Town of Plymouth
Other Post-Employment Benefits

Actuarial Valuation
January 1, 2011

STONE
CONSULTING, INC.

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SECTION I

MANAGEMENT SUMMARY

Introduction

This report presents the results of the actuarial valuation of the Town of Plymouth Other Post-employment Benefits as of January 1, 2011. 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, 2011 supplied by Plymouth and the Massachusetts State Teachers Retirement. 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,

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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 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. For an unfunded plan, the GASB Statement No. 45 calls for the use of a discount rate approximating the rate of return of Plymouth's general assets. The rate we have used for Plymouth is 4.25%. The OPEB liability is extremely sensitive to this assumption. Use of the unfunded rate instead of the funded rate causes the Annual Required Contribution (ARC), Accrued Actuarial Liability (AAL), and the Normal Cost to increase dramatically.

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, 2011 (at 4.25%% discount rate) is $390,817,988. This is made up of approximately $164.1 million for current active Plymouth employees and approximately $226.7 million for Plymouth retirees, spouses and survivors.

- The Normal Cost is the "price" attributable to benefits earned in the current year. The Normal Cost as of January 1, 2011 (at the 4.25% discount rate) is approximately $13.7 million.

- Based on a twenty-six year funding schedule (at the 4.25% discount rate), the Fiscal 2012 contribution would be $30,575,940. 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 and a thirty-year funding schedule of $20,246,008. These compare to the pay-as-you-go contribution of the existing costs for current retirees of $13,412,727. 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 16 and the accompanying table on page 36. The following table shows the breakdown of the

Actuarial Accrued Liability between future retirees and current retirees, as well as the normal cost, at Plymouth's different discount rates:

Actuarial Results as of January 1, 2011	**7.50% Rate**	**4.25% Rate**
Current Actives	$86,341,165	$164,130,290
Current Retirees, Beneficiaries, Vesteds and Survivors	$160,356,482	$226,687,698
Total AAL	$246,697,647	$390,817,988
Normal Cost	$6,349,467	$13,664,053
ARC (Uses 26 yrs for Unfunded, 30 Yrs for Funded)	$20,246,008	$30,575,940

Change from Prior Valuation

Plymouth 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	1/1/2011 Figure	1/1/2009 Figure	% Change
AAL	$390.8 million	$379.3 million	+3.0%
Normal Cost	$13.7 million	$14.9 million	-8.2%
Amortization Cost	$16.9 million	$14.4 million	+17.1%
ARC	$30.0 million	$29.3 million	+2.4%
Pay-As-You-Go for Year 1	$13.4 million	$12.7 million	+5.4%

The following addresses the reasons behind these changes in the actuarial results:

1) The 2011 trends and claims produce higher actuarial results. However, changes in our methodology for handling dependents offset this. The net was a 2% reduction in the NC and a 1% increase in the AAL.

2) Participation up from 87.5% to 95%. This resulted in an increase of 9% for actives for both the AAL and the NC.

3) The number of actives was down about 7% while the number of retirees was up 10%. The active change reduced the AAL and the NC while the retiree change increased only the AAL.

4) The shorter amortization period (by two years) increased the amortization amount, and, hence, the ARC.

5) Other methodology changes included the following:

   a) Updating of the mortality assumption to 2011. This increased the AAL about 1% and the NC about 1%.

b) Changes in the assumptions relating to withdrawal, disability and retirement. These changes reduced the NC by 4% and the AAL by 2%.

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

	Current Val (1/1/2011)	**Prior Val (1/1/2009)**
Mortality	Projected to 2011	Projected to 2009
Employee Participation	95%	87.5%
Spouse %	80%	85%
Plans Pre-65	80% MC/20% IND	80% MC/20% IND
Plans Post-65(Medicare Only)	89% IND/10% MC	94% IND/5% MC
Family % Pre-65/Post-65	55%/35%	60%/NA
Claims age 65 COMMC Blended	$21,264/$17,874	$22,505/NA
Claims age 65 COMIND Blended	$32,799/$27,913	$18,778/NA
Claims age 65 MEDMC/MEDIND	$5,325/$3,736 (Age-graded)	$5,044/$4,644(Flat)
Cumulative Trend Years 1-10		
Commercial MC	84%	84%
Commercial IND	100%	196%
Medicare MC	85%	77%
Medicare IND	86%	93%
# Actives	1323	1429
# Retirees	1445	1240

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 (including Medicare reimbursements) 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% and 4.25% as well as mortality, disability, withdrawal and retirement rates. These discount rates apply to the two scenarios of either a fully funded or unfunded 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. GASB Statement No. 45 indicates that the discount rate for an unfunded 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 rate we are recommending for this scenario is 4.25%. 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 using for this is 7.50%. For a plan (not the case with Plymouth) 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. It should be noted that the rate of return assumption could change significantly in the future due to changes in the economic environment.

We recommend that Plymouth adopt a funding policy for its OPEB benefits. The funding policy would describe the amounts and timing of the contributions. The GASB statement does not have a requirement for a formal funding policy document but indicates that a formal funding policy should be adopted. We recommend that the Town detail its intent with either a written document or in the minutes of a meeting.

The discount rate would change if the Town implements any sort of funding above the pay-as-you-go amount. Such a change would likely lead to a higher discount rate and, hence, a lower AAL, possibly significantly so. The rate would be dependent on the investment policy and might not be the same as the funded rate shown in this report.

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, 2011. Typically, we analyze the plans offered in terms of four different categories: whether the plan offered is Commercial (not integrated with Medicare) or supplemental to Medicare 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.

In the case of Plymouth, there are plans in all four of these categories: two Commercial Managed Care plans, one Commercial Indemnity Plan, two Medicare Indemnity plans and one Medicare Managed Care plan. Please refer to the "Plan Definition Table" on page 29 for more details.

For all of these groups, weighted-average costs for each plan grouping were calculated based

on the actual Plymouth 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 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. This method was applied only to the Commercial plans, since these plans incorporate both retirees and active employees. 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.

The Dental rates were age-graded in a manner similar to the medical plans. However, a less steep slope was applied to the costs since dental costs are less sensitive to age. Also, the age at which the increases ceases was lower than for the medical.

Plymouth also reimburses the Medicare penalties for certain retirees. These costs were not age-graded. We simply determined the average amount contributed per person.

- 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 Plymouth'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. Since no future rates of increase were known as of the time the valuation was run, all trend rates were based on our standard assumptions.

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 some 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 Managed Care trends that begin at 10% and scale down to 5% while the Commercial Indemnity trends begin at 11% and grade down to 6%. For Medicare, the Indemnity trend rates begin at 10% and scale down to 6% while the Managed Care trend rates being at 9% 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.

First year trends in 2011 were modified from our assumptions to reflect the actual changes in the rates that were implemented on 7/1/2011.

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 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.

Trends for Dental begin at 9% and grade down to 5%. For the Medicare Penalties, a flat 5% 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 to the base (4.25%) unfunded scenario. 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 base unfunded discount rate assumption.

- Timing

All values discussed in this report are based on a January 1, 2011 valuation. This means that the first year of the valuation is January 1, 2011 through December 31, 2011. 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 Plymouth, 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, 2011 results without adjustment when discussing the 2012 fiscal year. Included are projected costs for the fiscal year after the 2012 fiscal year. If you do not make any cash contributions or there are no significant plan changes you will be able to use the results for both fiscal years.

- Medicare

Medicare eligibility is an important assumption with regard to future costs. For those entities that have adopted Section of 18 of Chapter 32B of the code (as has Plymouth), we will 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.

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.

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 in 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 Plymouth, 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 both of these groups will have the option to select plans at key ages. It should be kept in mind that these percentages are applicable even to actives not currently enrolled in a medical plan. The reason for this is that these people could change their behavior and enroll in a plan at retirement. The likelihood that they (or other actives) elect to do so is controlled by the participation assumption (see below). 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 they have opted out of Plymouth 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 them 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 tables show the way we modeled the choices at each of the key ages.

Plymouth Participant Behavior at Key Ages			
Status	Age	Pre-65 Retirement	65+ Retirement
Active	Under 65	80% Commercial Managed Care 20% Commercial Indemnity	89% Medicare Indemnity 10% Medicare Managed Care 1% Commercial
Active	65+	NA	89% Medicare Indemnity 10% Medicare Managed Care 1% Commercial
Retired	Under 65	Current Plan	89% Medicare Indemnity 10% Medicare Managed Care 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 Plymouth retirees to determine the historical frequency at which retirees elect to take medical coverage. Based on this study, we assumed that 95.0% of future eligible retirees and spouses of retirees will elect health plan coverage. For Life Insurance, we assumed that 60% of future retirees will elect coverage. For Dental Insurance, we assumed that 75% of future retirees will elect coverage. These percentages reflect both actual Plymouth participation to date as well as the likelihood that future participation rates will tend to drift up as alternative sources of coverage become less common.

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 rate we developed for the spouses was 80%. 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. This level, 80%, is the maximum level of spousal participation in the retiree programs. This is the highest rate of spousal participation we have seen.

Data

The participant census data for the valuation study was supplied by the Plymouth Retirement Board, the Massachusetts Teachers Retirement System and the Town of Plymouth. Participants include Plymouth 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 Plymouth retiree census data are included in Section II.

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 Plymouth'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 Plymouth funds 100% of the ARC and begins with Plymouth's Fiscal Year 2012. The full schedule is shown in Section II. We have used a 30-year schedule for this exhibit since there has been no prior funding.

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 $20,246,008. Part of this comes from the amortization of the January 1, 2011 Unfunded Actuarial Accrued Liability of $246,697,647. Because there are no funds set aside, it is equal to the total actuarial accrued liability (AAL). 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. The thirty-year funding schedule shown produces the lowest possible initial fiscal year contribution under the GASB parameters. 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 $13,896,541. For the purposes of this schedule, we have not adjusted the January 1, 2011 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 $6,349,467.

Cash Flow Consideration

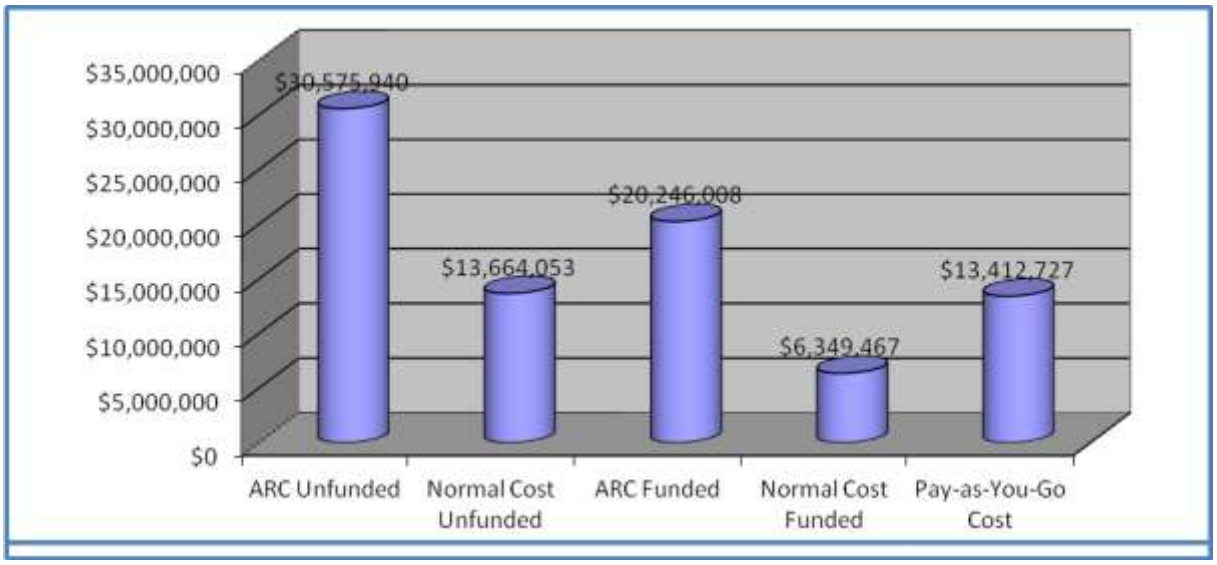
We have analyzed the cash flow of a funded post-employment medical trust by comparing the expected payouts of claims over the thirty-year period to expected contribution levels. If the actuarial assumptions are met, the funded amounts will be sufficient to cover annual benefit payments each year. Prior 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. Plymouth has elected, to date, to follow this course of action. While the Town has begun to think about the issue of funding it has yet to put together a plan to fund more than the pay-as-you-go cost.

In order to understand the impact of not funding versus funding completely, a comparison of the ARCs and normal costs (the contribution amount if the UAAL was $0) under both scenarios, and the pay-as-you-go amount is illustrated in 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 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 make 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 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 Plymouth 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 Plymouth to put its entire Actuarial Accrued Liability on its books immediately as a liability. Rather, a cost is applied to its net 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. Item three is not applicable to an entity such as Plymouth that has chosen not to fund its obligation either in whole or in part. The Net OPEB Cost is the OPEB Cost less these amounts. For year one, where there was no

prior NOO on the financial statement, the Net OPEB Cost was the same as the Net OPEB Obligation.

Starting with 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 the Annual Required Contribution (ARC) adjustment to prevent double counting the amortization 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 21 in the following discussion.

If Plymouth continues its current policy and contributes on a pay-as-you-go basis, without any prefunding, the unfunded actuarial accrued liability used in the calculation would be $390,817,988. We have not illustrated this with a "funding" schedule. The following chart illustrates the ARC, Pay-As-You-Go Cost, Annual OPEB Cost, and Net OPEB Obligation for the years 2008 through 2015 under the unfunded scenario. 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. Note that the rate used for interest is the 4.25% unfunded rate.

CALCULATION OF NET OPEB OBLIGATION

"Funding" Schedule at 4.25%

Fis Year	UAL	Normal Cost[1]	Amort.	ARC	Interest on NOO	ARC Adjust.	OPEB Cost	Total Contribs.[2]	Change in NOO	NOO
2008	$264,991,414	$10,553,931	$9,786,458	$20,340,389	NA	NA	$20,340,389	$8,697,045	$11,643,344	$11,643,344
2009	$266,689,179	$11,028,858	$10,153,450	$21,182,308	$0	$0	$21,182,308	$11,974,550	$9,207,758	$20,851,103
2010	$397,927,147	$15,517,890	$15,640,091	$31,157,981	$886,172	$819,530	$31,224,623	$14,146,885	$17,077,738	$37,928,840
2011	$416,572,073	$16,177,400	$16,920,147	$33,097,547	$1,611,976	$1,540,577	$33,168,945	$15,475,318	$17,693,627	$55,622,467
2012	$390,817,988	$13,664,053	$16,911,887	$30,575,940	$2,363,955	$2,406,954	$30,532,941	$13,412,727	$17,120,214	$72,742,681
2013	$407,977,746	$14,244,775	$18,275,951	$32,520,726	$3,091,564	$3,258,613	$32,353,677	$13,952,155	$18,401,522	$91,144,203
2014	$425,921,425	$14,850,178	$19,782,950	$34,633,128	$3,873,629	$4,233,413	$34,273,344	$15,013,524	$19,259,820	$110,404,023
2015	$444,175,155	$15,481,311	$21,428,175	$36,909,486	$4,692,171	$5,326,180	$36,275,477	$15,552,919	$20,722,558	$131,126,581

[1]Figures for 2008-2011 years from Plymouth Financial reports.
[2]For all years, Total Contributions are equal to the attributed premiums paid including the implicit subsidy.

Plymouth Financials for 2008 through 2011

In reviewing Plymouth's filed financial statements for 2008 through 2011 we found that they were in good order and that no adjustments needed to be made. Note that typically the 2011 financial statement would have used the results of the January 1, 2011 valuation, to satisfy the GASB 45 timing requirements. However, the prior valuation was used and the January 1, 2011 valuation results are expected to be used for Fiscal Years 2012 and 2013.

Implementation

According to the GASB Statement No. 45, its provisions would be effective for Plymouth fiscal years beginning after December 15, 2006. The timing is due to Plymouth being a "Tier 1" government under GASB 34. In the first fiscal year of adoption, and using the original valuation figures, Plymouth recorded a liability of $11,643,344 on its balance sheet. Plymouth's 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. For the second year, 2009, Plymouth recorded a liability of $20,851,103 on its balance sheet. Ultimately, the Town reported an NOO of $55,622,467 for the 2011 year. This report provides similar information for FY 2012 and beyond. For future years, a similar liability will need to be recorded. This liability would also reflect interest on any prior funding deficiencies. 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.

To be considered a funded system, the 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"). Therefore, for Plymouth to receive "credit" under the GASB accounting standard for assets set aside to pre-fund post-retirement benefits, they must be segregated in a trust or other account that is not subject to use for any other purpose by Plymouth.

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 Plymouth maintain a continuing group that is cognizant of the relevant financial and employee benefits issues raised by GASB Statement No. 45 that will provide leadership to the Town. 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. Plymouth 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 Plymouth 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 or amplify these 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.

Plymouth has indicated that, for the next plan year, it will be eliminating its master Medical Commercial Indemnity plan. Most likely, this will reduce cost as employees will be forced to opt for the lower cost Commercial Managed Care plans. However, it is also likely that the typical Master Medical participant is less healthy than the average participant in the Managed Care plans. Thus, the Town may see costs for these plans increase. So, the savings in costs on the Commercial Indemnity plans may be partly offset by higher rate increases on the Managed Care plans in the future.

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. Currently, retired Plymouth Town employees and their spouses pay either 1%, 10%, or 20% of the premium cost for their medical insurance depending upon the plan. These levels are lower than for the average Massachusetts municipal entity, particularly the 1% and 10%. The average level for municipal entities is about 25%. The lower end is in the 10%-15%. 50% is the maximum contribution that can be required under a plan. Contribution levels (like benefit 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. Plymouth's participation level of 95.0% for retirees is consistent with what we would expect for a plan with contributions of the sort the Town requires from its 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. Plymouth 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 Plymouth, the Town pays for medical benefits for those who reach ten years of service, even if they do not retire from the Town immediately upon separation from service. This will produce a higher liability and ARC for Plymouth than if only those retiring from the Town were covered.

In addition to reviewing the above items regularly, we recommend that the Town continue working toward an organized method of keeping 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) To the extent possible, make sure that all databases can be tied together by a single identifier, such as social security number or employee number. Some entities keep certain data by, for example, social security number, but organize other data on some other basis. This greatly increases the time and effort to tie all the relevant pieces of data together. This need is particularly acute when the records for those in the school system are not kept by Plymouth directly.

Subsequent Events

Since the valuation was performed, a number of events have occurred which will affect future measurements of the OPEB Liability. They are:

1) Numerous benefit changes including changes in copays and the addition of a deductible.
2) Elimination of the Master Medical Indemnity Plan.
3) The creation of an OPEB trust fund and some initial funding.

SECTION II

ACTUARIAL VALUATION DETAILS

Population Data

A. DISTRIBUTION BY AGE: RETIREES, BENEFICIARIES, VESTED TERMINEES, AND SURVIVORS (Includes retirees with life only or no coverage)

Age	Number[1]
0-19	0
20-24	0
25-29	0
30-34	0
35-39	2
40-44	8
45-49	12
50-54	26
55-59	130
60-64	324
65-69	363
70-74	231
75-79	148
80-84	88
85-89	54
90-94	32
95-99	5
100+	22
TOTAL	1445

[1] Includes retirees who are eligible for medical or with life coverage in addition to beneficiaries and survivors with medical coverage.

B. FUTURE RETIREES – ACTIVE PARTICIPANTS, CITY AND SCHOOL SYSTEM COMBINED

OF PARTICIPANTS*

Current Plan	Medicare Eligible	Not Medicare Eligible	Total
No Medical/ Unknown	88	3	91
Indemnity	24	7	31
Managed Care	1100	101	1201
TOTAL	1212	111	1323

* "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.

PLAN DEFINITION TABLE[1]

Name of Plan	Type of Plan	Ind Rate	Retirees Enrolled	Fam Rate	Retirees Enrolled	EE Cont %
Blue Choice	Commercial Managed Care	$601.00	111	$1,423.00	143	20.00%
Blue Care Elect	Commercial Managed Care	$653.00	36	$1,505.00	39	20.00%
Master Medical	Commercial Indemnity	$1,362.00	56	$3,051.00	48	20.00%
Medex	Medicare Indemnity	$386.40	719	NA	NA	20.00%
Carve Out	Medicare Indemnity	$443.00	128	NA	NA	20.00%
Managed Blue for Seniors	Medicare Managed Care	$477.27	89	NA	NA	20.00%
Dental Basic	Dental	$33.00	561	$69.00/$129.00	206/44	20.00%
Life	Life	$1.32	NA	NA	NA	10.61%

[1] **Rates at 1/1/2011 effective at 7/1/2010**

C. DISTRIBUTION BY AGE AND SERVICE: ACTIVE PARTICIPANTS

Age Group	0-4	5-9	10-15	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	1	0	0	0	0	0	0	0	0	**1**
20-24	18	0	0	0	0	0	0	0	0	**18**
25-29	92	11	0	0	0	0	0	0	0	**103**
30-34	69	42	8	0	0	0	0	0	0	**119**
35-39	75	35	47	4	0	0	0	0	0	**161**
40-44	71	50	39	23	4	0	0	0	0	**187**
45-49	49	34	40	26	33	3	0	0	0	**185**
50-54	18	25	51	32	28	21	5	0	0	**180**
55-59	24	25	36	40	56	20	31	7	0	**239**
60-64	14	12	12	18	30	13	2	4	0	**105**
65-69	2	5	3	3	8	1	2	0	0	**24**
70-74	0	0	0	0	0	1	0	0	0	**1**
75-79	0	0	0	0	0	0	0	0	0	**0**
80-84	0	0	0	0	0	0	0	0	0	**0**
85-89	0	0	0	0	0	0	0	0	0	**0**
90-94	0	0	0	0	0	0	0	0	0	**0**
95-99	0	0	0	0	0	0	0	0	0	**0**
100+	0	0	0	0	0	0	0	0	0	**0**
TOTAL	**433**	**239**	**236**	**146**	**159**	**59**	**40**	**11**	**0**	**1323**

SUMMARY OF RESULTS

Actives	
- Already in Medicare	0
- Pre-Medicare Coverage	1212
- Post-Medicare Coverage	111
Total	1323
Retired, Disabled, Survivors and Beneficiaries	1421
Terminated Vesteds	24

	At 7.50% discount	At 4.25% discount
Active Employees	$86,341,165	$164,130,290
Current Retirees	$160,356,482	$226,687,698
TOTAL	$246,697,647	$390,817,988
Unfunded Accrued Liability		
January 1, 2011	$246,697,647	$390,817,988
Normal (Service) Cost as of		
January 1, 2011	$6,349,467	$13,664,053

SUMMARY OF RESULTS
(continued)

	At 7.50% discount	At 4.25% discount
30-yr/26-yr amortization of UAAL	$13,896,541	$16,911,887
Normal Cost	$6,349,467	$13,664,053
TOTAL	$20,246,008	$30,575,940

Expected Claims

- Fiscal 2012 $13,412,727

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	$379,285	$379,285	0.00%	$90,445	419%
1/1/2011	$0	$390,817	$390,817	0.00%	$79,643	491%

Note: Covered payroll was provided by the Town of Plymouth and was not reviewed by Stone Consulting.

RESULTS BY ENTERPRISE FUND

Solid Waste (433)

Year	UAL	Normal Cost[1]	Amort.[1]	ARC	Interest on NOO[1]	ARC Adjust.[1]	OPEB Cost	Total Contribs.[1]	Change in NOO	NOO
2011	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	$156,146
2012	$832,963	$45,760	$36,045	$81,805	$6,636	$6,757	$81,684	$17,364	$64,320	$220,466
2013	$898,340	$47,705	$40,242	$87,947	$9,370	$9,876	$87,441	$22,945	$64,496	$284,962

Sewer (440)

Year	UAL	Normal Cost[1]	Amort.[1]	ARC	Interest on NOO[1]	ARC Adjust.[1]	OPEB Cost	Total Contribs.[1]	Change in NOO	NOO
2011	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	$201,704
2012	$1,449,863	$53,846	$62,740	$116,586	$8,572	$8,728	$116,431	$44,391	$72,039	$273,743
2013	$1,522,293	$56,135	$68,193	$124,328	$11,634	$12,263	$123,700	$58,660	$65,040	$338,783

RESULTS BY ENTERPRISE FUND (Continued)

Water (450)

Year	UAL	Normal Cost[1]	Amort.[1]	ARC	Interest on NOO[1]	ARC Adjust.[1]	OPEB Cost	Total Contribs.[1]	Change in NOO	NOO
2011	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	$630,169
2012	$4,733,515	$177,034	$204,834	$381,867	$26,782	$27,269	$381,380	$145,639	$235,741	$865,910
2013	$4,970,545	$184,558	$222,663	$407,220	$36,801	$38,790	$405,232	$192,453	$212,779	$1,078,690

Airport (482)

Year	UAL	Normal Cost[1]	Amort.[1]	ARC	Interest on NOO[1]	ARC Adjust.[1]	OPEB Cost	Total Contribs.[1]	Change in NOO	NOO
2011	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	$265,972
2012	$1,528,779	$69,079	$66,155	$135,234	$11,304	$11,509	$135,028	$45,333	$89,695	$355,667
2013	$1,619,480	$72,014	$72,547	$144,561	$15,116	$15,933	$143,745	$59,905	$83,840	$439,507

RESULTS BY ENTERPRISE FUND (Continued)

All Other

Year	UAL	Normal Cost[1]	Amort.[1]	ARC	Interest on NOO[1]	ARC Adjust.[1]	OPEB Cost	Total Contribs.[1]	Change in NOO	NOO
2011	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	NA[(1)]	$54,368,476
2012	$382,272,868	$13,318,334	$16,542,113	$29,860,448	$2,310,660	$2,352,690	$29,818,418	$13,160,000	$16,658,418	$71,026,894
2013	$398,967,089	$13,884,363	$17,872,306	$31,756,669	$3,018,643	$3,181,752	$31,593,560	$13,618,192	$17,975,368	$89,002,262

(1) Details for the 2011 were not available. NOOs were calculated by Plymouth's accountants, not Stone Consulting. No calculation of the other figures was made.

Thirty-Year Funding Schedule at 7.50%

Fiscal Year	Normal Cost[1]	Amortization[2]	Contribution	Year-End AAL	Projected Annual Benefit Cost[3]
2012	6,349,467	13,896,541	20,246,008	250,261,189	12,631,873
2013	6,825,677	14,348,179	21,173,856	253,606,486	13,141,729
2014	7,337,603	14,814,495	22,152,097	256,701,390	14,144,865
2015	7,887,923	15,295,966	23,183,889	259,510,831	14,627,003
2016	8,479,517	15,793,085	24,272,602	261,996,578	15,093,001
2017	9,115,481	16,306,360	25,421,841	264,116,984	15,714,512
2018	9,799,142	16,836,317	26,635,459	265,826,718	15,983,804
2019	10,534,078	17,383,497	27,917,575	267,076,463	15,815,970
2020	11,324,134	17,948,460	29,272,594	267,812,602	16,188,907
2021	12,173,444	18,531,785	30,705,229	267,976,878	16,565,133
2022	13,086,452	19,134,068	32,220,520	267,506,020	16,860,241
2023	14,067,936	19,755,926	33,823,861	266,331,352	17,157,931
2024	15,123,031	20,397,993	35,521,024	264,378,360	17,530,655
2025	16,257,258	21,060,928	37,318,186	261,566,240	18,080,619
2026	17,476,553	21,745,408	39,221,961	257,807,394	18,540,712
2027	18,787,294	22,452,134	41,239,428	253,006,904	19,034,748
2028	20,196,341	23,181,828	43,378,170	247,061,957	19,517,801
2029	21,711,067	23,935,238	45,646,305	239,861,223	19,877,745
2030	23,339,397	24,713,133	48,052,530	231,284,197	20,361,883
2031	25,089,852	25,516,310	50,606,161	221,200,478	20,807,468
2032	26,971,590	26,345,590	53,317,180	209,469,005	20,916,949
2033	28,994,460	27,201,822	56,196,281	195,937,222	21,079,287
2034	31,169,044	28,085,881	59,254,925	180,440,192	21,208,716
2035	33,506,722	28,998,672	62,505,394	162,799,634	21,189,733
2036	36,019,727	29,941,129	65,960,855	142,822,893	21,129,458
2037	38,721,206	30,914,215	69,635,422	120,301,829	21,065,693
2038	41,625,297	31,918,927	73,544,224	95,011,619	20,814,349
2039	44,747,194	32,956,293	77,703,486	66,709,476	20,537,755
2040	48,103,233	34,027,372	82,130,605	35,133,262	20,227,039
2041	51,710,976	35,133,262	86,844,238	0	19,773,323

[1]Assumes 7.50% annual increase in normal cost and a static group of actives

[2]Asssumes 3.25% annual increase in amortization payment

[3]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. The base scenario uses the unfunded discount rate of 4.25%.

As of January 1, 2011	Health Care Cost Trend Rates		
	As Reported (4.25%)	+1% Each Year	-1% Each Year
Liability for:			
• Future Retirees	$164,130,290	$206,220,972	$132,475,627
• Current Retirees, Beneficiaries, and Survivors	$226,687,698	$256,270,128	$202,110,713
Total AAL	$390,817,988	$462,491,100	$334,586,340
Normal Cost	$13,664,053	$17,922,422	$10,585,161
Annual Required Contribution for Fiscal Year 2012:	$30,575,940	$37,935,823	$25,063,733

The cumulative effect of a 1% increase in health care cost trend increases the AAL by approximately 18%, the normal cost by 31%, and the ARC by 24%. A 1% decrease in trend

would decrease the AAL by 14%, the normal cost by 23% 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 3.75% and 4.75%. The following table shows the results we obtained:

As of January 1, 2011	Discount Rates		
	As Reported (4.25%)	Plus 0.50% (4.75%)	Minus 0.50% (3.75%)
Liability for:			
• Future Retirees	$164,130,290	$146,974,669	$184,149,410
• Current Retirees, Beneficiaries, and Survivors	$226,687,698	$213,404,313	$240,925,768
Total AAL	$390,817,988	$360,378,982	$425,075,178
Normal Cost	$13,664,053	$11,981,872	$15,666,596
Annual Required Contribution for Fiscal Year 2012:	$30,575,940	$28,484,295	$33,021,928

Thus, the cumulative effect of a 0.50% decrease in the discount rate is to increase the AAL by approximately 9%, the normal cost by 15%, and the ARC by 8%. A 0.50% increase in the discount rate would decrease the AAL by 8%, the normal cost by 12% and the ARC by 7%. It is prudent, and GASB Statement No. 45 requires, an updated actuarial valuation be performed periodically. For an entity of Plymouth'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 funded program. 4.25% per year net of investment expenses for an unfunded program (at client's direction)
3.	Amortization Method	Closed twenty-seven year amortization (remainder of initial thirty-year amortization). Uses level percentage of payroll (using a 3.25% annual rate of increase) for unfunded plan.
4.	Asset Valuation Method	Not applicable, since there are no assets.
5.	Mortality	Actives: The RP-2000 Mortality Tables (Sex-distinct) for Employees projected 11 years. Retirees: The RP-2000 Mortality Tables (Sex-distinct) for Healthy Annuitants projected 11 years. Disabled: The RP-2000 Mortality Tables (Sex-distinct) for Healthy Annuitants projected 11 years and set forward 2 years No additional mortality projection is assumed.

Actuarial Methods and Assumptions
(Continued)

6a. Withdrawal Prior to Retirement (all except teachers)

The rates shown at the following sample ages illustrate the withdrawal assumption:

Rate of Withdrawal

Age	*Groups 1 and 2*	*Group 4*
20	37.51%	3.15%
25	28.23%	2.85%
30	17.35%	2.48%
35	10.07%	1.88%
40	7.21%	0.84%
45	5.68%	0.06%
50	4.57%	0.00%
55	0.00%	0.00%
60	0.00%	0.00%

6b. Withdrawal Prior to Retirement for Teachers

	Service:	0	5	10
	Age			
Male Teachers	25	12.00%	4.50%	1.00%
	35	11.00	5.00	1.50
	45	9.50	5.00	2.00
	55	7.50	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	10 years of Service; assumed that individuals who withdraw prior to age 40 will elect a return of pension contributions and therefore be ineligible for retiree medical coverage

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 50% ordinary and 50% accidental for Group 1 and 10% ordinary and 90% accidental for Group 4 and 55% ordinary and 45% accidental for Teachers.

	Rate of Disability		
Age	***Groups 1 and 2***	***Group 4***	***Teachers***
20	0.03%	.10%	0.004%
25	0.04	.12	0.005
30	0.06	.18	0.006
35	0.08	.26	0.006
40	0.12	.38	0.010
45	0.18	.58	0.030
50	0.31	.98	0.050
55	0.50	1.60	0.080
60	0.61	2.00	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

Age	*Group 1 and 2 Male*	*Group 1 and 2 Female*	*Group 4*
50	0.00%	0.00%	2.00%
51	0.00%	0.00%	2.00%
52	0.00%	0.00%	2.00%
53	0.00%	0.00%	2.00%
54	0.00%	0.00%	2.00%
55	10.00%	10.00%	5.00%
56	3.00%	3.00%	5.00%
57	3.00%	3.00%	5.00%
58	3.00%	3.00%	5.00%
59	5.00%	5.00%	5.00%
60	5.00%	5.00%	10.00%
61	5.00%	5.00%	10.00%
62	10.00%	10.00%	20.00%
63	10.00%	10.00%	20.00%
64	10.00%	10.00%	20.00%
65	50.00%	50.00%	100.00%
66	35.00%	35.00%	NA
67	35.00%	35.00%	NA
68	35.00%	35.00%	NA
69	35.00%	35.00%	NA
70	100.00%	100.00%	NA

Actuarial Methods and Assumptions
(Continued)

9b. Rates of Retirement: Teachers

Male Teachers			
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)

Female Teachers			
Service: Age	<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[1]	Indemnity Commercial Individual	Indemnity Commercial Blended[1]	Managed Care Medicare	Indemnity Medicare
55	$8,145.96	$14,504.85	$13,207.68	$22,372.68	$3,632.52	$2,548.66
60	$9,721.67	$17,310.59	$15,762.51	$26,700.34	$4,335.17	$3,041.66
65	$11,942.07	$17,874.38	$19,362.62	$27,912.79	$5,325.31	$3,736.36
70	$13,844.13	$20,721.30	$22,446.58	$32,358.58	$6,173.50	$4,331.47
75	$15,663.37	$23,444.25	$25,396.25	$36,610.76	$6,984.75	$4,900.66
80	$17,293.62	$25,884.35	$28,039.51	$40,421.24	$7,711.72	$5,410.72
85	$18,175.77	$27,204.71	$29,469.80	$42,483.13	$8,105.10	$5,686.72

(1) Blended rates below 65 are 55% Family and 45% Individual. Blended rates 65 and higher are 35% Family and 65% Individual. Individual rates are used for all participants 81 and higher.

Actuarial Methods and Assumptions
(Continued)

11. Trend Rates By Plan[1]

Year	Commercial Managed Care	Commercial Indemnity	Medicare Indemnity	Medicare Managed Care	Dental
2011	0.00%	0.00%	0.00%	7.80%	0.00%
2012	9.00%	10.00%	9.00%	8.00%	9.00%
2013	8.50%	9.50%	8.50%	7.50%	8.50%
2014	8.00%	9.00%	8.00%	7.00%	8.00%
2015	7.50%	8.50%	7.50%	6.50%	7.50%
2016	7.00%	8.00%	7.00%	6.00%	7.00%
2017	6.50%	7.50%	6.50%	5.50%	6.50%
2018	6.00%	7.00%	6.00%	5.00%	6.00%
2019	5.50%	6.50%	6.00%	5.00%	5.50%
2020+	5.00%	6.00%	6.00%	5.00%	5.00%

[1] Trend rates for 2011 based on actual rate changes for 2011. All other trend rates based on Stone Consulting Assumptions.

Actuarial Methods and Assumptions
(Continued)

12.	Medicare Eligibility	Employees: 100% if hired March 31, 1986 or after; 85% if hired pre-March 31, 1986 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: 95.0% of the active Town employees eligible for post-employment medical benefits are assumed to elect Medical Coverage immediately upon retirement. 60% of the active employees eligible for post-employment medical benefits are assumed to elect Life Insurance coverage immediately upon retirement. 75% of the active employees eligible for post-employment medical benefits are assumed to elect Dental 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%, 80% are assumed to participate. Participants with no or unknown current coverage (e.g. active employees and/or vested inactives who do not currently participate in Plymouth'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.
14.	Expenses	Administrative expenses are included in the per capita medical cost assumption.

Actuarial Methods and Assumptions
(Continued)

15. Plan Enrollment Rates	These are the rates are which retirees select medical plans, given that they enroll in a medical plan. The selection patterns follow the table below.
16. Projections	The January 1, 2011 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.
17. Teachers	Members of the Massachusetts State Teachers Retirement System are sometimes referred to as "teachers".
18. Valuation Date	January 1, 2011

Principal Plan Provisions Recognized in Valuation

1.	Eligibility for Benefits	Current retirees, beneficiaries and spouses of Plymouth are eligible for medical benefits. Current employees or spouses who retiree with a benefit from the Plymouth. Survivors of Plymouth employees and retirees are also eligible for medical benefits.
2.	Medical Benefits	Various medical plans offered by Plymouth to its own employees.
3.	Life Insurance	Plymouth retirees are eligible for a $1,000 life insurance benefit offered by Plymouth. Retirees pay approximately 10% of the cost or $0.14 per month for their coverage.
4.	Retiree Contributions	Based on data provided by Plymouth.

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.

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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