assets.
- 2. Asset Valuation Method**

Market value of assets (adjusted by payables and receivables) adjusted to phase in investment gains or losses above or below the expected rate of investment return over a four-year rolling period starting with the 2007 calendar year investment return. The phase-in is 25% for year one, 50% for year two, 75% for year three and 100% for year four. The actuarial value of assets may be no less than 90%, or more than 110% of the market value of assets plus payables and receivables.
- 3. Fiscal Year Adjustment**

The actuarial results are adjusted by the valuation interest rate and salary scale to the beginning of Fiscal Year 2012. The unfunded actuarial accrued liability is rolled forward with normal cost and further adjusted by anticipated contributions and interest.

Actuarial Assumptions

- 1. Investment Return**

7.75% per year net of investment expenses. (Same as the prior valuation)
- 2. Salary Increases**

4.50% per year. (4.75%, prior valuation)



CONCORD RETIREMENT SYSTEM

ACTUARIAL METHODS AND ASSUMPTIONS (Continued)

3. Withdrawal Prior to Retirement

The rates shown at the following sample ages illustrate the withdrawal assumption. Withdrawal rates are set to zero if the retirement rate at that age is nonzero.

<i>Age</i>	Rate of Withdrawal	
	<i>Group 1 and 2</i>	<i>Group 4</i>
20	30.01%	2.10%
25	22.58%	1.90%
30	13.88%	1.65%
35	8.05%	1.25%
40	5.77%	0.56%
45	4.54%	0.04%
50	3.66%	0.00%
55	0.00%	0.00%

4. Disability Prior to Retirement

The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability:

<i>Age</i>	Rate of Disability	
	<i>Group 1 and 2</i>	<i>Group 4</i>
20	0.03%	0.10%
25	0.04%	0.12%
30	0.06%	0.18%
35	0.08%	0.26%
40	0.12%	0.38%
45	0.18%	0.58%
50	0.31%	0.98%
55	0.50%	1.60%
60	0.61%	1.97%

Disability is assumed to be 50% ordinary and 50% accidental for Group 1 and 2 and 10% ordinary and 90% accidental for Group 4.





CONCORD RETIREMENT SYSTEM

ACTUARIAL METHODS AND ASSUMPTIONS (Continued)

5. Rates of Retirement

The rates shown at the following ages illustrate the assumption regarding the incidence of retirement, once the member has achieved 10 years of service:

	Rates of Retirement	
<i>Age</i>	<i>Group 1 and 2</i>	<i>Group 4</i>
50	N/A	2%
51	N/A	2%
52	N/A	2%
53	N/A	2%
54	N/A	2%
55	10%	5%
56	3%	5%
57	3%	5%
58	3%	5%
59	5%	5%
60	5%	10%
61	5%	10%
62	10%	20%
63	10%	20%
64	10%	20%
65	50%	100%
66	35%	N/A
67	35%	N/A
68	35%	N/A
69	35%	N/A
70	100%	N/A

6. Mortality

The RP-2000 mortality table for healthy annuitants projected 10 years with Scale AA (sex-distinct).
(previously RP-2000 without projection)

7. Disabled Life Mortality

The RP-2000 mortality table for healthy annuitants (sex-distinct) set-forward by 2 years. Prior valuation used RP-2000 without projection. Death is assumed to be due to the same cause as the disability 50% of the time.

8. Regular Interest Rate Credited to Annuity Savings Account

2% per year.



CONCORD RETIREMENT SYSTEM

ACTUARIAL METHODS AND ASSUMPTIONS (Continued)

- | | |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9. Family Composition | Members assumed married with 2 dependent children – one male and one female both age 15; age difference between member and spouse assumed to be 3 years (the male being the older). |
| 10. Cost-of-Living Increases | A 3% COLA on the first \$12,000 of a member's retirement allowance is assumed to be granted every year. |
| 11. Administrative Expenses | Estimated budgeted amount of \$164,000 for the Fiscal Year 2012 excluding investment management fees and custodial fee is added to the Normal Cost. |
| 12. Step Increases | Step increases are assumed to be part of the salary increase assumption. |
| 13. Credited Service | Service between date of hire and date of membership is assumed to be purchased by all members. |
| 14. Contribution Timing | Contributions are assumed to be made at the beginning of the fiscal year (July 1). |
| 15. Valuation Date | January 1, 2010. |



CONCORD RETIREMENT SYSTEM

SUMMARY OF PRINCIPAL PROVISIONS

1. Participant Participation is mandatory for all full-time employees whose employment commences before age 65. There are three classes of members in the retirement system:

Group 1: general employees

Group 2: employees in specified hazardous occupations (e.g., electricians)

Group 4: police and firefighters

2. Member Contributions Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5% of Pay
1975 – 1983	7% of Pay
1984 – June 30, 1996	8% of Pay
After June 30, 1996	9% of Pay

Members hired after 1978 contribute an additional 2% of pay over \$30,000.

3. Pay
- a. Pay Gross regular compensation excluding bonuses, overtime, severance pay, unused sick pay, and other similar compensation.
- b. Average Pay The average of pay during the 3 consecutive years that produce the highest average or, if greater, during the last three years (whether or not consecutive) preceding retirement.
4. Credited Service Period during which an employee contributes to the retirement system plus certain periods of military service and “purchased” service.



CONCORD RETIREMENT SYSTEM

SUMMARY OF PRINCIPAL PROVISIONS (Continued)

5. Service Retirement

- a. Eligibility Completion of 20 years of credited service or attainment of age 55 and completion of 10 years of credited service. If hired prior to 1978 or a member of group 4, attainment of age 55.
- b. Retirement Allowance Determined as the product of the member's benefit percentage, average pay and credited service, where the benefit percentage is shown below (maximum allowance of 80% of average pay):

Benefit Percentage	Group 1	Group 2	Group 4
2.5%	65+	60+	55+
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	N/A	49
1.8	58	N/A	48
1.7	57	N/A	47
1.6	56	N/A	46
1.5	55	N/A	45

In addition, veterans receive an additional \$15 per year for each year of credited service up to 20 years.

6. Deferred Vested Retirement

- a. Eligibility Completion of 10 years of credited service (for elected and appointed members, 6 years in the event of involuntary termination).



CONCORD RETIREMENT SYSTEM

SUMMARY OF PRINCIPAL PROVISIONS (Continued)

6. Deferred Vested Retirement (*continued*)
- b. Retirement Allowance Determined in the same manner as 5b. with the benefit payable at age 55, unless deferred until later at the member's option.
- Member contributions with interest may be withdrawn after separation from service. If contributions are withdrawn, eligibility for retirement benefits is forfeited. Members hired before 1984 receive full interest on contributions that are withdrawn; otherwise, one half the credited interest is provided for members who withdraw after 5 but before 10 years of credited service and no interest is provided for withdrawals before 5 years of credited service.
7. Ordinary Disability Retirement
- a. Eligibility Non-job related disability after completion of 10 years of credited service.
- b. Retirement Allowance Determined in the same manner as 5b. with the benefit payable immediately. Veterans receive 50% of pay (during final year) plus an annuity based on accumulated member contributions with interest.
8. Accidental Disability Retirement
- a. Eligibility Disabled as a result of an accident in the performance of duties. No age or service requirement.
- b. Retirement Allowance 72% of pay plus an annuity based on accumulated member contributions with interest. Also, a dependent's allowance per year for each child. Total allowance not to exceed 100% of pay (75% for members hired after 1987).



CONCORD RETIREMENT SYSTEM

SUMMARY OF PRINCIPAL PROVISIONS (Continued)

9. Non-Occupational Death

- a. Eligibility Dies while in active service, but not due to occupational injury. 2 years of service.
- b. Retirement Allowance Benefit as if Option C had been elected (see below). Minimum monthly benefits provided as follows: spouse - \$250, first child - \$120, each additional child - \$90.

10. Occupational Death

- a. Eligibility Dies as a result of an occupational injury.
- b. Benefit Amount Same as 8b.

11. Cost-of-Living Increases

An increase of up to 3% applied to the first \$12,000 of annual benefit. Funded by the Municipality from Fiscal Year 1999. Percentage increase is voted on each year by the Retirement Board. Cost-of-living increases granted during Fiscal Year 1982 through Fiscal 1998 are reimbursed by the Commonwealth.

12. Optional Forms of Payment

- a. Option A Allowance payable monthly for the life of the member.
- b. Option B Allowance payable monthly for the life of the member with a guarantee of remaining member contributions with interest.
- c. Option C Allowance payable monthly for the life of the member with 66-2/3% continuing to the member's beneficiary upon the member's death. If the beneficiary predeceases the member, the allowance amount "pops up" to the non-reduced amount.



CONCORD RETIREMENT SYSTEM

GLOSSARY OF TERMS

1. Present Value of Benefits Represents the dollar value today of all benefits expected to be earned by current members if all actuarial assumptions are exactly realized.
2. Actuarial Cost Method The procedure that is used to allocate the present value of benefits between the liability that is attributable to past service (Actuarial Accrued Liability) and that attributable to future service.
3. Actuarial Assumptions Estimates are made as to the occurrence of certain events that determine the level of benefits to be paid and how long they will be provided. The more important actuarial assumptions include the investment return on assets, salary increases and the rates of turnover, disability, retirement and mortality.
4. Actuarial Accrued Liability The portion of the Present Value of Benefits that is attributable to past service.
5. Normal Cost The portion of the Present Value of Benefits that is attributable to benefits to be earned in the coming year.
6. Actuarial Assets Market value of assets (adjusted by payables and receivables) adjusted to phase in investment gains or losses above or below the expected rate of investment return over a four-year rolling period starting with the 2004 calendar year investment return. The phase-in is 25% for year one, 50% for year two, 75% for year three and 100% for year four. The actuarial value of assets may be no less than 90%, or more than 110% of the market value of assets plus payables and receivables.
7. Unfunded Actuarial Accrued Liability That portion of the Actuarial Accrued Liability not covered by System Assets.
8. PERAC Public Employee Retirement Administration Commission, a division of the State government which has regulatory authority over the administration of the retirement system.



CONCORD RETIREMENT SYSTEM

9. PRIT Pension Reserves Investment Trust Fund is the state controlled and administered fund for the investment of assets for members of the retirement system.

10. GASB Government Accounting Standards Board (issues guidance for disclosure of retirement system liabilities).



CONCORD RETIREMENT SYSTEM

Acknowledgement of Qualification

Acknowledgement of Qualification for January 1, 2010 actuarial valuation of the Concord Retirement System:

I, Lawrence Stone, am a consultant for Stone Consulting, Inc. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Lawrence B. Stone
Member, American Academy of Actuaries