

# Other Post Employment Benefits

## INTRODUCTION

The Governmental Accounting Standards Board (GASB) establishes generally accepted accounting principles (GAAP) for public institutions, including school systems. These are the rules used by independent auditors as they attest to the fair presentation of our annual financial statements. Statements 43 and 45 relate to the financial presentation of other post employment benefits (OPEB). The main thrust of GASB Statement No. 45 is to require for the first time that public sector employers recognize the cost of other post employment benefits (OPEB) over the active service life of their employees rather than on a pay-as-you-go basis. In simple terms:

An employee earns retiree health care and other benefits while working and the employer should accrue that cost while the employee is working (similar to pension). If the employer has not established a fund for the future benefits, the employer has a liability. An actuarial valuation is required to determine the future liability. The future liability or plan includes the cost of benefits (health, dental and life premiums) plus expenses less a projected return on investment. An actuarial valuation is an estimate of the cost of the plan. Information needed to complete the actuarial valuation is current demographics and benefit costs, an estimate of future retirees (and dependents), demographic assumptions, an estimate of future benefit costs, and trends of current costs and claims. The end result would be to discount the future costs to the valuation date using a discount rate determined by whether the Plan is funded or not funded.

## OTHER POST EMPLOYMENT BENEFITS – HARFORD COUNTY PUBLIC SCHOOLS

Other post employment benefits are health, dental, and life insurance benefits paid by HCPS on behalf of retirees. In general 90% of the cost is paid by HCPS when an employee retires with ten years of continuous service. An exception applies to active employees and retirees enrolled in the traditional health plan in which case HCPS pays 80% of the cost. The benefits may be different for other organizations. GASB requires that the cost of OPEB be matched to the period in which the benefits are earned, just as we are required to do for pension costs. This means that future benefits costs for active employees upon retirement must be accrued and reported along with those costs for retirees.

To determine the amount that must be reported, we are required to employ actuarial services. In 2005 we retained the services of a benefits consulting company to perform actuarial services for HCPS in order to determine the size of the financial issue we would face.

A report was issued in September 2005 and updated in June 2007. Prior to completion of the 2007 Actuarial Report, the Board completed some changes to the enrollment for health and dental insurance plans.

The first change established a tiered eligibility system for enrollment.

1. Effective for employees hired after July 1, 2006, a tiered eligibility for retiree OPEB was established as follows:

Years of continuous service upon retirement	Benefit paid compared to active employees
Ten	One-third
Twenty	Two-thirds
Thirty or more	Full benefit

2. Until such time as legislative authority to invest OPEB trust funds in a manner consistent with pension trust funds and/or an ability to pool trust funds is granted, HCPS will hold, as designated for OPEB, monies from Medicaid Part D reimbursements and excess rate stabilization amounts in the Harford County Health Care Consortium.

## Other Post Employment Benefits

On October 23, 2006 the Board approved additional changes for enrollment.

1. Eliminate open enrollment for retirees and require they make a one-time health plan selection upon retirement and only permit "life style changes" subsequent to this selection for retirees enrolled in a HCPS health plan. Current retirees were identified and a special open enrollment was held for them in April, 2007 so that they could make a one-time decision as well.
2. Implement a tiered rate structure to eliminate the "hidden subsidy" effective July 1, 2007. Revised rate charts were issued prior to July 1, 2007.

The published insurance rates (for persons prior to Medicare eligibility) have historically been based primarily on the healthcare usage of active employees. Since retirees use health care at a rate much higher than the active employees, using blended rates created a hidden subsidy for the retiree group. Beginning with FY 2008, the published rates for retirees were based solely on retiree healthcare usage, effectively eliminating the hidden subsidy.

In addition, on December 17, 2007 the board approved the following:

1. The Superintendent is authorized to create the Harford County Public Schools OPEB Trust Fund and to participate in the MABE<sup>1</sup> OPEB Investment Trust upon its creation.
2. The Superintendent is authorized to execute any legal documents pertaining to the establishment and participation of the aforementioned Trusts.
3. Monies in excess of funding requirements in the Harford County Health Care Consortium Rate Stabilization accounts, Medicare Part D reimbursements, and unspent funds from the Harford County Public Schools flexible spending plan are to be transferred to the MABE OPEB Investment Trust as they become available and will be designated for this purpose in the future.

### The Actuarial Report

The actuarial report was updated for FY 2011 and is reflected in the following pages.

### **Actuarial Certification**

*The following sets forth GASB 45 Annual Expense for Harford County Public Schools for the fiscal years ending June 30, 2013 and June 30, 2014. The appendices of the report provide fiscal year ending June 30, 2010 results, based on the prior valuation, and information for the School's CAFR disclosure.*

*The report is based on December 1, 2011 census data, which is less than 24 months before the first day of fiscal year 2011. Accordingly, provided that there are no significant changes in plan design or employee demographics, these results could be relied upon to comply with GASB 45 in FYE 2011 and FYE 2012.*

*The report set forth information that will be required in accordance with the Governmental Accounting Standards Board No. 45.*

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<sup>1</sup> MABE is the Maryland Association of Boards of Education

## Other Post Employment Benefits

*These values have been computed in accordance with generally accepted actuarial principles and practices. The various actuarial assumptions and methods are, in our opinion, appropriate for the purposes of this report.*

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In preparing the valuation we relied on demographic and claims data provided by Harford County Public Schools. We reviewed the data for reasonableness, but did not audit the data. The actuarial methods and assumptions used in this report comply with GASB 45 and the actuarial standards of practice promulgated by the American Academy of Actuaries.

The healthcare cost trend rate selected is consistent with prevalent practices. As discussed above, increases of this magnitude cannot be sustained indefinitely. Accordingly, standard actuarial practice (and GASB 43 Paragraph 34.g.) is to assume an "ultimate trend" which is consistent with the best estimate of GNP growth. However, the number of years until the ultimate trend is attained and the rate of decrease are not known. There is a significant probability that between now and the next actuarial valuation we will not observe the anticipated amelioration of medical trend. If this is the case, the typical practice is to reset the initial trend and to defer the year that the ultimate trend rate is attained. If this occurs annual actuarial losses of 5% to 15% of liabilities due to the revised trend rate can be expected.

# Other Post Employment Benefits

## 1. Executive Summary

### Background

In June 2004 the Government Accounting Standards Board (GASB) released Statement 45 which revised the GAAP accounting standards for post employment benefits other than pensions (OPEB). This standard will be applied to post employment medical benefits that are provided to Harford County Public School retirees. Prior to the new standard these benefits were accounted for on a pay as you go basis. The new standard requires that these benefits be accounted for on an accrual basis.

The previous report prepared for FYE 2011 and FYE 2012 was completed on October 29, 2010. The expense for FYE 2012 has been recalculated with the new trust assets at July 1, 2011 and the expected FYE 2012 contribution of \$7,064,886 and is provided in the Appendix.

### OPEB Trust Arrangement

The Schools have established an OPEB trust through the Maryland Association of Board's of Education (MABE). The trust value at July 1, 2011 is \$15,255,626.

### Discount Rate Assumption

The discount rate used to determine the liabilities under GASB 45 depends upon the Schools' funding policy. Government entities that contribute an amount at least equal to the GASB 45 annual required contribution (ARC) to a trust that can only be used to pay other post-retirement benefits, discount liabilities based on the expected long-term rate of return of the Trust.

The discount rate assumption for disclosure purposes only is determined in Section 2 of the report and is 4.25% for FYE 2013 and FYE 2014. This rate is a partially funded discount rate. The funding level was determined based on expected plan contributions of \$2,000,000 for FYE 2013 and FYE 2014. If Harford County Public Schools decides to fund the plan differently, the expense will need to be restated.

### The Net OPEB Obligation (NOO)

The NOO is the cumulative difference between the School's OPEB expense and cash payments made for OPEB expenditures and is a liability in the School's Statement of Net Financial Position. As of June 30, 2011 the NOO was \$109,940,815. We estimate that this amount will increase to over \$200 million by June 30, 2014. This amount is a debit on the Schools' statement of Net Financial Position in the CAFR.

### The Annual OPEB Cost (AOC)

The annual cost of OPEB benefits under GASB 45 is called the annual OPEB cost or AOC. These amounts are for disclosure purposes only. The AOC is equal to the Annual Required Contribution (ARC) plus interest on the NOO minus the NOO divided by the amortization factor. Harford County Public School's AOC for FYE 2013 and FYE 2014 is shown in Section 3. The AOC is \$55,980,000 for FYE 2013 and \$59,165,000 for FYE 2014.

### Comparison With Previous Valuation

The prior valuation was based on July 1, 2010 data and completed October 29, 2010. The expense has increased from \$46,036,000 to \$55,980,000. Increases due to the passage of time, updated State of Maryland Assumptions, and updated claims were offset by favorable plan experience and updating the plan's trend. There was also an increase due to updating the plan's mortality table to include future mortality improvement as required by ASOP 35 and lowering the discount rate to 4.25%.

## Other Post Employment Benefits

### 2. Executive Summary (cont.)

The following table compares the data and reconciles the expense.

Comparison of Current and Previous Valuations		
	July 1, 2010	December 1, 2011
<b>Demographic Data</b>		
Employees With Medical Coverage	4,693	4,559
Retirees Less Than Age 65	602	605
Retirees Age 65 or Greater	1,222	1,402
<b>Reconciliation of Expense (AOC)</b>		
FYE 2011 Expense		\$46,036,000
Increase (Decrease) due to other Demographic Data		(\$1,961,000)
Expected Increase (due to passage of time)		\$5,335,000
Increase (Decrease) due to Baseline Claims		\$328,000
Increase (Decrease) due to Assumption Changes		\$1,144,000
Increase (Decrease) due to Changes in Trend		(\$2,106,000)
Increase (Decrease) due to Changes in Mortality Table		\$5,218,000
Increase (Decrease) due to Lowering the Discount Rate		\$1,986,000
FYE 2013 Expense		\$55,980,000

#### Plan Provisions

Retirees can continue the same medical and dental coverage they had (including family coverage) as active employees. For employees hired prior to July 1, 2006, a subsidy of 85% or 90% for Pre-Medicare retirees is provided based on the plan chosen. A 90% subsidy is provided to Medicare eligible retirees and for dental coverage. The subsidy is also provided for dependent coverage. However, no subsidy is provided to surviving spouses. Life Insurance is also provided and partially paid for by the retiree.

For employees hired after July 1, 2006 the subsidy level depends upon service at retirement. See section 4 for details.

#### Demographic Data

Demographic data as of December 1, 2011 was provided to us by Harford County Public Schools. This data included current medical coverage for current employees and retirees.

Because the census data is less than 24 months before the first day of fiscal year 2013, it can be relied on to comply with GASB 45 for FYE 2013 and FYE 2014.

Although we have not audited this data we have no reason to believe that it is inaccurate.

#### Claims Data

Monthly paid claims, administrative expense and enrollment reports for retirees (only) for the year ending June 30, 2011 were supplied by the providers. Claims were divided into pre and post 65 age retirees.

Although we have not audited the claims data we have no reason to believe that it is inaccurate.

# Other Post Employment Benefits

## 3. Executive Summary (cont.)

### Demographic Assumptions

Demographic assumptions mirror those used for the pension plan, with adjustments made for actual experience of County employees. All employees are assumed to participate in the Maryland State Retirement System.

Section 6 details the assumptions for electing coverage. These assumptions have been changed since the last valuation.

### Economic Assumptions

The discount rate assumption is tied to the return expected on the funds used to pay these OPEB benefits. The discount assumption will be materially tied to the decision of whether or not to pre-fund these benefits. The AOC for FYE 2013 and FYE 2014 is determined using a partially funded discount rate of 4.25%. This rate is a weighted average of a 4.0% unfunded rate, which is a long term estimate of general funds investment return, and a funded investment rate of 7.0%.

The medical trend assumption was developed using the Society of Actuaries (SOA) Long-Run Medical Cost Trend Model baseline assumptions. The SOA Model was released in April 2010. The following assumptions were used as input variables into this model:

Rate of Inflation	2.9%
Rate of Growth in Real Income / GDP per capita	0.9%
Income Multiplier for Health Spending	1.4
Extra Trend due to Technology and other factors	1.2%
Health Share of GDP Resistance Point	25.0%
Year for Limiting Cost Growth to GDP Growth	2075

The SOA baseline assumption of real income growth of 1.9% was reduced to .9% to be consistent with the payroll growth assumption.

The SOA Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical U.S. medical expenditures and the judgments of experts in the field. The long-run baseline projection and input variables have been developed under the guidance of an SOA Project Oversight Group.

Payroll is assumed to increase at 3.0% per annum. This assumption is used to determine the level percentage of payroll amortization factor.

### Actuarial Certification

In preparing the valuation we relied on demographic and claims data provided by Harford County Public Schools. We reviewed the data for reasonableness, but did not audit the data. The actuarial methods and assumptions used in this report comply with GASB 45 and the actuarial standards of practice promulgated by the American Academy of Actuaries.

The healthcare cost trend rate selected is consistent with prevalent practices. As discussed above, increases of this magnitude cannot be sustained indefinitely. Accordingly, standard actuarial practice (and GASB 43 Paragraph 34.g.) is to assume an "ultimate trend" which is consistent with the best estimate of GNP growth. However, the number of years until the ultimate trend is attained and the rate of decrease are not known. There is a significant probability that between now and the next actuarial valuation we will not observe the anticipated amelioration of medical trend. If this is the case, the typical practice is to reset the initial trend and to defer the year that the ultimate trend rate is attained.

## Other Post Employment Benefits

### 4. Executive Summary (cont.)

If this occurs annual actuarial losses of 5% to 15% of liabilities due to the revised trend rate can be expected.

Kevin Binder is a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

### 2. Funding Target and Cash Contribution for FYE 2013 and FYE 2014

Below is a summary of the calculation of the Funding Target and the School's Cash Contribution under the funding policy. The funding policy is determined using the fully funded discount rate of 7.00%.

	FYE 2013 07/01/2012	FYE 2014 07/01/2013
1) Actuarial Accrued Liability		
a. Actives	201,226,000	212,883,000
b. Retirees in Pay Status	226,588,000	239,714,000
c. Total	427,814,000	452,597,000
2) Assets	23,541,000	27,189,000
3) Amortization of Unfunded Accrued Liability		
a. Unfunded Accrued Liability	404,273,000	425,408,000
b. Amortization Period	26	25
c. Amortization Factor (Rounded)	15.72	15.36
d. Amortization Amount	25,723,000	27,704,000
4) Gross Funding Target		
a. Normal Cost	14,095,000	14,631,000
b. Amortization of Unfunded Accrued Liability	25,723,000	27,704,000
c. Total Funding Target	39,818,000	42,335,000
5) Trust Contribution		
a. Funding Target	39,818,000	42,335,000
b. Less Expected Pay-Go Benefits	18,608,000	19,945,000
c. Net Funding Target [a – b]	21,210,000	22,390,000
d. Expected Contribution (As provided by HCPS)	2,000,000	2,000,000
e. Percent Funded [c / d]	9.43%	8.93%
f. Discount Rate* [(1 – (e)) x 4.00%] + [(e) x 7.00%]	4.25%	4.25%

\* Rounded to nearest quarter percent

## Other Post Employment Benefits

### 3. Plan Expense

#### Expense

Below is a summary of the calculation of the Plan's Expense under the current provisions for the year ending June 30, 2013 and June 30, 2014. The amount's are calculated as of the end of the year and assume the plan deposits \$2,000,000 to the trust in both FYE 2013 and FYE 2014.

	07/0/2012 Partially Funded	07/01/2013 Partially Funded
(1) Interest Rate	4.25%	4.25%
(2) Actuarial Accrued Liability		
(a) Actives	359,121,000	378,667,000
(b) Retirees in Pay Status	<u>301,812,000</u>	<u>318,238,000</u>
(c) Total	660,933,000	696,905,000
(3) Assets	23,541,000	27,189,000
(4) Amortization of Unfunded Accrued Liability		
(a) Unfunded Accrued Liability	637,392,000	669,716,000
(b) Amortization Period	26	25
(c) Amortization Factor (Rounded)	21.54	20.83
(d) Amortization Amount	29,595,000	32,155,000
(5) Annual Required Contribution of Employer (ARC)		
(a) Normal Cost	26,886,000	27,908,000
(b) Amortization of Unfunded Accrued Liability	29,595,000	32,155,000
(c) Total ARC	<u>56,481,000</u>	<u>60,063,000</u>
(6) Annual OPEB Cost (AOC)		
(a) ARC	56,481,000	60,063,000
(b) Less Amortization of NOO	5,916,000	7,816,000
(c) Plus Interest on NOO	5,415,000	6,918,000
(d) Total Cost	<u>55,980,000</u>	<u>59,165,000</u>
(7) 1% Sensitivity (ARC)	70,893,000	76,018,000
(8) Net OPEB Obligation (NOO)		
(a) Beginning of Year NOO	127,410,929	162,782,929
(b) Current AOC	55,980,000	59,165,000
(a) Expected Cash Payment to Retirees	18,608,000	19,945,000
(d) Trust Contribution	2,000,000	2,000,000
(e) Projected End of Year NOO (a + b- c- d)	<u>162,782,929</u>	<u>200,002,929</u>



# Other Post Employment Benefits

## 4. Summary of Principal Plan Provisions

The following summary describes principal plan provisions assumed in calculating the cost of your plan.

### General Eligibility Rules

Eligible participants are assumed to be employees, former employees, and beneficiaries of Harford County Public Schools who had health coverage as an active employee.

Maryland State Teachers' Pension System retirement eligibility is as follows:

- age 62 with 5 years of service
- age 63 with 4 years of service
- age 64 with 3 years of service
- age 65 with 2 years of service
- 30 years of service regardless of age
- age 55 with 15 years of service

Disabled participants must meet the eligibility requirements stated above.

Surviving Spouses can stay in the plan, but must pay the full cost to participate.

### Underlying Plan Description

Pre-Medicare Retirees have the option of choosing between three medical plans (PPO Plus, PPO Core or Blue Choice) all of which are packaged with a prescription drug program. Post-Medicare Retirees have two plan options both of which are packaged with a prescription drug program.

### Retiree Contribution

Participants with less than 10 years of service receive no subsidy from Harford County Public Schools. Participants with 10 or more years of service receive an employer subsidy detailed below:

	PPO Plus	PPO Core	Blue Choice	Dental
<b>Under Medicare Age</b>	85%	90%	90%	90%
<b>Over Medicare Age</b>	90%	90%	90%	90%

The subsidy also applies to dependent coverage.

Harford County Public Schools also subsidizes the cost of Life Insurance Coverage. Retirees pay \$0.024 per month per \$1,000 of coverage per month.

## Other Post Employment Benefits

### 4. Summary of Principal Plan Provisions (cont.)

#### Retiree Contribution (cont.)

##### Life Insurance

At retirement, retirees receive \$20,000 of Life Insurance coverage. This amount decreases by \$2,000 each July 1 to a floor of \$10,000. Retirees pay \$0.024 per month per \$1,000 of coverage per month.

For employees hired after July 1, 2006 the medical and dental subsidy will depend upon years of service at retirement as summarized in the following table. In addition, the cost for life insurance will vary by years of service at retirement.

Years of Service At Retirement	Subsidy	Cost per \$1,000 of Life Insurance
0 – 10	0%	--
10 – 19	30%	16.8¢
20 – 29	60%	9.6¢
30 +	90%	2.4¢

### 5. Valuation Data

#### Counts

The following table summarizes the counts, ages and, coverage as of 12/1/2011, for those currently enrolled in Medical/Drug coverage.

(1) Number of Participants	
(a) Active Employees	4,559
(b) Retirees (Pre-Medicare)	605
(c) Retirees (Post-Medicare)	1,402
(2) Active Statistics	
(a) Average Age	44.47
(b) Average Service	11.33
(3) Inactive Statistics (In Pay Status)	
(a) Average Age – Pre-Medicare	60.81
(b) Average Age – Medicare	72.95

## Other Post Employment Benefits

### 5. Valuation Data (cont.)

#### Active Age - Service Distribution

Shown below is the distribution of active participants with medical coverage based on age and service as of the valuation date.

Age	Years of Service as of 12/01/2011								Total
	Under 1	01-04	05-09	10-14	15-19	20-24	25-29	30+	
Under 25	45	77	1	0	0	0	0	0	123
25 - 29	44	338	148	1	0	0	0	0	531
30 - 34	18	135	317	86	0	0	0	0	556
35 - 39	10	84	131	206	55	0	0	0	486
40 - 44	18	110	128	106	154	37	0	0	553
45 - 49	14	88	128	99	89	84	31	1	534
50 - 54	9	80	135	151	110	65	62	31	643
55 - 59	8	53	82	116	127	73	39	96	594
60 - 64	1	18	66	55	58	67	40	88	393
65 +	2	19	30	25	14	16	9	31	146
Totals	169	1,002	1,166	845	607	342	181	247	4,559

The following table shows averages in total for Active participants in this valuation.

Averages	Amount
Age:	44.47
Service:	11.33

# Other Post Employment Benefits

## 6. Valuation Methods and Assumptions

### Cost Method

This valuation uses the Projected Unit Credit method with linear pro-ratio to assumed benefit commencement.

### Amortization

The unfunded liability was amortized over a closed period of 27 years using level percentage of pay for FYE 2012.

The unfunded liability was amortized over a closed period of 26 years using level percentage of pay for FYE 2013.

The unfunded liability was amortized over a closed period of 25 years using level percentage of pay for FYE 2014.

### Coverage Status and Age of Spouse

Actual coverage status is used; females assumed 3 years younger than male spouse.

Employees with family coverage are assumed to continue family coverage in retirement.

Employees with individual coverage are assumed to elect individual coverage in retirement.

Employees currently waiving coverage are assumed to continue to waive coverage in retirement.

### Assets

Assets are valued using market value of assets. The trust is assumed to earn 7.00% interest and contributions are assumed to be made in the middle of the year.

### Election Percentage

Participants are assumed to elect coverage based on service as described below:

<u>Service</u>	<u>Election Rate</u>
4 or less	N/A
5 - 9	5%
10 or more	95%

# Other Post Employment Benefits

## 6. Valuation Methods and Assumptions (cont.)

### Interest Assumptions

Funded Discount Rate		7.00%
Partially Funded Discount Rate	4.25%	
Unfunded Discount Rate	4.00%	
Payroll Growth		3.00%

### Trend Assumptions

Medical and Prescription Drug	Base	Sensitivity
2011	7.00%	8.00%
2012	6.50%	7.50%
2013	6.00%	7.00%
2014	5.70%	6.70%
2015 – 2019	5.40%	6.40%
2020 – 2023	5.30%	6.30%
2024 – 2029	5.20%	6.20%
2030 – 2039	5.10%	6.10%
2040 – 2049	5.00%	6.00%
2050 – 2074	4.60%	5.60%
2075 – 2098	4.30%	5.30%
Ultimate	3.80%	4.80%

Dental costs were assumed to increase 5 percent per annum.

### Decrement Assumptions

Below is a summary of decrements used in this valuation. Sample Retirement, Disability, and Termination rates are illustrated in the tables below.

Mortality Decrements	Description
(1) Healthy	RP-2000 Fully Generational with Scale AA Combined Healthy Table
(2) Disabled	RP-2000 Fully Generational Combined with Scale AA Disabled Table

## Other Post Employment Benefits

### 6. Valuation Methods and Assumptions (cont.)

#### Decrement Assumptions (cont.)

		Annual Rates of Retirement at Selected Ages (number retiring per 1,000 members)						
		45	50	55	60	65	70	75
Teachers' Pension								
Early								
First Year Eligible								
Male		--	--	20	60	--	--	
Female		--	--	45	80	--	--	
Subsequent Years								
Male		--	--	20	45	--	--	
Female		--	--	45	50	--	--	
Normal								
First Year Eligible								
Male		150	150	150	200	200	200	1,000
Female		130	130	130	240	70	70	1,000
Subsequent Years								
Male		100	100	100	170	220	160	1,000
Female		100	100	100	130	200	150	1,000

		Annual Rates of Disablement at Selected Ages (number becoming disabled per 10,000 members)							
		25	30	35	40	45	50	55	60
Teachers' Pension									
Male		3.1	3.1	3.1	10.2	20.4	30.6	40.8	51
Female		2.8	2.8	6.3	12.8	21.9	31.9	54.6	54.6

		Annual Rates of Withdrawal for first 10 Years of Service (number of withdrawals per 1,000 members)									
		0	1	2	3	4	5	6	7	8	9
Teachers' Pension											
Male		150	150	130	110	90	70	60	55	50	40
Female		140	140	120	100	80	70	60	55	50	50

# Other Post Employment Benefits

## 6. Valuation Methods and Assumptions (cont.)

### Decrement Assumptions (cont.)

	Annual Rates of Withdrawal at Selected Ages(after 10 YOS) (number of withdrawals per 1,000 members)						
	25	30	35	40	45	50	55
Teachers' Pension							
Male	40	40	40	20	10	10	10
Female	50	50	50	30	25	10	10

### Claims Assumption

Gross claims for retirees are based on enrollment and paid medical claims and prescription for retirees paid from July 1, 2010 to June 30, 2011. The claims were projected to Fiscal Year 2012. Claims were projected assuming annual increases of 9% for all claims.

Medical claims were increased by 0.5 percent to adjust for a IBNR. The prescription drug claims were reduced by 6 percent to account for prescription drug rebates.

Administrative costs are assumed to be \$703 per year for pre-age 65 retirees and \$301 per year for post age 65 retirees.

The Chart below shows the current cost broken down between the published per capita cost (i.e. the blended rates) and the hidden subsidy.

Total Costs	Single	Family
1. Explicit Costs		
a. Pre-Medicare	8,770	18,154
b. Post-Medicare	5,789	11,578
2. Total Medical and Drug Costs		
a. Under 50	5,919	12,252
b. Age 50-54	7,165	14,832
c. Age 55-59	8,308	17,198
d. Age 60-64	9,694	20,067
e. Age 65-69	4,766	9,532
f. Age 70-74	5,541	11,082
g. Age 75-79	5,642	11,284
h. Age 80-84	5,888	11,776
i. Age 85 and over	5,728	11,456
3. Dental Costs	311	622

# Other Post Employment Benefits

## 7. Glossary

<b>Annual OPEB Cost (AOC):</b>	An accrual-basis measure of the periodic cost of an employer's participation in a defined benefit OPEB plan.
<b>Annual Required Contributions of the Employer(s) (ARC):</b>	The employer's periodic required contributions to a defined benefit OPEB plan, calculated in accordance with the parameters.
<b>Covered Group:</b>	Plan members included in an actuarial valuation.
<b>Defined Benefit OPEB Plan:</b>	An OPEB plan having terms that specify the amount of benefits to be provided at or after separation from employment. The benefits may be specified in dollars (for example, a flat dollar payment or an amount based on one or more factors such as age, years of service, and compensation), or as a type or level of coverage (for example, prescription drugs or a percentage of healthcare insurance premiums).
<b>Employer's Contributions:</b>	Contributions made in relation to the annual required contributions of the employer (ARC). An employer has made a contribution in relation to the ARC if the employer has (a) made payments of benefits directly to or on behalf of a retiree or beneficiary, (b) made premium payments to an insurer, or (c) irrevocably transferred assets to a trust, or an equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator.
<b>Funded Ratio:</b>	The actuarial value of assets expressed as a percentage of the actuarial accrued liability.
<b>Healthcare Cost Trend Rate:</b>	The rate of change in per capita health claim costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
<b>Investment Return Assumption (Discount Rate):</b>	The rate used to adjust a series of future payments to reflect the time value of money
<b>Level Percentage of Projected Payroll Amortization Method:</b>	Amortization payments are calculated so that they are a constant percentage of the projected payroll of active plan members over a given number of years. The dollar amount of the payments generally will increase over time as payroll increases due to inflation; in dollars adjusted for inflation, the payments can be expected to remain level. This method can not be used if the plan is closed to new entrants.



## Other Post Employment Benefits

### 7. Glossary (cont.)

<b>Net OPEB Obligation:</b>	The cumulative difference since the effective date of this Statement between annual OPEB cost and the employer's contributions to the plan, including the OPEB liability (asset) at transition, if any, and excluding (a) short-term differences and (b) unpaid contributions that have been converted to OPEB-related debt.
<b>Normal Cost or Normal Actuarial Cost:</b>	That portion of the Actuarial Present Value of benefit plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.
<b>Other Post-employment Benefits:</b>	Post-employment benefits other than pension benefits. Other post-employment benefits (OPEB) include post-employment healthcare benefits, regardless of the type of plan that provides them, and all post-employment benefits provided separately from a pension plan, excluding benefits defined as termination offers and benefits.
<b>Pay-as-you-go (PAYG):</b>	A method of financing a benefit plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.
<b>Payroll Growth Rate:</b>	An actuarial assumption with respect to future increases in total covered payroll attributable to inflation; used in applying the level percentage of projected payroll amortization method.
<b>Plan Liabilities:</b>	Obligations payable by the plan at the reporting date, including, primarily, benefits and refunds due and payable to plan members and beneficiaries, and accrued investment and administrative expenses. Plan liabilities do not include actuarial accrued liabilities for benefits that are not due and payable at the reporting date.
<b>Plan Members:</b>	The individuals covered by the terms of an OPEB plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.
<b>Post-employment:</b>	The period between termination of employment and retirement as well as the period after retirement.
<b>Post-employment Healthcare Benefits:</b>	Medical, dental, vision, and other health-related benefits provided to terminated or retired employees and their dependents and beneficiaries.

## Other Post Employment Benefits

### 7. Glossary (cont.)

**Select and Ultimate Rates:**

Actuarial assumptions that contemplate different rates for successive years. Instead of a single assumed rate with respect to, for example, the investment return assumption, the actuary may apply different rates for the early years of a projection and a single rate for all subsequent years. For example, if an actuary applies an assumed investment return of 8 percent for year 2000, 7.5 percent for 2001, and 7 percent for 2002 and thereafter, then 8 percent and 7.5 percent are select rates, and 7 percent is the ultimate rate.

# Other Post Employment Benefits

## Appendix 1

**Harford County Public Schools  
FYE 2012 Plan Expense Under GASB 45  
Based on a Roll forward of FYE 2011 Results  
For Disclosure Purposes**

Below is a summary of the calculation of the Plan's Expense under the current provisions as of July 1, 2011. These results are based on the July 1, 2010 data used for the FYE 2011 valuation. The discount rate was reduced to 5.75%, to be based on the School's funding policy. These amounts are calculated as of the end of the year.

(1)	Interest Rate	5.75%
(2)	Liability as of July 1, 2011	\$462,698,000
(3)	Assets as of July 1, 2011	15,255,626
(4)	Amortization of Unfunded Accrued Liability	
	(a) Unfunded Accrued Liability	447,442,374
	(b) 27 Year Amortization Factor (Rounded)	18.51
	(c) Amortization Amount	24,172,000
(5)	Annual Required contribution of Employer (ARC) – As of End of Fiscal Year	
	(a) Normal Cost	17,472,000
	(b) Amortization of Unfunded Accrued Liability	<u>24,172,000</u>
	(c) Total ARC	41,644,000
(6)	Annual OPEB cost (AOC)	
	(a) ARC	41,644,000
	(b) Less NOO Amortization	5,939,000
	(c) Plus Interest on NOO	<u>6,322,000</u>
	(d) Total Cost	42,027,000
(7)	Net OPEB Obligation (NOO)	
	(a) NOO as of July 1, 2011	109,940,815
	(b) FY2012 AOC	42,027,000
	(c) Estimated Payments to Retirees	17,492,000
	(d) Trust Contribution	<u>7,064,886</u>
	(e) Projected End of the Year NOO (a+b-c-d)	\$127,410,929

# Other Post Employment Benefits

## Appendix 2

### CAFR Disclosures

#### Schedules of Employer Contributions

Year Ended June 30	Annual OPEB Cost	Actual Contribution <sup>1</sup>	Percentage Contributed	Net OPEB Obligation
2011	\$46,036,000	\$18,308,000	39.8%	109,940,815
2012	42,027,000	24,556,886	58.4%	127,410,929
2013	55,980,000	20,608,000	36.8%	162,782,929
2014	59,165,000	21,945,000	37.1%	200,002,929

1/ sum of estimated retiree medical payments plus scheduled trust contributions

#### Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (c)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as a % of Covered Payroll [(b)-(a)]/(c)
7/1/2010	10,962,506	534,277,000	523,314,494	2.05%		
7/1/2011	15,255,626	462,698,000	447,442,374	3.30%		
7/1/2012	23,541,000	660,933,000	637,392,000	3.56%		
7/1/2013	27,189,000	696,905,000	669,716,000	3.90%		

The schedule of funding progress presented as required supplementary information (RSI) following the notes to financial statements, present multiyear trend information about whether the actuarial values of the plan assets are increasing or decreasing over time relative to the AALs for benefits.

The School's annual contribution is based on annual actuarial valuations.

Actuarial Cost Method: Projected Unit Credit  
 Amortization Method: Closed  
 Amortization Period: 30 (as of July 1, 2008)  
 Asset Valuation Method: Market Value of Assets  
 Actuarial Assumptions  
     Discount Rate: 4.25% (FYE 2013 and FYE 2014) 5.75% for FYE 2012  
     Payroll Increase: 3.00%  
     Medical Trend: Based on Society of Actuaries Long Term Medical Trend Model,  
                             the initial rate is 7.00% decreasing gradually. The rate in 2050 is  
                             4.60%.

# Other Post Employment Benefits

## Appendix 3

### The Actuarial Valuation Process

#### Step 1 – Determining the Present Value of Benefits

The first step of the actuarial valuation process is to determine the Present Value of Benefits (PVB). The PVB represents the estimated amount needed to provide all future OPEB benefits.

For a retiree it is based on the following assumptions:

- The current cost of medical benefits
- How fast medical costs will increase (medical trend)
- Mortality

For an employee it *also* considers the following assumptions:

- How many employees will leave before becoming eligible for the benefit
- At what age will employees retire
- What percentage of eligible retirees will elect coverage
- What percent of eligible retirees will have spouse coverage

Based on these assumptions, the actuary estimates a payment stream for each year in the future.

The streams of payments are discounted to the valuation date using a discount rate. The discount rate is similar to the rate of return you would expect to earn on funds in a bank or other investment vehicle. The sum of the discounted payment stream is the PVB.

#### Step 2 – The Actuarial Funding Method

If the entire present value of benefits was deposited into a trust when every new employee was hired, there would be (in the absence of actuarial losses caused by experience different than that assumed) no cost after the first year. The goal of an actuarial funding method is to spread the present value of benefits throughout the employee's career.

Accordingly, the second step of an actuarial valuation is to divide the Present Value of Benefits into three components:

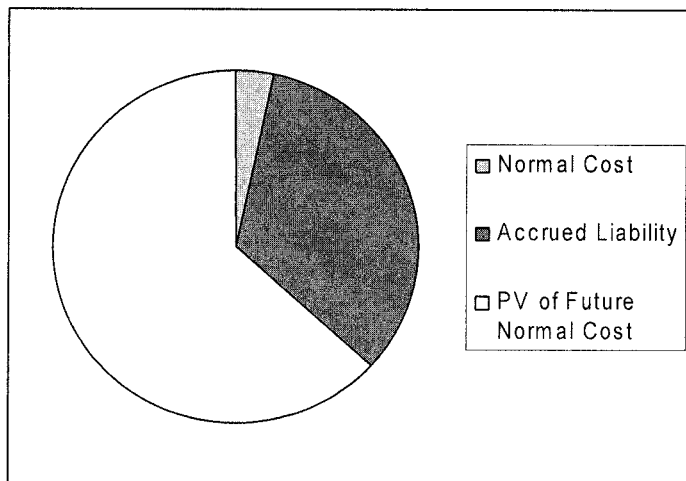
- The normal cost (the liability accrual for the year)
- The accrued liability (the liability amount allocated for past service)
- The present value of future normal costs (the liability amount allocated to the future)

# Other Post Employment Benefits

## Appendix 3

### The Actuarial Valuation Process (cont.)

The following chart illustrates the 3 components of the Present Value of Benefits:



For a retired employee, the present value of benefits equals the accrued liability.

### Step 3 – Determining the Annual Required Contribution (ARC)

Under the GASB standard, the Annual required contribution is equal to the sum of the:

- Normal Cost and
- An Amortization Payment of the Unfunded Accrued Liability

The unfunded accrued liability is equal to the accrued liability minus the assets (if any).

The amortization payment is not a straight line amortization payment. It is more like a mortgage payment on a house. It includes interest on the unfunded liability and a principal payment, and is designed to be a level payment. This could mean level as in a dollar payment, or as a level percentage of payroll. If it is a level percentage of payroll, the payment amount will increase as payroll increases.

Under the GASB standard, this payment period could be up to 30 years.

Also under the GASB standard, the payment period could be “closed” or “open”. A “Closed” payment period decreases each year. The unfunded amount will be zero at the end of the payment period. An “Open” payment period is reset each year to 30 years. The effect of resetting the payment period each year is similar to refinancing a loan every year. The loan will never be repaid.