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Town of Concord  
and  
Town of Concord Enterprise Funds  
Other Post-Employment Benefits



Actuarial Valuation  
January 1, 2012

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# **Town of Concord**

## **Other Post-Employment Benefits**



**Actuarial Valuation**  
**January 1, 2012**



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## **SECTION I**

### **MANAGEMENT SUMMARY**

#### **Introduction**

This report presents the results of the actuarial valuation of the Town of Concord Other Post-employment Benefits as of January 1, 2012 (the Town of Concord Governmental Funds Report). The valuation was performed for the purpose of measuring the actuarial accrued liabilities associated with these benefits and calculating a funding schedule. These results are used in satisfying the requirements under the Governmental Accounting Standards Board Statement No. 45.

The valuation was based on participant data as of January 1, 2012 supplied by Concord and the Massachusetts Teachers Retirement Board. The provisions reflected in the valuation are based on Chapter 32B of the General Laws of the Commonwealth of Massachusetts and related statutes and the benefits provided by the Town.

We are pleased to present the results of this valuation. We are available to respond to any questions on the content of this report. 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.*

*March 28, 2013*

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Kevin K. Gabriel, FSA, MAAA  
Member, American Academy of Actuaries

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Lawrence B. Stone  
Member, American Academy of Actuaries

5 West Mill Street, Suite 4  
Medfield, MA 02052  
Tel. (508) 359-9600  
Fax. (508) 359-0190  
E-mail [Lstone@stoneconsult.com](mailto:Lstone@stoneconsult.com)



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## Summary of Actuarial Results

The actuarial values in this report were calculated consistent with the Governmental Accounting Standards Board (GASB) Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, issued June 2004. Values at three discount rates are presented. The 7.50% discount rate represents the expected rate of return for a funded plan with a longer-term investment horizon. For an unfunded plan, the GASB Statement No. 45 calls for the use of a discount rate approximating the rate of return of Concord's general assets. The rate we used for this is 4.00%. The Concord OPEB liability is partially funded and for this we recommend a rate that is in between these two values. The rate we are recommending for this is 6.50%. The OPEB liability is extremely sensitive to this assumption. Depending upon whether the funded, unfunded, or partially funded rate is used, the Annual Required Contribution (ARC), Accrued Actuarial Liability (AAL), and the Normal Cost change dramatically.

Because Concord has contributed some funds toward future benefit payments, it is necessary to distinguish between the AAL or Accrued Actuarial Liability and UAAL or Unfunded Actuarial Liability. The UAAL is equal to the AAL less the amount funded to date. In the case of Concord, the accumulated assets to date are \$1,074,234.

All figures below reflect this contribution. The summary results are as follows:

- Actuarial Accrued Liability ("AAL") is the "price" attributable to benefits earned in past years. The total AAL as of January 1, 2012 (at the 6.50% discount rate) is \$27,897,554. This is made up of \$16,132,842 for current active Concord employees and \$11,764,712 for Concord retirees, terminated vested, spouses and survivors. The Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2012 (at the 6.50% discount rate) is \$26,823,320. This amount is equal to the AAL offset by the assets at the valuation date of \$1,074,234.
- The Normal Cost is the "price" attributable to benefits earned in the current year. The Normal Cost as of January 1, 2012 (at the 6.50% discount rate) is \$1,549,505.



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- Based on a 27-year funding schedule (at the 6.50% discount rate), the Fiscal 2012 contribution would be \$2,993,424. This figure is referred to as the Annual Required Contribution (ARC). This figure should be contrasted with the ARC using the fully funded 7.50% rate of \$2,679,858 and the ARC using the unfunded rate of \$4,217,052. All of these figures compare to the pay-as-you-go contribution of the existing costs for current retirees of \$1,193,808. For an illustration of how payment of the ARC impacts the funding of the plan over time, please refer to the “Illustrative Funding Schedule” discussion beginning on page 17 and the accompanying table on page 34. The following table shows the breakdown of the Actuarial Accrued Liability between future retirees and current retirees, as well as the normal cost, at Concord’s different discount rates:

<b>Actuarial Results as of January 1, 2012</b>	<b>7.50% Rate</b>	<b>6.50% Rate</b>	<b>4.00% Rate</b>
Current Actives	\$13,805,518	\$16,132,842	\$25,237,152
Current Retirees, Beneficiaries, Terminated Vesteds and Survivors	<u>\$10,652,921</u>	<u>\$11,764,712</u>	<u>\$14,796,594</u>
Total AAL	\$24,458,439	\$27,897,554	\$40,033,746
Assets	\$1,074,234	\$1,074,234	\$1,074,234
UAAL	\$23,384,205	\$26,823,320	\$38,959,512
Normal Cost	\$1,286,472	\$1,549,505	\$2,634,265
ARC	\$2,679,858	\$2,993,424	\$4,217,052



## Change from Prior Valuation

Concord had a prior valuation of its OPEB liability done as of January 1, 2009. The following table provides a comparison of some of the key figures:

Category	1/1/2012 Figure 6.5%	1/1/2009 Figure 4.25%	% Change
Total AAL	\$27.9 million	\$39.7 million	-29.7%
Unfunded AAL	\$26.8 million	\$39.7 million	-32.4%
Service Cost (Normal Cost)	\$1.5 million	\$2.0 million	-21.8%
Amortization Cost (2012: 27 yrs & 3.25% increasing, 2009: 30 yrs & 3.50% increasing)	\$1.4 million	\$1.5 million	-1.5%
Annual Required Contribution (ARC)	\$3.0 million	\$3.4 million	-13.1%
Pay-As-You-Go	\$1.2 million	\$1.4 million	-16.3%

The following addresses the reasons behind these changes:

- 1) The prior valuation used a 30-year amortization increasing at 3.50% per year at a 4.25% discount rate. We used a 27-year amortization increasing at 3.25% per year at a 6.50% discount rate. This decreases the amortization factor by 46%, which combined with the change in the UAAL (68% of last year valuation) resulted in a 1.5% decrease in the amortization amount.
- 2) Mortality was projected to 2017 versus 2010 for the last valuation. This added about 7% to the Normal Cost and about 8% to the AAL.
- 3) The change in the interest rate (to reflect the partial funding) decreased the Normal Cost by 38% and the AAL by 28%.
- 4) The participation rate (the rate at which retirees choose to enroll in the retiree medical program) increased from 65% to 70%. This increased the Normal Cost by 7% and the AAL by 4%.



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- 5) The change in other assumptions (withdrawal, disability, and retirement) added about 6% to the NC and about 3% to the AAL.
- 6) Retiree claims were overstated in prior valuation by about 9%. This led to the AAL being about 5% overstated, the ARC being overstated by about 2%, and the NOO being understated by about 2%.
- 7) Changes in trends, claims, and plan factors decreased the NC about 5% and had a 0% impact on the AAL (trends much lower but commercial claims much higher).

The following table summarizes the changes in assumptions between the two valuations:

	<b>Current Val (1/1/2012)</b>	<b>Prior Val (1/1/2009)</b>
<b>Mortality</b>	Projected to 2017	Projected to 2009
<b>Employee Participation</b>	70%	65%
<b>Spouse %</b>	65%	80%
<b>Plans Pre-65</b>	100% MC/0%IND	100% MC/0%IND
<b>Plans Post-65(Medicare Only)</b>	0% IND/99% MC;	20% IND/79% MC
<b>Family % Pre-65/Post-65</b>	55%/25%	50%/NA
<b>Claims age 65 COMMC Blended</b>	\$24,742/\$18,471	\$18,533/NA
<b>Claims age 65 COMIND Blended</b>	NA	NA
<b>Claims age 65 MEDMC/MEDIN</b>	\$2,532/NA	\$2,669/\$3,756
<b>Cumulative Trend Years 1-10</b>		
<b>Commercial MC</b>	56%	95%
<b>Commercial IND</b>	NA	NA
<b>Medicare MC</b>	71%	83%
<b>Medicare IND</b>	NA	86%
<b># Actives</b>	587	553 (Town only)
<b># Retirees</b>	406	364 (Town only)
<b># Retirees with Medical</b>	293	250 (Town Only)



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## Valuation Methodology and Assumptions

### *VALUATION METHOD*

The valuation of the other post-employment benefits is based upon the projected unit credit actuarial cost method. Under this method, future health care benefit costs for all health-related coverages are projected using assumed rates of annual health care cost increases (health care cost trend rates). The cost of future expected life insurance death benefits is added to the projected medical cost. The actuarial value of the future expected benefits is allocated proportionately over a health plan member's working lifetime.

A normal cost (or service cost) is determined for each year of the member's creditable service and is equal to the value of the future expected benefits divided by the total expected number of years of service. This is similar to a normal cost in a retirement actuarial valuation. The Actuarial Accrued Liability is the accumulated value of prior normal costs, similar to the actuarial accrued liability in a retirement actuarial valuation, and represents the liability associated with prior service.

### *GASB Statement No. 45*

The actuarial cost method used in this valuation is consistent with the Governmental Accounting Standards Board (GASB) Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, issued June 2004. It is one of the allowable cost methods specified in that accounting standard, and is the cost method most similar to the prescribed method of accounting for these benefits in the private sector described in the Financial Accounting Standards Board Statement 106 (FAS 106).

### *Difference Between FAS 106 and GASB Statement No. 45*

The GASB Statement No. 45 differs in one important regard from the actuarial cost method described in the private sector accounting standard. In the FAS 106 methodology, benefits are considered to be fully earned in the first 10 years of service, since members become vested in



the retirement benefits in 10 years. Compared to the FAS 106 method, the GASB Statement No. 45 attribution method produces a lower accrued liability for future retirees. The cost of the benefit is spread over the expected working lifetime of the employee. This makes the cost of the benefit associated with the years of service the employee is providing. This is more appropriate for the public sector due to the relative permanence of public entities compared to private entities. There are other significant differences between the GASB Statement No. 45 and FAS 106, most noticeably in the choice of discount rate. The GASB Statement No. 45 discount rate assumption is discussed below.

### *ACTUARIAL ASSUMPTIONS*

Details of the assumptions used in this valuation are shown in Section II. Here we present a brief discussion of the assumptions selected.

#### *Demographic and Financial Assumptions*

These include discount rates of 7.50%, 4.00%, and 6.50% as well as mortality, disability, withdrawal and retirement rates. The three discount rates apply to the three scenarios of either a fully funded, totally unfunded, or partially funded program. A fully funded program is when the employer contributes 100% of the ARC each year. An unfunded program is where the only amount contributed is used to pay benefits during the year so no assets accumulate. A partially funded program is one where the employer makes contributions in excess of the pay-as-you go figure (and so accumulates assets) but does not fund the full ARC. GASB Statement No. 45 indicates that the discount rate for a post employment benefit plan should be based on the degree to which the plan is funded. For an unfunded plan, the rate of return on the employer's general assets should be used. The argument for using this rate is that there is no asset accumulation and funds simply come into the employer's general assets and quickly go out. We are recommending a 4.00% rate for this scenario for Concord. For a fully funded plan, GASB statement No. 45 allows one to use a long-term investment rate such as what would be used for a defined benefit pension fund. The rate we are currently recommending for this scenario for Concord is 7.50%. For a plan where the Town has been setting aside some funds toward the liability above the pay-as-you-go amount, but less than the full ARC



("partially" funded), a rate in between these two levels should be used. The rate we are recommending for Concord in this scenario is 6.50%.

- **Derivation of the Partially Funded Rate**

Concord has indicated that its intent is to be funding the full ARC at some point in the future. If it realizes this level of funding, it would be appropriate for us to use the fully funded rate of 7.50%. However, the Town's current level of funding is not at that level yet. Based on the information provided by the Town, the funding goals over the next few years are as follows

Year	Funding Level
2012	\$500,000
2013	\$800,000
2014	\$650,000
2015	\$900,000
2016	\$1,150,000

With future years' cash contributions going up by \$250,000/per year until full funding is reached.

Given the variable level of these contributions and the intent to reach full funding, we selected a rate of 6.50% for the valuation. This rate is higher than if we simply used the current year's funding level.

It should be noted that all of this rate could change significantly in the future due to changes in the economic environment. In addition, the partially funded rate could change significantly should Concord alter its investment policy. A fully funded rate of 7.50% is based on an investment strategy roughly similar to what is typically seen for pension funds. This would involve a well-diversified portfolio of equities and fixed income investments designed for a long-term rate of return that satisfies pension funding obligations. Should the actual investment strategy be something different, then we could use a different interest rate for the fully funded plan. We did review Concord's investment allocation in setting the return rate.

The discount rate would also change if the Town were to alter the rate at which it is funding benefits. Such a change would lead to a lower discount rate should the funding level be



reduced, or a higher discount rate, should the rate of funding be increased. Based on the current economic scenario, this would mean the valuation rate could fall to as low as 4.00% or as high as 7.50%.

We generally recommend that a municipal entity adopt a funding policy. This is particularly necessary for Concord, which is funding its OPEB benefits. The GASB statement does not have a requirement for a formal funding policy document but indicates that a formal funding policy should be adopted. The Town has detailed its intent with a written document dated January 11, 2013. We commend Concord for having a written funding policy.

### *Health Care Plan Assumptions*

Assumptions unique to post-retirement medical plans include initial annual health care costs and annual health care cost increase (trend) rates, Medicare eligibility, plan participation and coverage election rates.

- *Current health care costs by age*

Initial health care cost assumptions were derived from premium rates for the various health care plans in-force at January 1, 2012. Typically, we analyze the plans offered in terms of four different categories: whether the plan offered is Commercial (not integrated with Medicare) or Medicare Supplement and whether the plan is Indemnity (where reimbursements are a function of billed charges) or Managed Care (where reimbursements are a function of negotiated contracts). Grouping the plans in this manner allows us to maintain a reasonable degree of granularity in our analysis. At the same time, it avoids the problem of a lack of credibility that often arises if one attempts to analyze every plan separately.

The Town offers plans in two of our categories: nine Commercial Managed Care plans and three Medicare Managed Care Plans. Please refer to the “Plan Definition Table” on page 30 for more details.

For all of these groups, weighted-average costs for each plan grouping were calculated based on the actual Concord active and retiree population enrollments. For categories with more than one plan, costs were based on an average weighted by enrollment. However, in order to



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capture the effect of aging on health care costs, an assumption is required for the increase in health care costs as a person ages. We based our aging assumption on a study sponsored by the Society of Actuaries Health Section in August 2003. The effect of this aging assumption is illustrated in the table of “Initial Monthly Health Care Costs” in the Actuarial Methods and Assumptions section of this report.

By age-grading the claim costs, we account for the subsidy of older employees by younger employees implicit in a flat premium rate (also referred to as the “Attributed Cost” of each employee). That is, the cost of an active 20-year old employee, for example, is much less than the cost of a retired 80-year old employee. But, the premiums charged the Town are flat – the same for both of these people. Thus, the 20-year old in our example is overcharged and the 80-year old is undercharged by a flat rate premium. Age-grading makes this subsidy or mischarge explicit in the claim costs at each age. For the purposes of the GASB valuation, this subsidy needs to be taken into account in determining the retiree liability and normal cost.

Medicare plans were also age-graded. While there is no subsidy between actives and retirees in these plans, there is still an escalating cost by age that needs to be reflected. In particular, it should be noted that from one year to the next, the cost of a person in these plans (as well as commercial plans) increases due to two factors: (1) year-over-year medical trends and (2) the fact that the person ages one more year. Without age-grading the Medicare costs, we would understate the rate of increase in costs and so end up with smaller liabilities and associated annual costs.

Concord also has a limited number of people for whom it is paying Medicare Penalties. These amounts reimbursed are people who did not take Medicare benefits initially when they were available and then had to pay a higher amount (the penalty) when they were required to by the Town when it adopted Section 18 of MGL Chapter 32B elect such benefits. This is a closed group and there will be no new entrants. The Medicare penalty amounts were not age-graded. We computed the average amount the Town pays for each person and used that number for all those for whom the Town is reimbursing the penalty.



- **Cost trends**

The claim rates developed using the methodology described above must be projected over the life of each retiree. For this purpose we use trend rates calculated to reflect the general rate of increase in Health Care costs. Since we did not have adequate data to develop trend rates unique to Concord's experience, we used trends based upon Stone Consulting's understanding of current health care rate increases.

We developed different trends for each of the categories of plans for which we also developed claim costs. These factors were applied to the premium-based claim rates. All trend rates were based on Stone Consulting's trend model except for those in the first year. Since the rate increases at 7/1/2012 were known, we used those increases to calculate the first-year trend rates.

It should be noted that premium rate increases typically include factors other than health care cost increases, such as aging of the covered population, that are reflected elsewhere in our valuation methodology. Therefore, premium rate increases are not themselves a proxy for health care trends. However, they do give an indication of the level of expected cost increases.

As is typical in post-retirement medical valuations, initially higher rates of health care cost trend are assumed to decrease over time to an ultimate rate consistent with long-term economic assumptions. Our general set of trend assumptions has Commercial HMO and PPO trends that begin at 9% and scale down to 5%. For Medicare, the Indemnity trend rates begin at 9% and scale down to 6% while the Medicare HMO and PPO trend rates being at 8% and scale down to 5%. These different sets of trend rate reflect our belief that (1) Managed Care plans, with their negotiated pay levels and tighter controls, will exhibit lower trends than unmanaged Indemnity plans; and (2) Commercial plans will be subject to modestly higher trends than Medicare plans due to cost shifting induced by cutbacks in the federal government's payment of Medicare costs.



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A table showing the trend rates can be found on page 44.

These trend rates should be thought of not as a forecast but as a reasonable progression of rates based on historic patterns. For many years, health care cost increases have been particularly volatile, and this actuarial assumption should be reviewed and, most likely, reset every year or two. Implicit in our health care cost trend assumptions is that the general rate of medical inflation will moderate due to economic pressure on insurers, employers, employees, retirees, government entities, and health care providers. As expectations of future health care cost increases change, they will be reflected in future valuations, resulting in actuarial gains/losses. These will be incorporated in the future costs and funding schedules. In this manner, there is a systematic means of adjusting to changes in the health care environment.

For the Medicare Penalty benefits, a flat 5% per year annual trend was used.

- [Sensitivity analysis](#)

The effect of increasing health care costs is extremely significant in an actuarial valuation of post-employment health benefits. As experience emerges the trend assumptions we have used are unlikely to be realized exactly. To illustrate the effect of different trend rates on the actuarial valuation results, we have included a sensitivity analysis of the effect on the actuarial accrued liability, normal cost and annual required contribution of a 1% increase or decrease in the health care cost trend assumption. This sensitivity analysis applies to the partially funded scenario at 6.50%. We have also included a sensitivity analysis of the effect on the actuarial accrued liability, normal cost and annual required contribution of a 0.50% increase or decrease in the partially funded discount rate assumption.

- [Timing](#)

All values discussed in this report are based on a January 1, 2012 valuation. This means that the first fiscal year of the valuation is July 1, 2011 through June 30, 2012. It is permissible, under GASB Statement No. 45, to use these values, without adjustment for interest or any other timing factor for a limited future time period. For an entity such as Concord, which will be doing a valuation every two years, the standard allows use of data “not more than twenty-



four months before the beginning of the first of two years for which the valuation provides the ARC.” This means that it is acceptable for us to use the January 1, 2012 results without adjustment when discussing the 2012 fiscal year and the 2013 fiscal year. Included are projected costs for the fiscal year after the 2012 fiscal year.

## Medicare

Medicare eligibility is an important assumption with regard to future costs. Concord has adopted Section of 18 of Chapter 32B of the Massachusetts General Laws. This section mandates that if a retiree is eligible for Medicare Part B, they must apply for it. We assume that active employees who were hired after March 31, 1986 will be Medicare eligible due to their mandated participation in the Medicare program. Active employees prior to that employment date are assumed to be 85% Medicare eligible. Adoption of Section 18 leads to lower costs for the retiree medical plan.

- Medicare Changes

The Medicare Prescription Drug, Improvement and Modernization Act of 2003 introduced significant changes to the Medicare program and its interaction with employer-sponsored post-retirement benefits. Medicare beneficiaries are able to participate in a voluntary, prescription drug coverage program. In order to encourage employers, including public-sector employers, to continue providing prescription drug coverage to retirees, the Act provides for a cash subsidy to employers whose prescription drug coverage is deemed to be actuarially equivalent to the new Medicare Part D drug coverage. This cash subsidy can be used to offset partially the cost of retiree medical benefits, including potentially reducing the accrued liability for a portion of the drug benefits provided by a retiree medical plan. The Act may have additional impact on retiree plan choices, as Medicare-eligible retirees may opt for the Part D coverage rather than an employer’s plan options. Such changes, if they occur, may affect the selection of future actuarial assumptions.



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GASB has indicated that the subsidy should not be included as part of the OPEB valuation. The reason being that the subsidy is considered general governmental revenue and as such is not earmarked towards the funding of OPEB benefits.

- [Health plan coverage election](#)

Assumptions must also be made regarding the participation in health plans when active members retire and when those already retired turn age 65. Using data supplied by Concord, Stone Consulting modeled the behavior of employees as they moved from being active to being retired or moved from being an under age 65 retiree to being an age 65+ retiree. Such modeling involved an analysis of the distribution of the plans chosen by current retirees, the possible plans available to those who will retire in the future, and our opinions about the likely future course of retiree medical care.

Such models are applicable to actives and to retirees not yet age 65, since these groups will have the option to select plans at key ages. Some retiree groupings do not require any modeling. For example, retirees over age 65 are assumed to remain in the plans they have already selected. If retirees have opted out of Concord coverage, we assume they will continue to do so. Similarly, those retirees under age 65 already in Medicare plans are assumed to remain in those plans for life. These are people who are disabled or have certain medical conditions that qualify them for Medicare early. Pre age 65 retirees in Commercial plans are assumed to stay in their current plan until age 65. At that point, they may migrate to a different plan. We have modeled their possible choices at age 65 and reflected that in our assumptions. Active employees over age 65, once they retire, are assumed to make the same sorts of selections as retirees at age 65. The following table shows the way we modeled the choices at each of the key ages.



<b>Concord Participant Behavior at Key Ages</b>			
Status	Age	Pre-65 Retirement	65+ Retirement
Active	Under 65	100% Commercial Managed Care 0% Commercial Indemnity	99% Medicare Managed Care 0% Medicare Indemnity >1% Commercial
Active	65+	NA	99% Medicare Managed Care 0% Medicare Indemnity >1% Commercial
Retired	Under 65	Current Plan	99% Medicare Managed Care 0% Medicare Indemnity >1% Commercial or Actual Plan if already in Medicare
Retired	65+	NA	Current Plan

### Participation

In addition to determining the choices that retirees will make among plans, there is also the issue of whether the retiree will elect coverage at all. The rate at which retirees elect coverage is called the “Participation” Rate. Stone Consulting conducted a study of Concord retirees to determine the historical frequency at which retirees elect to take medical coverage. Based on this study, we assumed that 70.0% of future eligible retirees and spouses of retirees will elect health plan coverage. For Life Insurance, we assumed that 70% of future retirees will elect coverage.

It is also necessary to reflect the participation rate of spouses in the Medical plans. Spouses will not participate at the same rate as employees for various reasons. These can include the availability of coverage from their own employer and the cost of the spouse coverage on top of the employee’s coverage. We examined the number of spouses covered both pre-65 and post-65 and determined the implied percentage of spouses participating. Such analysis took into account that spouses may “participate” by virtue of being covered under family plans. The participation rates we developed were 65% for pre-65 and 65% for post-65. We should also note that our expected frequency of spouses for an employee who is retiring is 80%. In other words, we expected 8 out of 10 retiring employees to have a spouse. However, not all of these spouses actually end up covered under Concord’s retiree medical program.



## Data

The participant census data for the valuation study was supplied by Concord and by the Massachusetts Teachers Retirement System. Participants include Concord active employees including teachers, retirees, disability retirees, surviving spouses, and inactive former employees with 10 or more years of service who qualify for a vested retirement benefit.

The participant census data was not audited by Stone Consulting, Inc. However, it was checked for reasonableness.

Summaries of active participants and Concord retiree census data are included in Section II.

## Assets

It is our understanding that the Town of Concord has created a trust fund whose sole trustee is the Town Manager. However, Town Meeting is expected to revise the Trustees and expand the Board of Trustees. The purpose of the trust is to hold and invest the trust assets for the exclusive purpose of providing other post-employment benefits such as medical benefits for retirees. As of December 31, 2011, the market value of the trust fund was \$1,074,234. The money was invested in several different stock and bond funds.

We have reflected that the trust fund will be invested in a combination of fixed investments and equities when developing the discount rate for the partially funded plan.



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## Funding

There are alternative ways to plan for the payment of post-retirement health and life insurance benefits: continue to fund on a pay-as-you go method, contribute on an ad-hoc basis to a fund for this purpose, or develop a funding schedule in which the unfunded amount is amortized over some number of years. With the funding schedule, the normal cost must continue to be paid each year to keep current.

There is no legal requirement to prefund these post-employment benefit liabilities. Nor does GASB Statement No. 45 require actual prefunding; however, its accounting requirements will serve to highlight the substantial unfunded accrued liabilities associated with these benefits.

### *ILLUSTRATIVE FUNDING SCHEDULE*

The GASB Statement No. 45 is designed to account for non-pension post-employment benefits using an approach similar to the accounting for retirement benefits. It develops an Annual Required Contribution (“ARC”) that is based on the Normal Cost plus an amortization of the Unfunded Actuarial Accrued Liability (“UAAL”). To the extent that actual contributions equal to the ARC are made by the employer to the post-employment health benefit plan, no additional liability will be required to be shown on Concord’s balance sheet. Employer contributions may be in the form of benefit or premium payments or contributions to a fund set aside for future benefit payments. Such a fund must meet the requirements set out in the accounting standard.

We have calculated an illustrative funding schedule for the other post-employment benefits, consistent with the GASB Statement No. 45. This funding schedule assumes that Concord funds 100% of the ARC and begins with Concord’s Fiscal Year 2012. The full schedule is shown in Section II.



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*Development of Funding Schedule and Annual Required Contribution*

The contribution amount under a fully funded scenario using the 7.50% discount rate for Fiscal 2012 is \$2,679,858. Part of this comes from the amortization of the January 1, 2012 Unfunded Actuarial Accrued Liability of \$23,384,205. This is equal to the funded AAL of \$24,458,439 less the funding to date of \$1,074,234. The UAAL is amortized over twenty-seven years using an increasing amortization payment at the rate of assumed payroll increase due to inflation (3.25%). The funding contribution is the amortization payment plus the projected normal cost. As noted earlier, under the GASB Statement No. 45, thirty years is the maximum amortization period allowed. We use an amortization of twenty-seven years since three years have passed since the adoption of GASB45. Shorter periods of time and/or other amortization patterns could be considered. It should be noted that the contribution is assumed to be made at the end of the fiscal year, so the first contribution is assumed to be made June 30, 2012. The amount of the amortization payment in the first year is \$1,393,386. For the purposes of this schedule, we have not adjusted the January 1, 2012 liability for timing by applying interest to bring it to any future date.

Yearly contributions will increase, as both normal cost and amortization payments increase each year.

The remaining part of the ARC is the cost of the current year's benefit accrual, the normal cost, of \$1,286,472.

*Cash Flow Consideration*

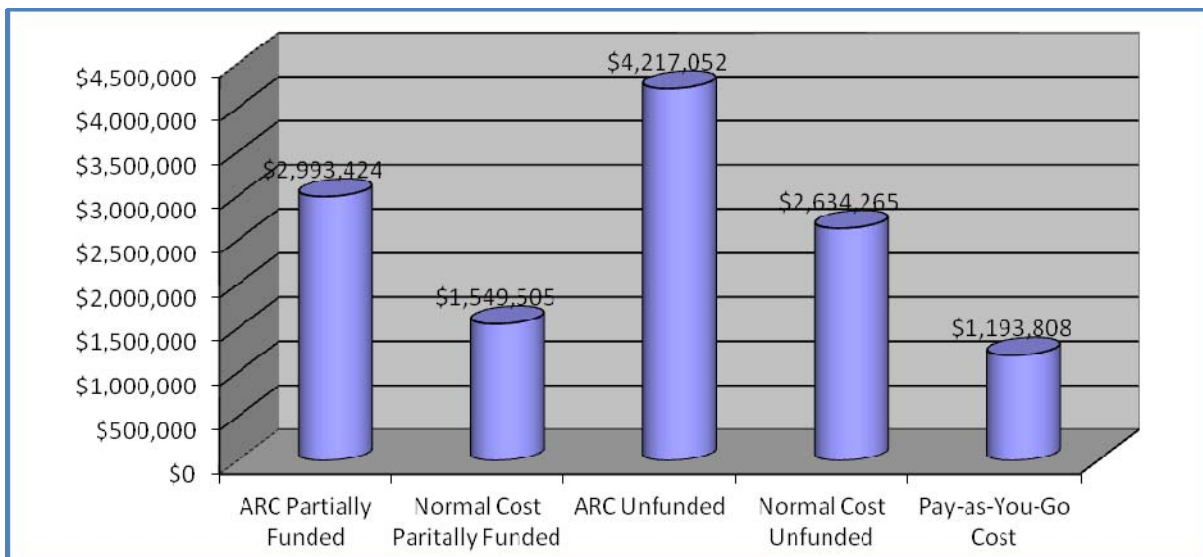
We have analyzed the cash flow of a funded post-employment medical trust by comparing the expected payouts of claims over the twenty-seven year period to expected contribution levels. If the actuarial assumptions are met, the funded amounts will be sufficient to cover annual benefit payments each year. Prior to adopting a funding schedule we recommend additional analysis be conducted to examine the effects of potential actuarial gains and losses on the cash flow.



### FUNDING VERSUS PAY-AS-YOU-GO VERSUS PARTIAL FUNDING

Currently, most Massachusetts governmental entities are paying for their post-employment medical benefits on a pay-as-you-go basis. This means that no amount in excess of the actual cost for the year is paid. All such entities must report figures for GASB Statement No. 45 based on the unfunded discount rate. Concord has elected, to date, to make some additional contributions above the pay-as-you-go cost. However, it is not funding the full ARC. This level of contribution is referred to as “partial funding.”

In order to understand the impact of partially funding versus funding completely, a comparison of the ARCs and normal costs under both scenarios, and the pay-as-you-go amount is illustrated on the following chart:



The chart depicts the advantage to the entity of even a partial funding policy, since the ARC and Normal Cost are significantly higher under the unfunded versus the funded scenario.

As can be seen in the funding schedule, the retiree medical plan’s normal cost will increase each year, so that by the time the initial unfunded liability is fully amortized, the required annual contribution will be substantially higher than is illustrated here for the first year. The pay-as-you-go costs will also increase dramatically as more and more employees retire. A projection of annual expected retiree pay-as-you-go costs is included with the funding schedule.



It is very important to understand that, in order to utilize the higher discount rate that goes with the fully funded or partially funded scenarios, there must be a “Funding Policy.” That is, the Town must intend to continue to payments and, in the future, must actually make them. Should the policy not be followed in future years, an adjustment to the discount rate would need to be made. As the figures above illustrate clearly, there is an iterative relationship between the degree of funding and the amounts that must be shown as liabilities, amortization payments, and normal cost figures. Lower funding levels lead to higher amounts for these key figures.

#### *DETERMINATION OF THE NET OPEB OBLIGATION (NOO)*

The Statement does not require Concord to put its entire Actuarial Accrued Liability on its books immediately as a liability. Rather, a cost is applied to its assets each year. Over time this cost, which is called the OPEB Cost, will add up to the total liability. The total liability at any point in time is called the Net OPEB Obligation (NOO).

For the first year of funding, the OPEB Cost and ARC are identical. Amounts contributed toward the cost of other post-employment benefits must then be deducted. These amounts include: 1) actual premiums paid; 2) the extra implied costs or “implicit subsidy” associated with covering retirees; 3) any additional amounts paid during the year. The Net OPEB Cost is the OPEB Cost less these amounts. For year one (which was Fiscal 2009), where there is no prior NOO on the financial statement, the Net OPEB Cost is the same as the Net OPEB Obligation. Starting year two, the OPEB Cost must recognize not only the Normal Cost and Amortization Cost for the year but also add interest on the prior year’s NOO as well as subtract Annual Required Contribution (ARC) adjustment to prevent double counting of the prior year’s NOO. The interest and the ARC adjustments somewhat offset each other so the net impact is not large. The total contributions are then subtracted from the OPEB Cost and the result is added to the prior year’s NOO. In this manner, the difference between each year’s ARC and the contributions are accumulated. Please refer to the following table on page



22 in the following discussion.

We have assumed that Concord continues its current policy and contributes partially to fund the liability as shown below. We have not illustrated this scenario with a “funding” schedule. The following chart projects the ARC, Pay-As-You-Go, Annual OPEB Cost and the Net OPEB Obligation for 8 years under the partially funded scenario. Note that the figures for the years 2009-2011 come from the Town’s annual financial report. Figures for 2012 and forward come from this valuation report. The Annual OPEB cost is the ARC plus an adjustment for interest not included in the ARC calculation. The Net OPEB Obligation is the accumulation of the Annual OPEB Cost minus any contributions. This is the amount that is subtracted from the Net Assets on your balance sheet. In the unfunded case, the contributions are the attributed pay-as-you-go amounts.



**CALCULATION OF NET OPEB OBLIGATION (NOO): Town Only (No Enterprise Funds)**

**"Funding" Schedule at 4.50% (2009 – 2011); 6.50% (2012+)**

Year	UAL	*Normal Cost <sup>1</sup>	Amort. <sup>1</sup>	ARC	Interest on NOO <sup>1</sup>	ARC Adjust. <sup>1</sup>	OPEB Cost	Total Contribs. <sup>1</sup>	Change in NOO	NOO
2009	\$39,682,695	\$1,980,761	\$1,465,885	\$3,446,646	NA	NA	\$3,446,646	\$1,426,896	\$2,019,750	\$2,019,750
2010	\$41,977,251	\$2,064,943	\$1,598,541	\$3,663,485	\$85,839	\$76,914	\$3,672,410	\$1,557,820	\$2,114,590	\$4,134,340
2011	NA	NA	NA	\$3,914,309	\$196,138	\$181,388	\$3,929,059	\$2,775,835	\$1,153,224	\$5,287,564
2012	\$26,823,320	\$1,549,505	\$1,443,919	\$2,993,424	\$343,692	\$284,633	\$3,052,482	\$1,693,808	\$1,358,674	\$6,646,238
2013	\$28,392,828	\$1,611,485	\$1,566,068	\$3,177,553	\$432,005	\$366,588	\$3,242,971	\$2,027,870	\$1,215,101	\$7,861,339
2014	\$29,835,446	\$1,675,945	\$1,688,556	\$3,364,500	\$510,987	\$444,917	\$3,430,570	\$2,011,257	\$1,419,313	\$9,280,652
2015	\$31,462,579	\$1,742,982	\$1,829,868	\$3,572,850	\$603,242	\$539,764	\$3,636,329	\$2,389,866	\$1,246,463	\$10,527,115
2016	\$32,867,899	\$1,812,702	\$1,967,709	\$3,780,410	\$684,262	\$630,229	\$3,834,444	\$2,772,073	\$1,062,371	\$11,589,486

<sup>1</sup> Total Contributions for all fiscal years include the implicit premiums paid. In the following fiscal years, we have assumed additional cash contributions:

Fiscal Year	Additional Cash Contribution
2009	\$0
2010	\$0
2011	\$1,100,000
2012	\$500,000
2013	\$800,000
2014	\$650,000
2015+	Increasing by \$250,000/year



### CALCULATION OF NET OPEB OBLIGATION (Alternative Presentation – Town Only)

	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
AAL	\$32,536,599	\$30,129,122	\$27,897,554	NA	\$41,977,251	\$39,682,695
Assets	<u>\$2,701,153</u>	<u>\$1,736,294</u>	<u>\$1,074,234</u>	<u>\$1,129,166</u>	<u>\$0</u>	<u>\$0</u>
UAL	\$29,835,446	\$28,392,828	\$26,823,320	NA	\$41,977,251	\$39,682,695
Service Cost	\$1,675,945	\$1,611,485	\$1,549,505	NA	\$2,064,943	\$1,980,761
Amortization of unfunded accrued liability	<u>\$1,688,556</u>	<u>\$1,566,068</u>	<u>\$1,443,919</u>	<u>NA</u>	<u>\$1,598,541</u>	<u>\$1,465,885</u>
ARC	\$3,364,500	\$3,177,553	\$2,993,424	\$3,914,309	\$3,663,485	\$3,446,646
Interest on NOO	\$510,987	\$432,005	\$343,692	\$196,138	\$85,839	\$0
ARC Adjustment	\$444,917	\$366,588	\$284,633	\$181,388	\$76,914	\$0
OPEB Cost	\$3,430,570	\$3,242,971	\$3,052,482	\$3,929,059	\$3,672,410	\$3,446,646
Premiums and Implicit Subsidy Paid	\$1,361,257	\$1,227,870	\$1,193,808	\$1,675,835	\$1,557,820	\$1,426,896
Cash contributions	<u>\$650,000</u>	<u>\$800,000</u>	<u>\$500,000</u>	<u>\$1,100,000</u>	<u>\$0</u>	<u>\$0</u>
Total Contributions	\$2,011,257	\$2,027,870	\$1,693,808	\$2,775,835	\$1,557,820	\$1,426,896
Change in NOO	\$1,419,313	\$1,215,101	\$1,358,674	\$1,153,224	\$2,114,590	\$2,019,750
NOO Beginning of Fiscal Year	\$7,861,339	\$6,646,238	\$5,287,564	\$4,134,340	\$2,019,750	\$0
NOO End of Fiscal Year	\$9,280,652	\$7,861,339	\$6,646,238	\$5,287,564	\$4,134,340	\$2,019,750



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## Implementation

According to the GASB Statement No. 45, its provisions would be effective for Concord fiscal years beginning after December 15, 2007. The timing is due to Concord being a “Tier 2 government under GASB 34”. In the first fiscal year of adoption, Fiscal 2009, Concord recorded a liability of \$2,019,750 on its balance sheet (for just the Town) to the extent that its contributions (including benefit payments) for other post-employment benefits were less than the Annual Required Contribution (“ARC”) determined in accordance with the GASB standard and described above. The total actuarial liability is determined by a valuation to be performed at least every two years. The total actuarial liability is reduced by any assets set aside to pre-fund the post-retirement benefits, with the resulting unfunded actuarial liability being amortized according to a funding schedule similar to that illustrated in this report. By the end of Fiscal 2011, Concord had recorded a figure of \$5,287,564 for its NOO.

To be considered a funded system, the retiree medical plan assets must be “segregated and restricted in a trust, or equivalent arrangement, in which (a) employer contributions to the plan are irrevocable, (b) assets are dedicated to providing benefits to retirees and their beneficiaries, and (c) assets are legally protected from creditors of the employers or plan administrator, for the payment of benefits in accordance with the terms of the plan.” (GASB 45, p. 47, “Plan Assets”). Our understanding is that Concord has set up such a trust and therefore Concord receives “credit” under the GASB accounting standard for assets set aside to pre-fund post-retirement benefits.



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## Recommendations and Comments

Post-employment medical benefits are a significant long-term liability that is only now starting to be addressed by Massachusetts government employers. In managing this liability, any governmental entity needs to consider the parameters that can significantly influence the level of the liability. To facilitate such a review, we recommend that Concord continues to maintain a continuing group that is cognizant of the relevant financial and employee benefits issues raised by GASB Statement No. 45. We would recommend that the group review the following:

- 1) Funding Policy: As previously discussed, the funding policy is critical to the valuation not only because it impacts the funds backing the liability but also because it impacts the discount rate that is used to calculate all of the relevant figures. Concord needs to bear in mind that it is the formulation of a funding policy that is essential, not simply the contribution of funds. Of course, if a funding policy is developed, it needs to be implemented, not just formulated. Thus, we recommend that the Town maintain a written funding policy that it reviews each year.
  
- 2) Plan Design: One of the major factors influencing costs is the design of the plans that Concord offers to retirees. To the extent that any part of these plans changes materially, costs may either increase or decrease. In order to keep costs under control, the Town should review the design of all its medical plans annually. Changes in plan characteristics such as deductibles, coinsurance levels, out-of-pocket maximums, and covered services can help mitigate the impacts of ever-increasing medical costs. In addition, the Town should review the networks it is using to be sure that it is getting the most competitive reimbursement levels available.
  
- 3) Contribution Levels: The extent to which the Town subsidizes the cost of retiree benefits is one of the most significant factors in the ultimate costs. Retired Concord





employees and their spouses pay between about 40% and 50% of the premium cost for their medical insurance. This is a somewhat higher requirement than for other Massachusetts municipal entities. At the extremes, a few municipal entities require (like Concord) as much as 50% for all participants (the most that retirees can be asked to contribute) while other require as little as 10%. Contribution levels have a double impact on costs. First off, there is a direct relationship between contributions and costs in that higher contribution levels mean that more of the cost of the plan is born by the Town. Secondly, higher contribution levels lead to higher participation rates because the plan becomes less costly to the retiree. In the case of cities and towns where a substantial portion of the medical costs are paid by the employer, participation rates tend to be very high. Concord's participation level of 70.0% for retirees is about what we would expect for a municipality with its higher contribution requirements for retirees.

In general, a very-well subsidized plan will have many participants enrolled at a high cost. Also, to the extent that other employers are cutting back or eliminating their programs, there is increased likelihood that a favorably subsidized plan will be elected by retirees, since no coverage or only very expensive coverage may be available from other sources such as their spouse's employer. There has been a very definite move toward reducing the subsidies paid by Massachusetts public entities.

- 4) Eligibility: The extent to which retirees are eligible for benefits is another variable that very directly impacts costs. Concord should review its eligibility criteria each year to be sure that they are accord with town goals for controlling costs and for providing well-deserved benefits for those who have worked for the town. Retirement system policies can also affect the eligibility for benefits. In the case of Concord, the Town pays for medical benefits for those who reach ten years of service, even if they do not retire from the Town. In other words, Concord allows a person with 10 years of service to leave its employment, work elsewhere, and then come back at retirement for OPEB benefits. This policy will produce a higher liability and ARC for Concord than



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if only those leaving Town service and immediately retiring were given benefits.

In addition to reviewing the above items regularly, we recommend that the Town continue working on improving its data. This is an issue faced by virtually all public entities with respect to GASB Statement No. 45. Some of the typical issues are:

- 1) Be sure that it has a record of those eligible for coverage who do not take coverage. This should cover not only actives who are not enrolled, but retired employees who opted out.
- 2) Maintain as part of the database whether an employee is a member of the Massachusetts Teachers' Retirement System.
- 3) Report retirees that have elected life insurance.
- 4) Be sure that Enterprise Fund enrollment is reported.



## SECTION II

### ACTUARIAL VALUATION DETAILS

#### Population Data

*A. DISTRIBUTION BY AGE: INACTIVES, RETIREES, BENEFICIARIES,  
TERMINATED VESTEDS AND SURVIVORS WITH MEDICAL COVERAGE*

Age	Number <sup>(1)</sup>
0-19	0
20-24	0
25-29	0
30-34	0
35-39	1
40-44	0
45-49	1
50-54	4
55-59	10
60-64	36
65-69	92
70-74	51
75-79	68
80-84	68
85-89	40
90-94	27
95-99	6
100+	2
<b>TOTAL</b>	<b>406</b>

<sup>(1)</sup> Includes only retired employees and vested terminees, beneficiaries, and survivors with medical coverage.



*B. FUTURE RETIREES – ACTIVE PARTICIPANTS*

# OF PARTICIPANTS\*

Current Plan	Medicare Eligible	Pre-Medicare Eligible	Total
No Medical/ Unknown	237	5	242
Indemnity	0	0	0
Managed Care	320	25	345
TOTAL	557	30	587

\* “Pre-Medicare eligible” means hired March 31, 1986 or before and “Medicare eligible” means hired after March 31, 1986. Employees hired March 31, 1986 or before do not contribute to Medicare.



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

**PLAN DEFINITION TABLE**

Plan Name	Plan Type	Individual Rate <sup>1</sup>	Retirees Enrolled	Family Rate <sup>1</sup>	Retirees Enrolled	Employee Contrib. % <sup>(2)</sup>
Fallon Direct Care	Commercial Managed Care	\$593.00	0	\$1,589.00	0	40%/45%
Fallon Direct Care Rate Saver	Commercial Managed Care	\$504.00	0	\$1,351.00	0	40%/45%
Fallon Select EPO	Commercial Managed Care	\$628.00	1	\$1,675.00	0	40%
Fallon Select EPO Rate Saver	Commercial Managed Care	\$533.00	0	\$1,424.00	2	40%
Harvard Pilgrim EPO	Commercial Managed Care	\$721.00	18	\$1,874.00	15	37%/45%
Harvard Pilgrim EPO Rate Saver	Commercial Managed Care	\$613.00	1	\$1,594.00	7	37%/45%
Tufts EPO	Commercial Managed Care	\$711.00	19	\$1,933.00	7	39%/48%
Tufts EPO Rate Saver	Commercial Managed Care	\$603.00	8	\$1,643.00	0	39%/48%
Tufts POS	Commercial Managed Care	\$1,596.00	0	\$4,210.00	0	50%
Fallon Senior	Medicare Managed Care	\$267.00	1	NA	NA	50%
Tufts Medicare Preferred	Medicare Managed Care	\$226.00	276	NA	NA	50%
Tufts Medicare Complement	Medicare Managed Care	\$341.00	60	NA	NA	50%
Life (5000)	Life	\$4.80	274	NA	NA	50%

<sup>1</sup>Rates at 1/1/2012

<sup>2</sup> Certain plans have different contributions percentages for individuals versus families. For these, the individual percentage is shown first.



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

**C. DISTRIBUTION BY AGE AND SERVICE: ACTIVE PARTICIPANTS**

<b>Age Group</b>	<b>0-4</b>	<b>5-9</b>	<b>10-15</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40+</b>	<b>Total</b>
<b>0-19</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>20-24</b>	1	0	0	0	0	0	0	0	0	<b>1</b>
<b>25-29</b>	39	3	0	0	0	0	0	0	0	<b>42</b>
<b>30-34</b>	26	24	1	1	0	0	0	0	0	<b>52</b>
<b>35-39</b>	20	13	18	2	0	0	0	0	0	<b>53</b>
<b>40-44</b>	21	18	19	8	1	0	0	0	0	<b>67</b>
<b>45-49</b>	22	18	18	11	3	3	0	0	0	<b>75</b>
<b>50-54</b>	29	26	23	11	7	2	0	0	0	<b>98</b>
<b>55-59</b>	19	26	28	9	12	4	6	0	0	<b>104</b>
<b>60-64</b>	8	11	13	11	8	4	1	2	0	<b>58</b>
<b>65-69</b>	2	3	5	4	3	8	0	0	1	<b>26</b>
<b>70-74</b>	0	1	4	1	0	3	0	0	1	<b>10</b>
<b>75-79</b>	0	0	0	1	0	0	0	0	0	<b>1</b>
<b>80-84</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>85-89</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>90-94</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>95-99</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>100+</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>TOTAL</b>	<b>187</b>	<b>143</b>	<b>129</b>	<b>59</b>	<b>34</b>	<b>24</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>587</b>



## SUMMARY OF RESULTS

<b>Actives</b>	
- Already in Medicare	0
- Pre-Medicare Coverage	30
- Post-Medicare Coverage	<u>557</u>
Total	587
<b>Retired, Disabled, Survivors, Vesteds, and Beneficiaries</b>	406

<b>Actuarial Accrued Liability and Unfunded Actuarial Accrued Liability (as of January 1, 2012)</b>			
	<b>At 7.50% Discount</b>	<b>At 6.50% Discount</b>	<b>At 4.00% Discount</b>
AAL Active Employees	\$13,805,518	\$16,132,842	\$25,237,152
AAL Current Retirees	\$10,652,921	\$11,764,712	\$14,796,594
<b>TOTAL AAL</b>	<b>\$24,458,439</b>	<b>\$27,897,554</b>	<b>\$40,033,746</b>
<b>FUNDING</b>	<b>\$1,074,234</b>	<b>\$1,074,234</b>	<b>\$1,074,234</b>
<b>TOTAL UAAL</b>	<b>\$23,384,205</b>	<b>\$26,823,320</b>	<b>\$38,959,512</b>

<b>Normal (Service) Cost (as of January 1, 2012)</b>			
	<b>At 7.50% Discount</b>	<b>At 6.50% Discount</b>	<b>At 4.00% Discount</b>
<b>TOTAL</b>	<b>\$1,286,472</b>	<b>\$1,549,505</b>	<b>\$2,634,265</b>



**SUMMARY OF RESULTS**  
(continued)

Annual Required Contribution (ARC) Calculation			
	At 7.50% Discount	At 6.50% Discount	At 4.00% Discount
Amortization of UAAL (26 yrs for Unfunded, 30 Yrs for Funded)	\$1,393,386	\$1,443,919	\$1,582,787
Normal Cost	\$1,286,472	\$1,549,505	\$2,634,265
<b>TOTAL</b>	<b>\$2,679,858</b>	<b>\$2,993,424</b>	<b>\$4,217,052</b>

**Expected Claims**

- Fiscal 2012 \$1,193,808

**Schedule of Funding Progress Other Post-Employment Benefits**  
(Dollars in Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) [Projected Unit Credit] (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b-a)/c)
1/1/2009	\$0	\$39,683	\$39,683	0%	\$30,547	129.9%
1/1/2012	\$1,074	\$27,897	\$26,823	3.85%	\$41,453	64.7%



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

<b>Twenty-Seven Year Funding Schedule at 7.50%</b>					
Fiscal Year	Normal Cost <sup>1</sup>	Amortization <sup>2</sup>	Contribution	Year-End UAAL	Projected Annual Benefit Cost <sup>3</sup>
2012	1,286,472	1,393,386	2,679,858	23,640,131	1,170,812
2013	1,382,957	1,438,671	2,821,628	23,866,570	1,204,722
2014	1,486,679	1,485,427	2,972,107	24,059,728	1,338,051
2015	1,598,180	1,533,704	3,131,884	24,215,476	1,466,703
2016	1,718,044	1,583,549	3,301,593	24,329,322	1,599,060
2017	1,846,897	1,635,014	3,481,911	24,396,381	1,665,877
2018	1,985,414	1,688,152	3,673,567	24,411,345	1,768,310
2019	2,134,320	1,743,017	3,877,338	24,368,452	1,885,534
2020	2,294,394	1,799,665	4,094,060	24,261,446	1,925,577
2021	2,466,474	1,858,155	4,324,628	24,083,538	1,941,190
2022	2,651,459	1,918,545	4,570,004	23,827,368	2,009,531
2023	2,850,319	1,980,897	4,831,216	23,484,956	2,027,015
2024	3,064,093	2,045,276	5,109,369	23,047,656	2,030,197
2025	3,293,900	2,111,748	5,405,648	22,506,101	2,036,797
2026	3,540,942	2,180,380	5,721,322	21,850,150	2,137,163
2027	3,806,513	2,251,242	6,057,755	21,068,827	2,077,748
2028	4,092,001	2,324,407	6,416,409	20,150,251	2,098,382
2029	4,398,901	2,399,951	6,798,852	19,081,572	2,105,103
2030	4,728,819	2,477,949	7,206,768	17,848,895	2,144,575
2031	5,083,480	2,558,482	7,641,963	16,437,194	2,167,527
2032	5,464,742	2,641,633	8,106,375	14,830,228	2,193,755
2033	5,874,597	2,727,486	8,602,083	13,010,447	2,237,231
2034	6,315,192	2,816,129	9,131,321	10,958,891	2,218,861
2035	6,788,831	2,907,654	9,696,485	8,655,080	2,172,865
2036	7,297,994	3,002,152	10,300,146	6,076,898	2,168,450
2037	7,845,343	3,099,722	10,945,066	3,200,463	2,145,425
2038	8,433,744	3,200,463	11,634,207	0	2,152,316

<sup>1</sup>Assumes 7.50% annual increase in normal cost and a static group of actives

<sup>2</sup>Assumes 3.25% annual increase in amortization payment

<sup>3</sup>The Pay-As-You-Go amount is for the current group of actives and retirees and is shown for the calendar year. It does not include any future hires. It is not directly comparable to the funding contribution but it included for illustrative purposes only. It does illustrate in the short-term, the estimated amount of claims costs for retirees. However, the retiree amount is expected to grow as new employees retire or become disabled.



## Sensitivity Analysis

The results of any actuarial valuation are sensitive to the assumptions used. That is, a change in an actuarial assumption will produce a change in the actuarial accrued liability and/or normal cost each year of the valuation. To illustrate this sensitivity, we performed valuations in which we changed two different inputs: the trend rate and the discount rate.

### A) Trend Rate Sensitivity

For postretirement medical plans in particular, the calculated actuarial values are highly sensitive to the assumed rate of health care cost trend. This is due to the compounding effect of the annual trend rates assumed for medical costs, as opposed to pension valuations where benefit levels typically remain fixed.

The following table illustrates the effect on our valuation results of a 1% increase or decrease in the assumed rates of health care cost trend in each year.

As of January 1, 2012	Health Care Cost Trend Rates		
	As Reported (6.50%)	+1% Each Year	-1% Each Year
<b>Liability for:</b>			
• Future Retirees	\$16,132,842	\$19,076,437	\$13,792,745
• Current Retirees, Beneficiaries, and Survivors	<u>\$11,764,712</u>	<u>\$12,821,833</u>	<u>\$10,847,260</u>
<b>Total AAL</b>	\$27,897,554	\$31,898,270	\$24,640,005
Normal Cost	\$1,549,505	\$1,891,907	\$1,284,491
<b>Annual Required Contribution for Fiscal Year 2012:</b>	\$2,993,424	\$3,551,188	\$2,553,054

The cumulative effect of a 1% increase in health care cost trend increases the AAL by approximately 14%, the normal cost by 22%, and the ARC by 19%. A 1% decrease in trend would decrease the AAL by 12%, the normal cost by 17% and the ARC by 15%.



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

There is the likelihood – based on historical experience – of significant deviations from the smooth rates of health care cost increase typically projected in any actuarial valuation. Therefore, emerging experience under the plan is likely to differ from the assumptions made as of any valuation date. This will produce actuarial gains and losses each year, even if the underlying assumptions remain reasonable for the future. Amortization of gains and losses will affect the updated funding schedule calculated at any point in the future.

B) Discount Rate Sensitivity

We also examined the sensitivity of the various key numbers to changes in the 6.50% discount rate. For this testing, we varied the discount rate by 0.50%, or in other words, we used rates of 6.00% and 7.00%. The following table shows the results we obtained:

As of January 1, 2012	Discount Rates		
	As Reported (6.50%)	Plus 0.50% (7.00%)	Minus 0.50% (6.00%)
<b>Liability for:</b>			
• Future Retirees	\$16,132,842	\$14,900,041	\$17,526,761
• Current Retirees, Beneficiaries, and Survivors	<u>\$11,764,712</u>	<u>\$11,276,903</u>	<u>\$11,941,893</u>
<b>Total AAL</b>	\$27,897,554	\$26,176,944	\$29,468,654
Normal Cost	\$1,549,505	\$1,409,337	\$1,710,090
<b>Annual Required Contribution for Fiscal Year 2012:</b>	\$2,993,424	\$2,832,113	\$3,159,564

Thus, the cumulative effect of a 0.50% decrease in the discount rate is to increase the AAL by approximately 6%, the normal cost by 10%, and the ARC by 6%. A 0.50% increase in the discount rate would decrease the AAL by 6%, the normal cost by 9% and the ARC by 5%. It is prudent, and GASB Statement No. 45 requires, an updated actuarial valuation be performed periodically. For an entity of Concord’s size, a new valuation will be required at least every two years.



## Actuarial Methods and Assumptions

1.	Actuarial Cost Method	Costs are attributed between past and future service using the Projected Unit Credit cost method. For attribution purposes, benefits are assumed to accrue over all employee service until decrement.
2.	Interest Rate/Discount Rate	7.50% per year net of investment expenses for a funded program. 4.00% per year net of investment expenses for an unfunded program. 6.50% per year net of investment expenses for a partially program.
3.	Amortization Method	Closed 27 year amortization (remainder of initial 27 year amortization). Uses level percentage of payroll (3.25% annual rate of increase) for partially funded plan.
4.	Asset Valuation Method	Market value of assets
5.	Mortality	Actives: The RP-2000 Mortality Tables (Sex-distinct) for Employees projected 17 years. Retirees: The RP-2000 Mortality Tables (Sex-distinct) for Healthy Annuitants projected 17 years. Disabled: The RP-2000 Mortality Tables (Sex-distinct) for Healthy Annuitants projected 17 years and set forward 2 years



Actuarial Methods and Assumptions  
(Continued)

6a. Withdrawal Prior to Retirement Based on years of service.  
(all except teachers)

Years of Service	Groups 1,2	Group 4
0	15.00%	1.50%
1	12.00%	1.50%
2	10.00%	1.50%
3	9.00%	1.50%
4	8.00%	1.50%
5	7.60%	1.50%
6	7.50%	1.50%
7	6.70%	1.50%
8	6.30%	1.50%
9	5.90%	1.50%
10	5.40%	1.50%
11	5.00%	0.00%
12	4.60%	0.00%
13	4.10%	0.00%
14	3.70%	0.00%
15	3.30%	0.00%
16	2.00%	0.00%
17	2.00%	0.00%
18	2.00%	0.00%
19	2.00%	0.00%
20	2.00%	0.00%
21	1.00%	0.00%
22	1.00%	0.00%
23	1.00%	0.00%
24	1.00%	0.00%
25	1.00%	0.00%
26	1.00%	0.00%
27	1.00%	0.00%
28	1.00%	0.00%
29	1.00%	0.00%
30+	0.00%	0.00%



**Actuarial Methods and Assumptions**  
(Continued)

6b. Withdrawal Prior to Retirement for Teachers

Male Teachers	<b>Service:</b>	0	5	10
	<b>Age</b>			
	25	12.00%	4.50%	1.00%
	35	11.00	5.00	1.50
	45	9.50	5.00	2.00
	55	7.5	4.50	2.50
Female Teachers	25	10.00%	9.00%	5.00%
	35	12.00	8.40	4.10
	45	8.90	4.70	2.40
	55	8.00	3.20	2.00

- |  |   |
|--|---|
| 7. Eligibility for Vested Post-Retirement Medical Benefits upon Withdrawal | Only those actually retiring from the Town with 10 years of Service are eligible for a benefit. |
|--|---|



Actuarial Methods and Assumptions  
(Continued)

8. Disability Prior to Retirement      The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability. Disability is assumed to be 55% ordinary and 45% accidental for Group 1 and 10% ordinary and 90% accidental for Group 4 and 55% ordinary and 45% accidental for Teachers.

<i>Age</i>	<i>Rate of Disability</i>		
	<i>Groups 1 and 2</i>	<i>Group 4</i>	<i>Teachers</i>
20	0.01%	0.10%	0.004%
25	0.02%	0.20%	0.005%
30	0.03%	0.30%	0.006%
35	0.06%	0.30%	0.006%
40	0.10%	0.30%	0.010%
45	0.15%	1.00%	0.030%
50	0.19%	1.25%	0.050%
55	0.24%	1.20%	0.080%
60	0.28%	0.85%	0.100%



Actuarial Methods and Assumptions  
(Continued)

9a. Rates of Retirement (Non-Teachers)      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>Groups 1 and 2 Male</i>	<i>Groups 1 and 2 Female</i>	<i>Group 4</i>
50	1.00%	1.50%	2.00%
51	1.00%	1.50%	2.00%
52	1.00%	2.00%	2.00%
53	1.00%	2.50%	5.00%
54	2.00%	2.50%	7.50%
55	2.00%	5.50%	15.00%
56	2.50%	6.50%	10.00%
57	2.50%	6.50%	10.00%
58	5.00%	6.50%	10.00%
59	6.50%	6.50%	15.00%
60	12.00%	5.00%	20.00%
61	20.00%	13.00%	20.00%
62	30.00%	15.00%	25.00%
63	25.00%	12.50%	25.00%
64	22.00%	18.00%	30.00%
65	40.00%	15.00%	100.00%
66	25.00%	20.00%	NA
67	25.00%	20.00%	NA
68	30.00%	25.00%	NA
69	30.00%	20.00%	NA
70	100.00%	100.00%	NA



**Actuarial Methods and Assumptions**  
(Continued)

9b. Rates of Retirement: Teachers

<b>Male Teachers</b>			
Service: Age	<20 Years	20-29 years	>29 years
50	N/A	1.0%	2.0%
51	N/A	1.0%	2.0%
52	N/A	1.0%	2.0%
53	N/A	1.0%	2.0%
54	N/A	1.0%	2.0%
55	3.0%	3.0%	6.0%
56	8.0%	5.0%	20.0%
57	15.0%	8.0%	35.0%
58	15.0%	10.0%	50.0%
59	20.0%	20.0%	50.0%
60	15.0%	20.0%	50.0%
61	30.0%	25.0%	50.0%
62	20.0%	30.0%	40.0%
63	30.0%	30.0%	40.0%
64	40.0%	30.0%	40.0%
65	40.0%	40.0%	50.0%
66	40.0%	30.0%	50.0%
67	40.0%	30.0%	50.0%
68	40.0%	30.0%	50.0%
69	40.0%	30.0%	50.0%
70	100.0%	100.0%	100.0%



Actuarial Methods and Assumptions  
(Continued)

9b. Rates of Retirement Teachers (cont'd)

Service: Age	Female Teachers		
	<20 years	20-29 years	>29 years
50	0.0%	1.5%	2.0%
51	0.0%	1.5%	2.0%
52	0.0%	1.5%	2.0%
53	0.0%	1.5%	2.0%
54	0.0%	1.5%	2.0%
55	2.0%	3.0%	6.0%
56	2.0%	3.0%	15.0%
57	8.0%	7.0%	30.0%
58	10.0%	7.0%	35.0%
59	15.0%	11.0%	35.0%
60	20.0%	16.0%	35.0%
61	20.0%	20.0%	35.0%
62	25.0%	30.0%	40.0%
63	24.0%	30.0%	30.0%
64	20.0%	30.0%	35.0%
65	30.0%	30.0%	35.0%
66	30.0%	30.0%	35.0%
67	30.0%	30.0%	30.0%
68	30.0%	30.0%	30.0%
69	30.0%	30.0%	30.0%
70	100.0%	100.0%	100.0%



### Actuarial Methods and Assumptions (Continued)

#### 10. Initial Claim Costs

Age	Managed Care Commercial Individual	Managed Care Commercial Blended <sup>(1)</sup>	Indemnity Commercial Individual	Indemnity Commercial Blended <sup>(1)</sup>	Managed Care Medicare	Indemnity Medicare
55	\$9,035.07	\$16,877.40	NA	NA	\$1,536.72	NA
60	\$10,782.76	\$20,142.08	NA	NA	\$1,833.98	NA
65	\$13,245.51	\$18,471.40	NA	NA	\$2,252.85	NA
70	\$15,355.18	\$21,413.41	NA	NA	\$2,611.68	NA
75	\$17,372.97	\$24,227.31	NA	NA	\$2,954.87	NA
80	\$19,181.17	\$26,748.91	NA	NA	\$3,262.42	NA
85	\$20,159.60	\$20,159.60	NA	NA	\$3,428.83	NA

<sup>(1)</sup> Blended rates below 65 are 55% Family and 45% Individual. Blended rates 65 and higher are 25% Family and 75% Individual. Individual rates are used for all participants 81 and higher.

#### 11. Trend Rates By Plan

Calendar Year	Commercial Managed Care	Commercial Indemnity	Medicare Managed Care	Medicare Indemnity
2013	-9.10%	NA	4.95%	NA
2014	8.00%	NA	7.00%	NA
2015	7.50%	NA	6.50%	NA
2016	7.00%	NA	6.00%	NA
2017	6.50%	NA	5.50%	NA
2018	6.00%	NA	5.00%	NA
2019	5.50%	NA	5.00%	NA
2020	5.00%	NA	5.00%	NA
2021	5.00%	NA	5.00%	NA
2022+	5.00%	NA	5.00%	NA



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## Actuarial Methods and Assumptions (Continued)

- |                          |  |
|--------------------------|--|
| 12. Medicare Eligibility | Employees: 100% if hired March 31, 1986 or after;<br>85% if hired pre-March 31, 1986<br>Spouses: 100%  |
| 13. Participation Rates  | Current retirees and spouses are assumed to continue the same coverage they have as of the valuation date. No future election of coverage is assumed for those retirees and spouses who currently have not elected coverage. |

All Retirees: 70.0% of the active Town employees eligible for post-employment medical benefits are assumed to elect Medical Coverage immediately upon retirement.

70% of the active employees eligible for post-employment medical benefits are assumed to elect Life Insurance coverage immediately upon retirement.

For all Retirees: Of those electing coverage, 80% are assumed to have a covered spouse at retirement. Of this 80%, 65% are assumed to participate pre-65, while 65% are assumed to participate post-65.

Participants with no or unknown current coverage (e.g. active employees and/or vested inactives who do not currently participate in Concord's medical plans) are assumed to elect retiree coverage at the same rates as currently covered active employees. Medicare-eligible retirees currently under age 65 are assumed to elect a Medicare plan option at age 65.



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## Actuarial Methods and Assumptions (Continued)

- |   |  |
|---|--|
| 14. Expenses  | Administrative expenses are included in the per capita medical cost assumption.  |
| 15. Projections                                     | The January 1, 2012 valuation was not adjusted for timing when determining the funding schedule. This means that the Pay-as-you-go amount as well as the Actuarial Valuation results have not been modified for interest or any other timing factor in our presentation. |
| 16. Massachusetts Teachers Retirement System (MTRS) | In this report, members of the Massachusetts Teachers Retirement System are sometimes referred to as Teachers.   |
| 17. Section 9 ½ of Chapter 32B                      | No current or future payments or receipts are assumed due to past service or future service with other Chapter 32 entities.  |
| 18. Valuation Date                                  | January 1, 2012  |



---

## Principal Plan Provisions Recognized in Valuation

- |    |                          |   |
|----|--------------------------|---|
| 1. | Eligibility for Benefits | <p>Current retirees, beneficiaries and spouses of Concord are eligible for medical benefits.</p> <p>Current employees or spouses who retiree with a benefit from the Concord Retirement System or the Massachusetts Teachers' Retirement System.</p> <p>Survivors of Concord employees and retirees are also eligible for medical benefits.</p> |
| 2. | Medical Benefits         | Various medical plans offered by Concord to its own employees.  |
| 3. | Life Insurance           | Concord retirees are eligible for a \$5,000 life insurance benefit offered by Concord, provided the retiree makes the required contributions. Each employee contributes 50% of the premium or \$4.22/month for the coverage.  |
| 4. | Retiree Contributions    | Based on data provided by Concord.  |



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## Glossary

Actuarial Accrued Liability	The portion, as determined by a particular Actuarial Cost Method, of the present value of benefits which is not provided for by future Normal Costs.
Actuarial Assumptions	Assumptions as to the occurrence of future events affecting Other Post-employment Benefits such as: mortality rates, disability rates, withdrawal rates, and retirement rates, the discount assumption, and the trend rates.
Actuarial Cost Method	A procedure for determining the Actuarial Present Value of Total Projected benefits and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal and an Actuarial Accrued Liability.
Amortization Payment	The portion of the OPEB contribution designed to pay interest and to amortize the Unfunded Actuarial Accrued Liability.
Annual OPEB Cost	The accrual-basis measure of the periodic cost of an employer's participation in a defined-benefit OPEB plan.
Annual Required Contribution (ARC)	The employer's periodic contributions to a defined benefit OPEB plan, calculated in accordance with the parameters defined in GASB 45. This is defined as the sum of the Normal Cost and the Amortization payment.
Commercial Plans	Plans designed to cover the medical expenses of those not otherwise covered by Medicare.
GASB	The Governmental Accounting Standards Board is the organization that establishes financial reporting standards for state and local governments.



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## Glossary (continued)

Investment Return Assumptions (Discount Rate)	The rate used to adjust a series of future benefit payments to reflect the time value of money. Under GASB 45, this rate is related to the degree to which the OPEB program is funded.
Healthcare Cost Trend Rate	The rate of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, the intensity of the delivery of services, technological developments, and cost-shifting.
Medicare Plans	Medical plans sold to those over 65 who are also covered by Medicare. These plans are supplemental to the Medicare plan, which is considered primary.
Net OPEB Obligation	The cumulative difference, since the effective date of GASB 45, between the annual OPEB cost and the employer's contributions to the plan.
Normal Cost	The portion of the Actuarial Present value of plan benefits that is allocated to a valuation year by the Actuarial Cost Method.
OPEB	Other Postemployment benefits other than pensions. This does not include plans such as severance plans or sick-time buyouts.
Pay-as-You-Go	The amount of benefits paid out to plan participants during the year.
Per Capita Claims Cost	The current average annual cost of providing postretirement health care benefits per individual.
Unfunded Actuarial Accrued Liability	The portion of the Actuarial Accrued Liability that is not covered by plan assets. For a plan that is completely unfunded, this amount is equivalent to the Actuarial Accrued Liability.
Valuation Date	The point from which all future plan experience is projected and as of which all present values are calculated.



### Acknowledgement of Qualifications

We, Lawrence Stone and Kevin Gabriel, are consultants for Stone Consulting, Inc. and are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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Lawrence B. Stone  
Member, American Academy of Actuaries

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Kevin K. Gabriel  
Member, American Academy of Actuaries

5 West Mill Street, Suite 4  
Medfield, MA 02052  
Tel. (508) 359-9600  
Fax. (508) 359-0190  
E-mail [Lstone@stoneconsult.com](mailto:Lstone@stoneconsult.com)

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# **Town of Concord Enterprise Funds Other Post-Employment Benefits**



## **Actuarial Valuation January 1, 2012**

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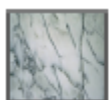


STONE  
CONSULTING, INC.



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## SECTION I

### Introduction

This report presents the results of the actuarial valuation of the Town of Concord Enterprise Funds Other Post-employment Benefits as of January 1, 2012 for its enterprise funds only. The rest of the Town of Concord valuation is discussed in a separate report. At the end of this report, an exhibit showing the combined numbers is also presented.

Because the funding policy for Concord's Enterprise Funds is different than that for the rest of the Town, the valuations have been done separately. Under GASB 45, different funding policies lead to different valuation interest rates. A fully funded plan, such as for the Enterprise Funds, with an investment policy similar to what would be seen in the long-term strategy that would be employed by a pension plan can use an interest rate of similar magnitude. We are currently using 7.50% for such an interest rate. A partially funded plan, such as Town of Concord uses, can employ an interest rate higher than for an unfunded plan, but not as high as a fully funded plan.

Certain parts of this valuation, such as the derivation of claims and trends, are the same as for the Town. These are not discussed again in the report but the reader is directed to the Concord report when necessary.

At the very end of the report are selected combined tables for the Enterprise Funds and the rest of the Town of Concord. The Concord Town only tables only appear in the separate Concord Town report.

The valuation was performed for the purpose of measuring the actuarial accrued liabilities associated with these benefits and calculating a funding schedule. These results are used in satisfying the requirements under the Governmental Accounting Standards Board Statement No. 45.

The valuation was based on participant data as of January 1, 2012 supplied by Concord Enterprise Funds and the Massachusetts Teachers Retirement Board. The provisions reflected in the valuation are based on Chapter 32B of the General Laws of the Commonwealth of Massachusetts and related statutes and the benefits provided by the Town.



*Town of Concord Enterprise Funds  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

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We are pleased to present the results of this valuation. We are available to respond to any questions on the content of this report. 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.*  
*March 28, 2013*

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Kevin K. Gabriel, FSA, MAAA  
Member, American Academy of Actuaries

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Lawrence B. Stone  
Member, American Academy of Actuaries

5 West Mill Street, Suite 4  
Medfield, MA 02052  
Tel. (508) 359-9600  
Fax. (508) 359-0190  
E-mail [Lstone@stoneconsult.com](mailto:Lstone@stoneconsult.com)



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## Summary of Actuarial Results

Since Concord is funding its Enterprise Funds fully, the interest rate and methods employed to determine the liabilities for these funds differed from that used for the Town valuation. Therefore, we have elected to present the results in a separate report

The actuarial values in this report were calculated consistent with the Governmental Accounting Standards Board (GASB) Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, issued June 2004. For these Enterprise Funds, values at two discount rates are presented. The 7.50% discount rate represents the expected rate of return for a funded plan with a longer-term investment horizon. This is the rate that is applicable to plans like these that are fully funded. For an unfunded plan, the GASB Statement No. 45 calls for the use of a discount rate approximating the rate of return of Concord Enterprise Funds's general assets. The rate we used for this is 4.00%. The OPEB liability is extremely sensitive to this assumption. Depending upon whether the funded, unfunded, or partially funded rate is used, the Annual Required Contribution (ARC), Accrued Actuarial Liability (AAL), and the Normal Cost change dramatically.

Because Concord Enterprise Funds has contributed funds toward future benefit payments, it is necessary to distinguish between the AAL or Accrued Actuarial Liability and UAAL or Unfunded Actuarial Liability. The UAAL is equal to the AAL less the amount funded to date.

The summary results for all Enterprise Funds are as follows:

- Actuarial Accrued Liability ("AAL") is the "price" attributable to benefits earned in past years. The total AAL as of January 1, 2012 (at the 7.50% discount rate) is \$2,088,043. This is made up of \$1.3 million for current active Concord Enterprise Funds employees and \$0.8 million for Concord Enterprise Funds retirees, terminated vested, spouses and survivors. The Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2012 (at the 7.50% discount rate) is \$1,277,036. This amount is equal to the AAL offset by the assets at the valuation date of \$811,007.
- The Normal Cost is the "price" attributable to benefits earned in the current year. The



*Town of Concord Enterprise Funds  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

Normal Cost as of January 1, 2012 (at the discount rate) is \$109,038.

- Based on a 27 year funding schedule (at the discount rate), the Fiscal 2012 contribution would be \$185,132. This figure is referred to as the Annual Required Contribution (ARC). This figure should be contrasted with the ARC using the unfunded rate of \$345,230. All of these figures compare to the pay-as-you-go contribution of the existing costs for current retirees of \$92,388. The following table shows the breakdown of the Actuarial Accrued Liability between future retirees and current retirees, as well as the normal cost, at Concord Enterprise Funds' different discount rates:

<b>Actuarial Results as of January 1, 2012</b>	<b>7.50% Rate</b>	<b>4.00% Rate</b>
Current Actives	\$1,275,423	\$2,456,114
Current Retirees, Beneficiaries, Terminated Vesteds and Survivors	<u>\$812,620</u>	<u>\$1,088,374</u>
Total AAL	\$2,088,043	\$3,544,488
Assets	\$811,007	\$811,007
UAAL	\$1,277,036	\$2,733,481
Normal Cost	\$109,038	\$234,178
ARC	\$185,132	\$345,230



### Change from Prior Valuation

Concord Enterprise Funds had a prior valuation of its OPEB liability done as of January 1, 2009. The following table provides a comparison of some of the key figures:

Category	1/1/2012 Figure	1/1/2009 Figure	% Change
Total AAL	\$2.1 million	\$4.1 million	-49.2%
Total UAAL	\$1.3 million	\$4.1 million	-69.0%
Service Cost (Normal Cost)	\$109 thousand	\$201 thousand	-45.6%
Amortization Cost (27 yrs for 2012, 30 yrs for 2009)	\$78 thousand	\$152 thousand	-48.9%
Annual Required Contribution (ARC)	\$187 thousand	\$352 thousand	-47.0%
Pay-As-You-Go	\$92 thousand	\$119 thousand	-22.2%

The reasons for these changes are essentially the same as for the Town. The small number of employees and retirees in these plans introduced much more variability in the changes. The following reiterates some of the reasons behind these changes:

- 1) The prior valuation used a 30-year amortization increasing at 3.50% per year at a 4.25% discount rate. We used a 27-year amortization increasing at 3.25% per year at a 7.50% discount rate. This added about 62% to the amortization factor. The change in the amortization factor, along with the UAAL decreasing to 31% of its prior value, reduced the amortization amount by 49%.
- 2) Mortality was projected to 2017 versus 2010 for the last valuation. This added about 7% to the Normal Cost and about 8% to the AAL.
- 3) The change in the interest rate (to reflect the partial funding) decreased the Normal Cost by 38% and the AAL by 28%.
- 4) The participation rate (the rate at which retirees choose to enroll in the retiree medical program) increased from 65% to 70%. This increased the Normal Cost by 7% and the AAL by 4%.



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- 5) The change in other assumptions (withdrawal, disability, and retirement) added about 6% to the NC and about 3% to the AAL.
- 6) Retiree claims were overstated in prior valuation by about 9%. This led to the AAL being about 5% overstated, the ARC being overstated by about 2%, and the NOO being understated by about 2%.
- 7) Changes in trends, claims, and plan factors decreased the NC about 5% and had a 0% impact on the AAL (trends much lower but commercial claims much higher).

The following table summarizes the changes in assumptions between the two valuations:

	<b>Current Val (1/1/2012)</b>	<b>Prior Val (1/1/2009)</b>
<b>Mortality</b>	Projected to 2017	Projected to 2009
<b>Employee Participation</b>	70%	65%
<b>Spouse %</b>	65%	80%
<b>Plans Pre-65</b>	100% MC/0%IND	100% MC/0%IND
<b>Plans Post-65(Medicare Only)</b>	0% IND/99% MC;	20% IND/79% MC
<b>Family % Pre-65/Post-65</b>	55%/25%	50%/NA
<b>Claims age 65 COMMC Blended</b>	\$24,742/\$18,471	\$18,533/NA
<b>Claims age 65 COMIND Blended</b>	NA	NA
<b>Claims age 65 MEDMC/MEDIN</b>	\$2,532/NA	\$2,669/\$3,756
<b>Cumulative Trend Years 1-10</b>		
<b>Commercial MC</b>	56%	95%
<b>Commercial IND</b>	NA	NA
<b>Medicare MC</b>	71%	83%
<b>Medicare IND</b>	NA	86%
<b># Actives</b>	62	NA
<b># Retirees</b>	22	NA
<b># Retirees with Medical</b>	19	NA



## **Valuation Methodology and Assumptions**

### *VALUATION METHOD*

The valuation of the other post-employment benefits is based upon the projected unit credit actuarial cost method. Under this method, future health care benefit cost is projected using assumed rates of annual health care cost increases (health care cost trend rates). The cost of future expected life insurance death benefits is added to the projected medical cost. The actuarial value of the future expected benefits is allocated proportionately over a health plan member's working lifetime.

A normal cost (or service cost) is determined for each year of the member's creditable service and is equal to the value of the future expected benefits divided by the total expected number of years of service. This is similar to a normal cost in a retirement actuarial valuation. The Actuarial Accrued Liability is the accumulated value of prior normal costs, similar to the actuarial accrued liability in a retirement actuarial valuation, and represents the liability associated with prior service.

### *GASB Statement No. 45*

The actuarial cost method used in this valuation is consistent with the Governmental Accounting Standards Board (GASB) Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, issued June 2004. It is one of the allowable cost methods specified in that accounting standard, and is the cost method most similar to the prescribed method of accounting for these benefits in the private sector described in the Financial Accounting Standards Board Statement 106 (FAS 106).

### *Difference Between FAS 106 and GASB Statement No. 45*

The GASB Statement No. 45 differs in one important regard from the actuarial cost method described in the private sector accounting standard. In the FAS 106 methodology, benefits are



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considered to be fully earned in the first 10 years of service, since members become vested in the retirement benefits in 10 years. Compared to the FAS 106 method, the GASB Statement No. 45 attribution method produces a lower accrued liability for future retirees. The cost of the benefit is spread over the expected working lifetime of the employee. This makes the cost of the benefit associated with the years of service the employee is providing. This is more appropriate for the public sector due to the relative permanence of public entities compared to private entities. There are other significant differences between the GASB Statement No. 45 and FAS 106, most noticeably in the choice of discount rate. The GASB Statement No. 45 discount rate assumption is discussed below.

### *ACTUARIAL ASSUMPTIONS*

Details of the assumptions used in this valuation are shown in Section II. Here we present a brief discussion of the assumptions selected.

#### *Demographic and Financial Assumptions*

These include discount rates of 7.50%, 4.00%, and as well as mortality, disability, withdrawal and retirement rates. The three discount rates apply to the three scenarios of either a fully funded, unfunded, or partially funded program. A fully funded program is when the employer contributes 100% of the ARC each year. An unfunded program is where the only amount contributed is used to pay benefits during the year so no assets accumulate. A partially funded program is one where the employer makes contributions in excess of the pay-as-you go figure (and so accumulates assets) but does not fund the full ARC. GASB Statement No. 45 indicates that the discount rate for a post employment benefit plan should be based on the degree to which the plan is funded. For an unfunded plan, the rate of return on the employer's general assets should be used. The argument for using this rate is that there is no asset accumulation and funds simply come into the employer's general assets and quickly go out. We are recommending a 4.00% rate for this scenario for Concord Enterprise Funds. For a fully funded plan, GASB statement No. 45 allows one to use a long-term investment rate such as what would be used for a defined benefit pension fund. The rate we are currently recommending for this scenario for Concord Enterprise Funds is 7.50%.



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It should be noted that all of this rate could change significantly in the future due to changes in the economic environment. In addition, the fully funded rate could change significantly should Concord Enterprise Funds alter its investment policy. A fully funded rate of 7.50% is based on an investment strategy roughly similar to what is typically seen for pension funds. This would involve a well-diversified portfolio of equities and fixed income investments designed for a long-term rate of return that satisfies pension funding obligations. Should the actual investment strategy be something different, then we could use a different interest rate for the fully funded plan.

The discount rate would also change if the Concord Enterprise Funds were to alter the rate at which it is funding benefits. Such a change would lead to a lower discount rate should the funding level be reduced, or a higher discount rate, should the rate of funding be increased. Based on the current economic scenario, this would mean the valuation rate could fall from 7.50% to as low as 4.00%.

We generally recommend that a municipal entity adopt a funding policy. This is particularly necessary for Concord Enterprise Funds, which is funding its OPEB benefits. The GASB statement does not have a requirement for a formal funding policy document but indicates that a formal funding policy should be adopted. The Town has detailed its intent to fully fund the Concord Enterprise Funds in a written document dated January 11, 2013. We commend the Town for creating a written funding policy.

*Health Care Plan Assumptions*

These were the same as for Concord the Town. Please refer to that section of the report for a discussion of how these were determined.

- *Sensitivity analysis*

The effect of increasing health care costs is extremely significant in an actuarial valuation of post-employment health benefits. As experience emerges the trend assumptions we have used



are unlikely to be realized exactly. To illustrate the effect of different trend rates on the actuarial valuation results, we have included a sensitivity analysis of the effect on the actuarial accrued liability, normal cost and annual required contribution of a 1% increase or decrease in the health care cost trend assumption. This sensitivity analysis applies to the partially funded scenario at . We have also included a sensitivity analysis of the effect on the actuarial accrued liability, normal cost and annual required contribution of a 0.50% increase or decrease in the partially funded discount rate assumption.

- **Timing**

All values discussed in this report are based on a January 1, 2012 valuation. This means that the first fiscal year of the valuation is July 1, 2011 through June 30, 2012. It is permissible, under GASB Statement No. 45, to use these values, without adjustment for interest or any other timing factor for a limited future time period. For an entity such as Concord Enterprise Funds, which will be doing a valuation every two years, the standard allows use of data “not more than twenty-four months before the beginning of the first of two years for which the valuation provides the ARC.” This means that it is acceptable for us to use the January 1, 2012 results without adjustment when discussing the 2012 fiscal year and the 2013 fiscal year. Included are projected costs for the fiscal year after the 2012 fiscal year.

## Medicare

Medicare eligibility is an important assumption with regard to future costs. Arlington has adopted Section of 18 of Chapter 32B of the Massachusetts General Laws. This section mandates that if a retiree is eligible for Medicare Part B, they must apply for it. We assume that active employees who were hired after March 31, 1986 will be Medicare eligible due to their mandated participation in the Medicare program. Active employees prior to that employment date are assumed to be 85% Medicare eligible. Adoption of Section 18 has led to lower costs for the retiree medical plan.

- **Medicare Changes**

The Medicare Prescription Drug, Improvement and Modernization Act of 2003 introduced



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significant changes to the Medicare program and its interaction with employer-sponsored post-retirement benefits. Medicare beneficiaries are able to participate in a voluntary, prescription drug coverage program. In order to encourage employers, including public-sector employers, to continue providing prescription drug coverage to retirees, the Act provides for a cash subsidy to employers whose prescription drug coverage is deemed to be actuarially equivalent to the new Medicare Part D drug coverage. This cash subsidy can be used to offset partially the cost of retiree medical benefits, including potentially reducing the accrued liability for a portion of the drug benefits provided by a retiree medical plan. The Act may have additional impact on retiree plan choices, as Medicare-eligible retirees may opt for the Part D coverage rather than an employer's plan options. Such changes, if they occur, may affect the selection of future actuarial assumptions.

GASB has indicated that the subsidy should not be included as part of the OPEB valuation. The reason being that the subsidy is considered general governmental revenue and as such is not earmarked towards the funding of OPEB benefits.

- [Health plan coverage election](#)

This was the same as for Concord the Town. Please refer to that section of the report.

#### [Participation](#)

This was the same as for Concord the Town. Please refer to that section of the report.

#### [Data](#)

The participant census data for the valuation study was supplied by Concord Enterprise Funds and the Town. Participants include Concord Enterprise Funds active employees including retirees, disability retirees, surviving spouses, and inactive former employees with 10 or more years of service who qualify for a vested retirement benefit.

The participant census data was not audited by Stone Consulting, Inc. However, it was checked for reasonableness.



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Summaries of active participants and Concord Enterprise Funds retiree census data are included in Section II.

### Assets

It is our understanding that the Town of Concord has created a trust fund whose sole Trustee is the Town Manager. However, Town Meeting is expected to revise the Trustees and expand the Board of Trustees. The purpose of the trust is to hold and invest the trust assets for the exclusive purpose of providing other post-employment benefits such as medical benefits for retirees. As of December 31, 2011, the market value of the trust fund for the Enterprise Funds was \$811,007. The total value of the funds at that date was \$1,885,241. The money was invested in several different stock and bond funds.

### Funding

There are alternative ways to plan for the payment of post-retirement health and life insurance benefits: continue to fund on a pay-as-you go method, contribute on an ad-hoc basis to a fund for this purpose, or develop a funding schedule in which the unfunded amount is amortized over some number of years. With the funding schedule, the normal cost must continue to be paid each year to keep current.

There is no legal requirement to prefund these post-employment benefit liabilities. Nor does GASB Statement No. 45 require actual prefunding; however, its accounting requirements will serve to highlight the substantial unfunded accrued liabilities associated with these benefits.



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*ILLUSTRATIVE FUNDING SCHEDULE*

The GASB Statement No. 45 is designed to account for non-pension post-employment benefits using an approach similar to the accounting for retirement benefits. It develops an Annual Required Contribution (“ARC”) that is based on the Normal Cost plus an amortization of the Unfunded Actuarial Accrued Liability (“UAAL”). To the extent that actual contributions equal to the ARC are made by the employer to the post-employment health benefit plan, no additional liability will be required to be shown on Concord Enterprise Funds’ balance sheet. Employer contributions may be in the form of benefit or premium payments or contributions to a fund set aside for future benefit payments. Such a fund must meet the requirements set out in the accounting standard.

We have calculated an illustrative funding schedule for the other post-employment benefits, consistent with the GASB Statement No. 45. This funding schedule assumes that Concord Enterprise Funds funds 100% of the ARC and begins with Concord Enterprise Funds’ Fiscal Year 2012. The full schedule is shown in Section II.

*Development of Funding Schedule and Annual Required Contribution*

The contribution amount under a fully funded scenario using the 7.50% discount rate for Fiscal 2012 is \$185,132. Part of this comes from the amortization of the January 1, 2012 Unfunded Actuarial Accrued Liability of \$1,277,036. This is equal to the funded AAL of \$2,088,043 less the funding to date of \$811,007. The UAAL is amortized over thirty years using an increasing amortization payment at the rate of assumed payroll increase due to inflation (3.25%). The funding contribution is the amortization payment plus the projected normal cost. As noted earlier, under the GASB Statement No. 45, thirty years is the maximum amortization period allowed. Shorter periods of time and/or other amortization patterns could be considered. We have used a twenty-seven year schedule. We have already had 3 years of funding starting from a thirty-year schedule. The intent is to use a closed amortization period. It should be noted that the contribution is assumed to be made at the end of the fiscal year, so the first contribution is assumed to be made June 30, 2012. The amount of the amortization



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payment in the first year is \$76,094. For the purposes of this schedule, we have not adjusted the January 1, 2012 liability for timing by applying interest to bring it to any future date.

Yearly contributions will increase, as both normal cost and amortization payments increase each year.

The remaining part of the ARC is the cost of the current year's benefit accrual, the normal cost, of \$109,038.

#### *Cash Flow Consideration*

We have analyzed the cash flow of a funded post-employment medical trust by comparing the expected payouts of claims over the twenty-seven year period to expected contribution levels. If the actuarial assumptions are met, the funded amounts will be sufficient to cover annual benefit payments each year. Prior to adopting a funding schedule we recommend additional analysis be conducted to examine the effects of potential actuarial gains and losses on the cash flow.

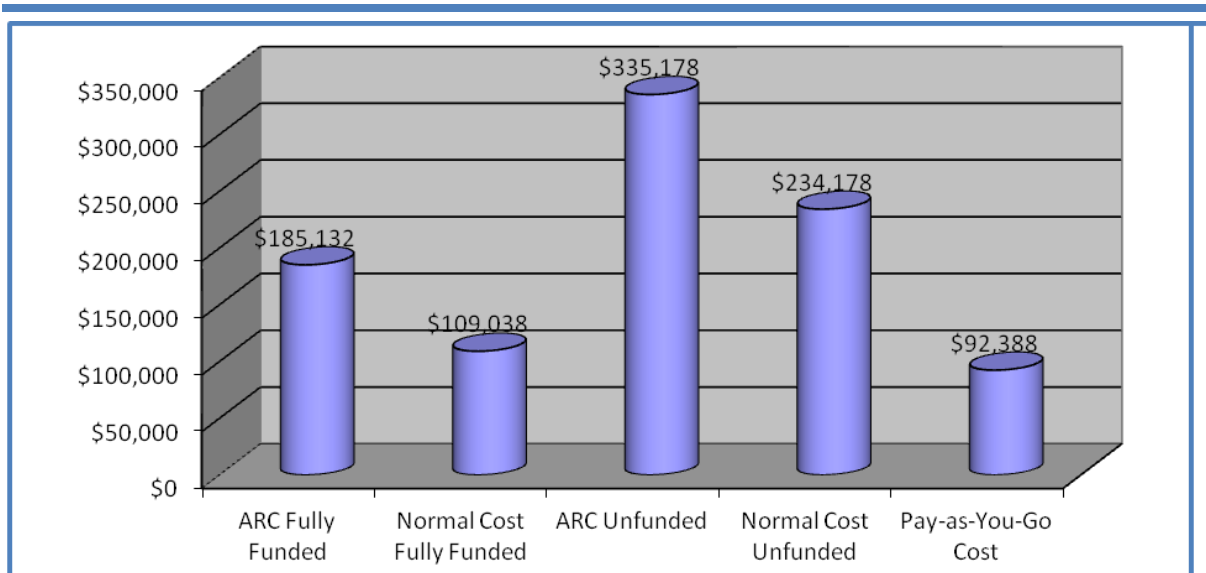
#### *FUNDING VERSUS PAY-AS-YOU-GO VERSUS PARTIAL FUNDING*

Currently, most Massachusetts governmental entities are paying for their post-employment medical benefits on a pay-as-you-go basis. This means that no amount in excess of the actual cost for the year is paid. All such entities must report figures for GASB Statement No. 45 based on the unfunded discount rate. Concord Enterprise Funds has elected, to date, to make additional contributions above the pay-as-you-go cost. It is funding the full ARC. This level of contribution is referred to as "full funding."

In order to understand the impact of fully funding versus no additional funding, a comparison of the ARCs and normal costs under both scenarios, and the pay-as-you-go amount is illustrated on the following chart:



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The chart depicts the advantage to the entity of a fully funding policy, since the ARC and Normal Cost are significantly higher under the unfunded versus the funded scenario.

As can be seen in the funding schedule, the retiree medical plan’s normal cost will increase each year, so that by the time the initial unfunded liability is fully amortized, the required annual contribution will be substantially higher than is illustrated here for the first year. The pay-as-you-go costs will also increase dramatically as more and more employees retire. A projection of annual expected retiree pay-as-you-go costs is included with the funding schedule.

It is very important to understand that, in order to utilize the higher discount rate that goes with the fully funded or partially funded scenarios, there must be a “Funding Policy.” That is, the Concord Enterprise Funds must intend to continue to payments and, in the future, must actually make them. Should the policy not be followed in future years, an adjustment to the discount rate would need to be made. As the figures above illustrate clearly, there is an iterative relationship between the degree of funding and the amounts that must be shown as liabilities, amortization payments, and normal cost figures. Lower funding levels lead to higher amounts for these key figures.

The partial subsidy of prescription drug benefit costs that is available under the Medicare



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Prescription Drug, Improvement and Modernization Act of 2003 is a potential source of funds for a portion of the retiree medical costs. To the extent that this subsidy reimburses Concord Enterprise Funds for drug benefits it would already be paying for, the additional cash from the subsidy could be used to help pre-fund future benefits. The magnitude of any future subsidy is only a small portion of the additional cost to fund. Other plan design changes, such as a carve-out of prescription drug coverage, may yield greater opportunities for savings.

*DETERMINATION OF THE NET OPEB OBLIGATION (NOO)*

The Statement does not require Concord Enterprise Funds to put its entire Actuarial Accrued Liability on its books immediately as a liability. Rather, a cost is applied to its assets each year. Over time this cost, which is called the OPEB Cost, will add up to the total liability. The total liability at any point in time is called the Net OPEB Obligation (NOO).

For the first year of funding, the OPEB Cost and ARC are identical. Amounts contributed toward the cost of other post-employment benefits must then be deducted. These amounts include: 1) actual premiums paid; 2) the extra implied costs or “implicit subsidy” associated with covering retirees; 3) any additional amounts paid during the year. The Net OPEB Cost is the OPEB Cost less these amounts. For year one (which was Fiscal 2009), where there is no prior NOO on the financial statement, the Net OPEB Cost is the same as the Net OPEB Obligation. Starting year two, the OPEB Cost must recognize not only the Normal Cost and Amortization Cost for the year but also add interest on the prior year’s NOO as well as subtract Annual Required Contribution (ARC) adjustment to prevent double counting of the prior year’s NOO. The interest and the ARC adjustments somewhat offset each other so the net impact is not large. The total contributions are then subtracted from the OPEB Cost and the result is added to the prior year’s NOO. In this manner, the difference between each year’s ARC and the contributions are accumulated. Please refer to the following tables on pages 18 in the following discussion.

We have assumed that Concord Enterprise Funds continues its current policy and contributes



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fully to fund the liability under the schedule shown on page 18. We have not illustrated this scenario with a “funding” schedule. The following chart projects the ARC, Pay-As-You-Go, Annual OPEB Cost and the Net OPEB Obligation for 8 years under the partially funded scenario. Note that the figures for the years 2009-2011 come from the Town’s annual financial report. Figures for 2012 and forward come from this valuation report. The Annual OPEB cost is the ARC plus an adjustment for interest not included in the ARC calculation. The Net OPEB Obligation is the accumulation of the Annual OPEB Cost minus any contributions. This is the amount that is subtracted from the Net Assets on your balance sheet. In the unfunded case, the contributions are the attributed pay-as-you-go amounts.



**CALCULATION OF NET OPEB OBLIGATION (NOO): Concord Total Enterprise Funds**

**"Funding" Schedule at 4.50% (2009 – 2011); 7.50% (2012+)**

Year	UAL	Normal Cost <sup>1</sup>	Amort. <sup>1</sup>	ARC	Interest on NOO <sup>1</sup>	ARC Adjust. <sup>1</sup>	OPEB Cost	Total Contribs. <sup>1</sup>	Change in NOO	NOO
2009	\$4,113,398	\$200,518	\$151,950	\$352,467	NA	NA	\$352,467	\$118,800	\$233,667	\$233,667
2010	\$4,375,958	\$209,040	\$166,641	\$375,681	\$9,931	\$8,898	\$376,714	\$610,380	(\$233,667)	(\$0)
2011	NA	NA	NA	\$381,063	(\$0)	(\$0)	\$381,063	\$381,063	\$0	(\$0)
2012	\$1,277,036	\$109,038	\$76,094	\$185,132	(\$0)	(\$0)	\$185,132	\$380,320	(\$195,188)	(\$195,188)
2013	\$1,048,642	\$117,216	\$63,817	\$181,033	(\$14,639)	(\$11,879)	\$178,273	\$178,273	\$0	(\$195,188)
2014	\$1,061,654	\$126,007	\$66,076	\$192,083	(\$14,639)	(\$12,148)	\$189,593	\$189,593	\$0	(\$195,188)

<sup>1</sup> Total Contributions for all fiscal years include the implicit premiums paid. Additional contributions by Fiscal Year are shown on the following page.



ALL ENTERPRISE COMBINED: CALCULATION OF NET OPEB OBLIGATION

	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
AAL	\$2,443,140	\$2,262,545	\$2,088,043	NA	\$4,375,958	\$4,113,398
Assets	\$1,381,486	\$1,213,903	\$811,007	<u>\$488,746</u>	<u>\$0</u>	<u>\$0</u>
UAAL	\$1,061,654	\$1,048,642	\$1,277,036	NA	\$4,375,958	\$4,113,398
Service Cost	\$126,007	\$117,216	\$109,038	NA	\$209,040	\$200,518
Amortization of UAAL	\$66,076	\$63,817	\$76,094	NA	<u>\$166,641</u>	<u>\$151,950</u>
ARC	\$192,083	\$181,033	\$185,132	NA	\$375,681	\$352,467
Interest on NOO	(\$14,639)	(\$14,639)	(\$0)	(\$0)	\$9,931	NA
ARC Adjustment	(\$12,148)	(\$11,879)	(\$0)	(\$0)	\$8,898	NA
OPEB Cost	\$189,593	\$178,273	\$185,132	\$381,063	\$376,714	\$352,467
Premiums and Implicit Subsidy Paid	\$118,361	\$107,073	\$92,388	\$117,871	\$129,701	\$118,800
Cash contributions	\$71,232	\$71,200	\$287,932	<u>\$263,192</u>	<u>\$480,679</u>	<u>\$0</u>
Total Contributions	\$189,593	\$178,273	\$380,320	\$381,063	\$610,380	\$118,800
Change in NOO	\$0	\$0	(\$195,188)	\$0	(\$233,667)	\$233,667
NOO Beginning of Fiscal Year	(\$195,188)	(\$195,188)	\$0	\$0	\$233,667	\$0
NOO End of Fiscal Year	(\$195,188)	(\$195,188)	(\$195,188)	\$0	\$0	\$233,667



**CALCULATION OF NET OPEB OBLIGATION (NOO): Concord: Light**

**"Funding" Schedule at 4.50% (2009 – 2011); 7.50% (2012+)**

Year	UAL	Normal Cost <sup>1</sup>	Amort. <sup>1</sup>	ARC	Interest on NOO <sup>1</sup>	ARC Adjust. <sup>1</sup>	OPEB Cost	Total Contribs. <sup>1</sup>	Change in NOO	NOO
2009	\$2,932,973	\$109,039	\$108,345	\$217,384	NA	NA	\$217,384	\$92,935	\$124,449	\$124,449
2010	\$3,076,409	\$113,673	\$117,153	\$230,827	\$5,289	\$4,739	\$231,377	\$355,826	(\$124,449)	(\$0)
2011	NA	NA	NA	\$246,278	(\$0)	(\$0)	\$246,278	\$246,278	\$0	(\$0)
2012	\$1,494,762	\$428,334	\$1,066,429	\$51,072	\$63,545	\$114,616	(\$0)	(\$0)	\$114,616	\$233,967
2013	\$1,573,051	\$640,436	\$932,615	\$54,902	\$56,756	\$111,658	(\$8,951)	(\$7,263)	\$109,970	\$109,970
2014	\$1,647,226	\$703,864	\$943,363	\$59,020	\$58,714	\$117,733	(\$8,951)	(\$7,428)	\$116,210	\$116,210

<sup>1</sup> Total Contributions for all fiscal years include the implicit premiums paid. Additional contributions by Fiscal Year are shown on the following page.



**CONCORD LIGHT DEPARTMENT: CALCULATION OF NET OPEB OBLIGATION**

	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
AAL	\$1,647,226	\$1,573,051	\$1,494,762	NA	\$3,076,409	\$2,932,973
Assets	\$703,864	\$640,436	\$428,334	<u>\$258,632</u>	<u>\$0</u>	<u>\$0</u>
UAAL	\$943,363	\$932,615	\$1,066,429	NA	\$3,076,409	\$2,932,973
Service Cost	\$59,020	\$54,902	\$51,072	NA	\$113,673	\$109,039
Amortization of UAAL	<u>\$58,714</u>	<u>\$56,756</u>	<u>\$63,545</u>	<u>NA</u>	<u>\$117,153</u>	<u>\$108,345</u>
ARC	\$117,733	\$111,658	\$114,616	\$246,278	\$230,827	\$352,467
Interest on NOO	(\$8,951)	(\$8,951)	(\$0)	(\$0)	\$5,289	NA
ARC Adjustment	(\$7,428)	(\$7,263)	(\$0)	(\$0)	\$4,739	NA
OPEB Cost	\$116,210	\$109,970	\$114,616	\$246,278	\$231,377	\$217,384
Premiums and Implicit Subsidy Paid	\$105,733	\$95,649	\$82,531	\$107,854	\$101,462	\$92,935
Cash contributions	\$10,478	\$14,321	\$151,436	<u>\$138,424</u>	<u>\$254,364</u>	<u>\$0</u>
Total Contributions	\$116,210	\$109,970	\$233,967	\$246,278	\$355,826	\$92,935
Change in NOO	\$0	\$0	(\$119,351)	\$0	(\$124,449)	\$124,449
NOO Beginning of Fiscal Year	(\$119,351)	(\$119,351)	\$0	\$0	\$124,449	\$0
NOO End of Fiscal Year	(\$119,351)	(\$119,351)	(\$119,351)	\$0	\$0	\$124,449



**CALCULATION OF NET OPEB OBLIGATION (NOO): Concord Swim Department**

**"Funding" Schedule at 4.50% (2009 – 2011); 7.50% (2012+)**

<b>Year</b>	<b>UAL</b>	<b>Normal Cost<sup>1</sup></b>	<b>Amort.<sup>1</sup></b>	<b>ARC</b>	<b>Interest on NOO<sup>1</sup></b>	<b>ARC Adjust.<sup>1</sup></b>	<b>OPEB Cost</b>	<b>Total Contribs.<sup>1</sup></b>	<b>Change in NOO</b>	<b>NOO</b>
2009	\$29,063	\$33,230	\$1,074	\$34,304	NA	NA	\$34,304	\$51	\$34,253	\$34,253
2010	\$64,888	\$34,642	\$2,471	\$37,114	\$1,456	\$1,304	\$37,265	\$71,517	(\$34,253)	\$0
2011	NA	NA	NA	\$39,704	\$0	\$0	\$39,704	\$39,704	\$0	\$0
2012	\$204,488	\$121,077	\$83,412	\$30,217	\$4,970	\$35,187	\$0	\$0	\$35,187	\$45,398
2013	\$250,132	\$181,645	\$68,487	\$32,483	\$4,168	\$36,651	(\$766)	(\$621)	\$36,507	\$36,507
2014	\$301,289	\$231,990	\$69,298	\$34,919	\$4,313	\$39,232	(\$766)	(\$635)	\$39,102	\$39,102

<sup>1</sup> Total Contributions for all fiscal years include the implicit premiums paid. Additional contributions by Fiscal Year are shown on the following page.



**CONCORD SWIM DEPARTMENT: CALCULATION OF NET OPEB OBLIGATION**

	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
AAL	\$301,289	\$250,132	\$204,488	NA	\$64,888	\$29,063
Assets	<u>\$231,990</u>	<u>\$181,645</u>	<u>\$121,077</u>	<u>\$72,661</u>	<u>\$0</u>	<u>\$0</u>
UAAL	\$69,298	\$68,487	\$83,412	NA	\$64,888	\$29,063
Service Cost	\$34,919	\$32,483	\$30,217	NA	\$34,642	\$33,230
Amortization of UAAL	<u>\$4,313</u>	<u>\$4,168</u>	<u>\$4,970</u>	NA	\$2,471	\$1,074
ARC	\$39,232	\$36,651	\$35,187	\$39,704	\$37,114	\$34,304
Interest on NOO	(\$766)	(\$766)	\$0	\$0	\$1,456	NA
ARC Adjustment	(\$635)	(\$621)	\$0	<u>\$0</u>	<u>\$1,304</u>	<u>NA</u>
OPEB Cost	\$39,102	\$36,507	\$35,187	\$39,704	\$37,265	\$34,304
Premiums and Implicit Subsidy Paid	\$2,594	\$2,346	\$2,025	\$58	\$55	\$51
Cash contributions	<u>\$36,508</u>	<u>\$34,160</u>	<u>\$43,373</u>	<u>\$39,646</u>	<u>\$71,462</u>	<u>\$0</u>
Total Contributions	\$39,102	\$36,507	\$45,398	\$39,704	\$71,517	\$51
Change in NOO	\$0	\$0	(\$10,211)	\$0	(\$34,253)	\$34,253
NOO Beginning of Fiscal Year	(\$10,210)	(\$10,210)	\$0	\$0	\$34,253	\$0
NOO End of Fiscal Year	(\$10,210)	(\$10,210)	(\$10,210)	\$0	\$0	\$34,253



### CALCULATION OF NET OPEB OBLIGATION (NOO): Concord Water Department

**"Funding" Schedule at 4.50% (2009 – 2011); 7.50% (2012+)**

Year	UAL	Normal Cost <sup>1</sup>	Amort. <sup>1</sup>	ARC	Interest on NOO <sup>1</sup>	ARC Adjust. <sup>1</sup>	OPEB Cost	Total Contribs. <sup>1</sup>	Change in NOO	NOO
2009	\$921,090	\$46,599	\$34,025	\$80,624	NA	NA	\$80,624	\$20,652	\$59,972	\$59,972
2010	\$987,729	\$48,579	\$37,614	\$86,193	\$2,549	\$2,284	\$86,458	\$146,430	(\$59,972)	\$0
2011	NA	NA	NA	\$76,065	\$0	\$0	\$76,065	\$76,065	\$0	\$0
2012	\$311,034	\$209,277	\$101,757	\$22,200	\$6,063	\$28,263	\$0	\$0	\$28,263	\$80,765
2013	\$351,490	\$313,458	\$38,032	\$23,865	\$2,315	\$26,179	(\$3,938)	(\$3,195)	\$25,437	\$25,437
2014	\$395,700	\$356,505	\$39,195	\$25,655	\$2,439	\$28,094	(\$3,938)	(\$3,268)	\$27,424	\$27,424

<sup>1</sup> Total Contributions for all fiscal years include the implicit premiums paid. Additional contributions by Fiscal Year are shown on the following page.



**CONCORD WATER DEPARTMENT: CALCULATION OF NET OPEB OBLIGATION**

	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
AAL	\$395,700	\$351,490	\$311,034	NA	\$987,729	\$921,090
Assets	<u>\$356,505</u>	<u>\$313,458</u>	<u>\$209,277</u>	<u>\$125,962</u>	<u>\$0</u>	<u>\$0</u>
UAAL	\$39,195	\$38,032	\$101,757	NA	\$987,729	\$921,090
Service Cost	\$25,655	\$23,865	\$22,200	NA	\$48,579	\$46,599
Amortization of UAAL	<u>\$2,439</u>	<u>\$2,315</u>	<u>\$6,063</u>	<u>NA</u>	<u>\$37,614</u>	<u>\$34,025</u>
ARC	\$28,094	\$26,179	\$28,263	\$76,065	\$86,193	\$80,624
Interest on NOO	(\$3,938)	(\$3,938)	\$0	\$0	\$2,549	NA
ARC Adjustment	(\$3,268)	(\$3,195)	\$0	\$0	\$2,284	NA
OPEB Cost	\$27,424	\$25,437	\$28,263	\$76,065	\$86,458	\$80,624
Premiums and Implicit Subsidy Paid	\$11,022	\$7,262	\$6,266	\$7,967	\$22,547	\$20,652
Cash contributions	<u>\$16,402</u>	<u>\$18,175</u>	<u>\$74,498</u>	<u>\$68,098</u>	<u>\$123,883</u>	<u>\$0</u>
Total Contributions	\$27,424	\$25,437	\$80,765	\$76,065	\$146,430	\$20,652
Change in NOO	\$0	\$0	(\$52,501)	\$0	(\$59,972)	\$59,972
NOO Beginning of Fiscal Year	(\$52,501)	(\$52,501)	\$0	\$0	\$59,972	\$0
NOO End of Fiscal Year	(\$52,501)	(\$52,501)	(\$52,501)	\$0	\$0	\$59,972



**CALCULATION OF NET OPEB OBLIGATION (NOO): Concord Sewer Department**

**"Funding" Schedule at 4.50% (2009 – 2011); 7.50% (2012+)**

Year	UAL	Normal Cost <sup>1</sup>	Amort. <sup>1</sup>	ARC	Interest on NOO <sup>1</sup>	ARC Adjust. <sup>1</sup>	OPEB Cost	Total Contribs. <sup>1</sup>	Change in NOO	NOO
2009	\$230,272	\$11,650	\$8,506	\$20,156	NA	NA	\$20,156	\$5,163	\$14,993	\$14,993
2010	\$246,932	\$12,145	\$9,403	\$21,548	\$637	\$571	\$21,614	\$36,607	(\$14,993)	\$0
2011	NA	NA	NA	\$19,016	\$0	\$0	\$19,016	\$19,016	\$0	\$0
2012	\$77,759	\$52,319	\$25,439	\$5,550	\$1,516	\$7,066	\$0	\$0	\$7,066	\$20,191
2013	\$87,873	\$78,365	\$9,508	\$5,966	\$579	\$6,545	(\$984)	(\$799)	\$6,359	\$6,359
2014	\$98,925	\$89,126	\$9,799	\$6,414	\$610	\$7,024	(\$984)	(\$817)	\$6,856	\$6,856

<sup>1</sup> Total Contributions for all fiscal years include the implicit premiums paid. Additional contributions by Fiscal Year are shown on the following page.



CONCORD SEWER DEPARTMENT: CALCULATION OF NET OPEB OBLIGATION

	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
AAL	\$98,925	\$87,873	\$77,759	NA	\$246,932	\$230,272
Assets	\$89,126	\$78,365	\$52,319	\$31,491	\$0	\$0
UAAL	\$9,799	\$9,508	\$25,439	NA	\$246,932	\$230,272
Service Cost	\$6,414	\$5,966	\$5,550	NA	\$12,145	\$11,650
Amortization of UAAL	\$610	\$579	\$1,516	NA	\$9,403	\$8,506
ARC	\$7,024	\$6,545	\$7,066	\$19,016	\$21,548	\$20,156
Interest on NOO	(\$984)	(\$984)	\$0	\$0	\$637	NA
ARC Adjustment	(\$817)	(\$799)	\$0	\$0	\$571	NA
OPEB Cost	\$6,856	\$6,359	\$7,066	\$19,016	\$21,614	\$20,156
Premiums and Implicit Subsidy Paid	\$2,007	\$1,816	\$1,567	\$1,992	\$5,637	\$5,163
Cash contributions	\$4,849	\$4,544	\$18,625	\$17,024	\$30,971	\$0
Total Contributions	\$6,856	\$6,359	\$20,191	\$19,016	\$36,607	\$5,163
Change in NOO	\$0	\$0	(\$13,125)	\$0	(\$14,993)	\$14,993
NOO Beginning of Fiscal Year	(\$13,125)	(\$13,125)	\$0	\$0	\$14,993	\$0
NOO End of Fiscal Year	(\$13,125)	(\$13,125)	(\$13,125)	\$0	\$0	\$14,993



## Implementation

According to the GASB Statement No. 45, its provisions would be effective for Concord Enterprise Funds fiscal years beginning after December 15, 2007. The timing is due to The Town of Concord being a “Tier 2 government under GASB 34”. In the first fiscal year of adoption, Fiscal 2009, Concord Enterprise Funds recorded a liability of \$233,667 on its balance sheet to the extent that its contributions (including benefit payments) for other post-employment benefits were less than the Annual Required Contribution (“ARC”) determined in accordance with the GASB standard and described above. The total actuarial liability is determined by a valuation to be performed at least every two years. The total actuarial liability is reduced by any assets set aside to pre-fund the post-retirement benefits, with the resulting unfunded actuarial liability being amortized according to a funding schedule similar to that illustrated in this report. Subsequent to the 2009 Fiscal Year, Concord began funding its Enterprise Fund OPEB obligations in full. So, at the end of Fiscal 2011, Concord Enterprise Funds had recorded a figure of \$0 for its NOO.

To be considered a funded system, the retiree medical plan assets must be “segregated and restricted in a trust, or equivalent arrangement, in which (a) employer contributions to the plan are irrevocable, (b) assets are dedicated to providing benefits to retirees and their beneficiaries, and (c) assets are legally protected from creditors of the employers or plan administrator, for the payment of benefits in accordance with the terms of the plan.” (GASB 45, p. 47, “Plan Assets”). Our understanding is that Concord Enterprise Funds has set up such a trust and therefore Concord Enterprise Funds receives “credit” under the GASB accounting standard for assets set aside to pre-fund post-retirement benefits.



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## Recommendations and Comments

Refer to the Concord - The Town section of this report for comments. Those points made there apply to the Enterprise Funds as well.



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## SECTION II

### ACTUARIAL VALUATION DETAILS

#### Population Data

*A. DISTRIBUTION BY AGE: INACTIVES, RETIREES, BENEFICIARIES,  
TERMINATED VESTEDS AND SURVIVORS WITH MEDICAL COVERAGE*

Age	Number <sup>(1)</sup>
0-19	0
20-24	0
25-29	0
30-34	0
35-39	0
40-44	0
45-49	0
50-54	1
55-59	4
60-64	1
65-69	1
70-74	7
75-79	3
80-84	4
85-89	0
90-94	1
95-99	0
100+	0
<b>TOTAL</b>	<b>22</b>

<sup>(1)</sup> Includes only retired employees and vested terminees, beneficiaries, and survivors with medical coverage.



*B. FUTURE RETIREES – ACTIVE PARTICIPANTS*

# OF PARTICIPANTS\*

Current Plan	Medicare Eligible	Not Medicare Eligible	Total
No Medical/ Unknown	19	2	21
Indemnity	0	0	0
Managed Care	38	3	41
<b>TOTAL</b>	<b>57</b>	<b>5</b>	<b>62</b>

\* “Pre-Medicare eligible” means hired March 31, 1986 or before and “Medicare eligible” means hired after March 31, 1986. Employees hired March 31, 1986 or before do not contribute to Medicare.



*Town of Concord  
Other Post-Employment Benefits Valuation*

*as of January 1, 2012*

**C. DISTRIBUTION BY AGE AND SERVICE: ACTIVE PARTICIPANTS**

<b>Age Group</b>	<b>0-4</b>	<b>5-9</b>	<b>10-15</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40+</b>	<b>Total</b>
<b>0-19</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>20-24</b>	0	1	0	0	0	0	0	0	0	<b>1</b>
<b>25-29</b>	2	1	0	0	0	0	0	0	0	<b>3</b>
<b>30-34</b>	7	1	0	0	0	0	0	0	0	<b>8</b>
<b>35-39</b>	2	2	3	0	0	0	0	0	0	<b>7</b>
<b>40-44</b>	0	1	0	0	0	0	0	0	0	<b>1</b>
<b>45-49</b>	2	2	2	3	1	2	0	0	0	<b>12</b>
<b>50-54</b>	8	1	3	2	0	0	1	0	0	<b>15</b>
<b>55-59</b>	0	0	2	0	1	2	1	0	0	<b>6</b>
<b>60-64</b>	1	1	0	1	2	1	0	0	0	<b>6</b>
<b>65-69</b>	0	0	1	0	0	0	0	0	0	<b>1</b>
<b>70-74</b>	0	0	1	1	0	0	0	0	0	<b>2</b>
<b>75-79</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>80-84</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>85-89</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>90-94</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>95-99</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>100+</b>	0	0	0	0	0	0	0	0	0	<b>0</b>
<b>TOTAL</b>	<b>22</b>	<b>10</b>	<b>12</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>62</b>



## SUMMARY OF RESULTS

<b>Actives</b>	
- Already in Medicare	0
- Pre-Medicare Coverage	5
- Post-Medicare Coverage	<u>57</u>
Total	62
<b>Retired, Disabled, Survivors, Vesteds, and Beneficiaries</b>	<b>22</b>

<b>Actuarial Accrued Liability and Unfunded Actuarial Accrued Liability (as of January 1, 2012)</b>		
	<b>At 7.50% Discount</b>	<b>At 4.00% Discount</b>
AAL Active Employees	\$1,275,423	\$2,456,114
AAL Current Retirees	\$812,620	\$1,088,374
<b>TOTAL AAL</b>	<b>\$2,088,043</b>	<b>\$3,544,488</b>
FUNDING	\$811,007	\$811,007
<b>TOTAL UAAL</b>	<b>\$1,277,036</b>	<b>\$2,733,481</b>

<b>Normal (Service) Cost (as of January 1, 2012)</b>		
	<b>At 7.50% Discount</b>	<b>At 4.00% Discount</b>
<b>TOTAL</b>	<b>\$109,038</b>	<b>\$234,178</b>



**SUMMARY OF RESULTS**  
(continued)

Annual Required Contribution (ARC) Calculation		
	At 7.50% Discount	At 4.00% Discount
Amortization of UAAL (26 yrs for Unfunded, 30 Yrs for Funded)	\$76,094	\$111,052
Normal Cost	\$109,038	\$234,178
<b>TOTAL</b>	<b>\$185,132</b>	<b>\$345,230</b>

**Expected Claims**

- Fiscal 2012 \$92,388

Total Enterprise Funds: Schedule of Funding Progress  
Other Post-Employment Benefits (Dollars in Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) [Projected Unit Credit] (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b-a)/c
1/1/2009	\$0	\$4,113	\$4,113	0%	N/A	N/A
1/1/2012	\$811	\$2,088	\$1,277	38.8%	\$4,256	30.0%



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

**Concord Electric Department: Schedule of Funding Progress**  
Other Post-Employment Benefits (Dollars in Thousands)

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) [Projected Unit Credit] (b)</b>	<b>Unfunded AAL (UAAL) (b-a)</b>	<b>Funded Ratio (a/b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll (b-a)/c)</b>
1/1/2009	\$0	\$2,933	\$2,933	0%	N/A	N/A
1/1/2012	\$428	\$1,495	\$1,066	28.7%	\$2,427	43.9%

**Concord Swim Department: Schedule of Funding Progress**  
Other Post-Employment Benefits (Dollars in Thousands)

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) [Projected Unit Credit] (b)</b>	<b>Unfunded AAL (UAAL) (b-a)</b>	<b>Funded Ratio (a/b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll (b-a)/c)</b>
1/1/2009	\$0	\$29	\$29	0%	N/A	N/A
1/1/2012	\$121	\$204	\$83	59.2%	\$694	12.0%



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

Concord Water Department: Schedule of Funding Progress  
Other Post-Employment Benefits (Dollars in Thousands)

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) [Projected Unit Credit] (b)</b>	<b>Unfunded AAL (UAAL) (b-a)</b>	<b>Funded Ratio (a/b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll (b-a)/c)</b>
1/1/2009 (Town)	\$0	\$921	\$921	0%	N/A	N/A
1/1/2012	\$209	\$311	\$102	67.3%	\$907	11.2%

Concord Sewer Department: Schedule of Funding Progress  
Other Post-Employment Benefits (Dollars in Thousands)

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) [Projected Unit Credit] (b)</b>	<b>Unfunded AAL (UAAL) (b-a)</b>	<b>Funded Ratio (a/b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll (b-a)/c)</b>
1/1/2009 (Town)	\$0	\$230	\$230	0%	N/A	N/A
1/1/2012	\$52	\$78	\$26	67.3%	\$227	11.2%



### Sensitivity Analysis

The results of any actuarial valuation are sensitive to the assumptions used. That is, a change in an actuarial assumption will produce a change in the actuarial accrued liability and/or normal cost each year of the valuation. To illustrate this sensitivity, we performed valuations in which we changed two different inputs: the trend rate and the discount rate.

#### A) Trend Rate Sensitivity

For postretirement medical plans in particular, the calculated actuarial values are highly sensitive to the assumed rate of health care cost trend. This is due to the compounding effect of the annual trend rates assumed for medical costs, as opposed to pension valuations where benefit levels typically remain fixed.

The following table illustrates the effect on our valuation results of a 1% increase or decrease in the assumed rates of health care cost trend in each year.

As of January 1, 2012	Health Care Cost Trend Rates		
	As Reported	+1% Each Year	-1% Each Year
<b>Liability for:</b>			
• Future Retirees	\$1,275,423	\$1,508,965	\$1,089,558
• Current Retirees, Beneficiaries, and Survivors	<u>\$812,620</u>	<u>\$874,057</u>	<u>\$759,200</u>
<b>Total AAL</b>	\$2,088,043	\$2,383,022	\$1,848,758
Normal Cost	\$109,038	\$132,859	\$90,537
<b>Annual Required Contribution for Fiscal Year 2012:</b>	\$185,132	\$226,530	\$152,373



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

The cumulative effect of a 1% increase in health care cost trend increases the AAL by approximately 14%, the normal cost by 22%, and the ARC by 22%. A 1% decrease in trend would decrease the AAL by 11%, the normal cost by 17% and the ARC by 18%.

There is the likelihood – based on historical experience – of significant deviations from the smooth rates of health care cost increase typically projected in any actuarial valuation. Therefore, emerging experience under the plan is likely to differ from the assumptions made as of any valuation date. This will produce actuarial gains and losses each year, even if the underlying assumptions remain reasonable for the future. Amortization of gains and losses will affect the updated funding schedule calculated at any point in the future.

B) Discount Rate Sensitivity

We also examined the sensitivity of the various key numbers to changes in the discount rate. For this testing, we varied the discount rate by 0.50%, or in other words, we used rates of 7.00% and 8.00%. The following table shows the results we obtained:

As of January 1, 2012	Discount Rates		
	As Reported	Plus 0.50% (8.00%)	Minus 0.50% (7.00%)
<b>Liability for:</b>			
• Future Retirees	\$1,275,423	\$1,178,503	\$1,384,812
• Current Retirees, Beneficiaries, and Survivors	<u>\$812,620</u>	<u>\$771,946</u>	<u>\$842,733</u>
<b>Total AAL</b>	\$2,088,043	\$1,950,449	\$2,227,545
Normal Cost	\$109,038	\$99,358	\$120,096
<b>Annual Required Contribution for Fiscal Year 2012:</b>	\$185,132	\$170,633	\$200,383

Thus, the cumulative effect of a 0.50% decrease in the discount rate is to increase the AAL by approximately 7%, the normal cost by 10%, and the ARC by 8%. A 0.50% increase in the discount rate would decrease the AAL by 7%, the normal cost by 9% and the ARC by 8%. It is



*Town of Concord  
Other Post-Employment Benefits Valuation  
as of January 1, 2012*

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prudent, and GASB Statement No. 45 requires, an updated actuarial valuation be performed periodically. For an entity of Concord Enterprise Funds' size, a new valuation will be required at least every two years.



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### SECTION III

#### Summary for Concord and All Enterprise Funds

This section presents some tables that have already been shown in the separate reports for the Town and the Enterprise Funds on a combined basis. Concord may have need to present some of the date on a combined basis as well as for the separate units. These tables include:

- 1) The NOO table (both versions)
- 2) The Schedule of Funding Progress



**CALCULATION OF NET OPEB OBLIGATION (NOO): Town and Enterprise Funds**

**"Funding" Schedule at 4.50% (2009 – 2011); 6.50% (2012+)**

Year	UAL	Normal Cost <sup>1</sup>	Amort. <sup>1</sup>	ARC	Interest on NOO <sup>1</sup>	ARC Adjust. <sup>1</sup>	OPEB Cost	Total Contribs. <sup>1</sup>	Change in NOO	NOO
2009	\$43,796,093	\$2,181,279	\$1,617,835	\$3,799,114	NA	NA	\$3,799,114	\$1,545,697	\$2,253,417	\$2,253,417
2010	\$46,353,209	\$2,273,983	\$1,765,183	\$4,039,166	\$95,770	\$85,813	\$4,049,123	\$2,168,200	\$1,880,923	\$4,134,340
2011	NA	NA	NA	\$4,295,372	\$196,138	\$181,388	\$4,310,122	\$3,156,898	\$1,153,224	\$5,287,564
2012	\$28,100,356	\$1,658,543	\$1,520,014	\$3,178,557	\$343,692	\$284,633	\$3,237,615	\$2,074,128	\$1,163,487	\$6,451,050
2013	\$29,441,470	\$1,728,701	\$1,629,885	\$3,358,587	\$417,366	\$354,709	\$3,421,244	\$2,206,143	\$1,215,101	\$7,666,151
2014	\$30,897,100	\$1,801,952	\$1,754,632	\$3,556,584	\$496,348	\$432,769	\$3,620,163	\$2,200,850	\$1,419,313	\$9,085,464
2015	\$32,535,503	\$1,878,440	\$1,898,262	\$3,776,702	\$588,603	\$527,322	\$3,837,984	\$2,591,521	\$1,246,463	\$10,331,927
2016	\$33,950,130	\$1,958,319	\$2,038,480	\$3,996,799	\$669,623	\$617,465	\$4,048,958	\$2,986,587	\$1,062,371	\$11,394,298

<sup>1</sup> Total Contributions for all fiscal years include the implicit premiums paid plus additional cash contributions. The actual additional cash contributions are shown on the next page.



**CALCULATION OF NET OPEB OBLIGATION (Town and Enterprise - Alternative Presentation)**

	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
AAL	\$34,979,739	\$32,391,667	\$29,985,597	NA	\$46,353,209	\$43,796,093
Assets	<u>\$4,082,639</u>	<u>\$2,950,197</u>	<u>\$1,885,241</u>	<u>\$1,617,912</u>	\$0	\$0
UAL	\$30,897,100	\$29,441,470	\$28,100,356	NA	\$46,353,209	\$43,796,093
Service Cost	\$1,801,952	\$1,728,701	\$1,658,543	NA	\$2,273,983	NA
Amortization of unfunded accrued liability	<u>\$1,754,632</u>	<u>\$1,629,885</u>	<u>\$1,520,014</u>	NA	<u>\$1,765,183</u>	NA
ARC	\$3,556,584	\$3,358,587	\$3,178,557	\$4,295,372	\$4,039,166	\$3,799,114
Interest on NOO	\$496,348	\$417,366	\$343,692	\$196,138	\$95,770	\$0
ARC Adjustment	\$432,769	\$354,709	\$284,633	<u>\$181,388</u>	<u>\$85,813</u>	\$0
OPEB Cost	\$3,620,163	\$3,421,244	\$3,237,615	\$4,310,122	\$4,049,123	\$3,799,114
Premiums and Implicit Subsidy Paid	\$1,479,618	\$1,334,943	\$1,286,196	\$1,793,706	\$1,687,521	\$1,545,697
Cash contributions	<u>\$721,232</u>	<u>\$871,200</u>	<u>\$787,932</u>	<u>\$1,363,192</u>	<u>\$480,679</u>	\$0
Total Contributions	\$2,200,850	\$2,206,143	\$2,074,128	\$3,156,898	\$2,168,200	\$1,545,697
Change in NOO	\$1,419,313	\$1,215,101	\$1,163,487	\$1,153,224	\$1,880,923	\$2,253,417
NOO Beginning of Fiscal Year	\$7,666,151	\$6,451,050	\$5,287,564	\$4,134,340	\$2,019,750	\$0
NOO End of Fiscal Year	\$9,085,464	\$7,666,151	\$6,451,050	\$5,287,564	\$4,368,007	\$2,019,750



Total Enterprise Funds: Schedule of Funding Progress Other Post-Employment  
Benefits

(Dollars in Thousands; 2009 UAAL % set equal to entire Town)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) [Projected Unit Credit] (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b-a)/c
1/1/2009	\$0	\$43,796	\$43,796	0%	N/A	N/A
1/1/2012	\$1,885	\$29,986	\$28,100	6.3%	\$49,965	60.0%

