GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

MICHIGAN PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM

ANNUAL ACTUARIAL VALUATION REPORT SEPTEMBER 30, 2012

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May 23, 2013

The Retirement Board
Michigan Public School Employees' Retirement System
General Office Building, Third Floor
P.O. Box 30171
Lansing, Michigan 48909

Re: Michigan Public School Employees' Retirement System - Actuarial Valuation as of September 30, 2012

Dear Board Members:

The results of the September 30, 2012 annual actuarial valuation of the Michigan Public School Employees' Retirement System pension benefits are presented in this report. The purpose of the valuation was to measure the System's funding progress, to determine the employer contribution for fiscal year 2015, and to provide actuarial information in connection with the applicable Governmental Accounting Standards Board Statements. The report should not be relied upon for any other purpose. This report may be provided to parties other than the Office of Retirement Services only in its entirety and only with the permission of the Office of Retirement Services.

The valuation was based upon information, furnished by the Office of Retirement Services, concerning Retirement System benefits, financial transactions, and active members, terminated members, retirees and beneficiaries. Data was checked for internal and year-to-year consistency, but was not otherwise audited by us. As a result, we are unable to assume responsibility for the accuracy or completeness of the data provided. Year 2005 and prior years' valuation results back to 1993 were not prepared by GRS and are reproduced for comparison with the current year's results.

The valuation summarized in this report involves actuarial calculations that require making assumptions about future events. We believe that the assumptions and methods used in this report are reasonable and appropriate. However, other assumptions and methods could also be reasonable and could result in materially different results. Some of the numbers in this report are rounded. The use of the rounded numbers for plan liabilities should not imply a lack of precision. In addition, because it is not possible or practical to consider every possible contigency, we may use summary information, estimates or simplifications or calculations to facilitate the modeling of future events. We may also exclude factors or data that we deem to be immaterial.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

To the best of our knowledge, this report is accurate and fairly presents the actuarial position of the Retirement System. The valuation was conducted in accordance with standards of practice prescribed by the Actuarial Standards Board and in compliance with the applicable state statutes. The undersigned are independent of the plan sponsor and are members of the American Academy of Actuaries (MAAA) who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. It is our opinion that the actuarial assumptions used for the valuation produce results which are reasonable.

Sincerely,

Mita Drazilov

Mita D. Drazilov, ASA, MAAA

Curtis Powell

Curtis Powell, EA, MAAA

MDD/CP:mrb

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1. Required Employer Contributions to Support Retirement Benefits

The computed employer contribution for fiscal year 2015 is shown below. Computed contributions are shown as a percentage of active member payroll and as an annual dollar amount.

	Total Computed Employer Contribution		
	Non-Hybrid Members	Hybrid (PPP) Members	Weighted Average
As a Percentage of Active Member Payroll			
Normal Cost	4.31 %	3.23 %	4.15 %
UAAL Amortization Payment	18.76	18.76	18.76
As an Annual Dollar Amount			
Normal Cost	$ 345,158,491	$ 44,794,473	$ 389,952,964
UAAL Amortization Payment	1,530,620,115	263,455,537	1,794,075,652
Total	$ 1,875,778,606	$ 308,250,010	$ 2,184,028,616

Since this valuation report establishes the employer contribution for fiscal year 2015, the plan changes resulting from Public Act 300 of 2012 have been reflected. As a result of the plan changes, a defined contribution (DC) plan option exists. With the introduction of the DC option, the employer normal cost percent (i.e., 4.15%) is expressed as a percentage of the defined benefit (DB) payroll, while the UAAL percent (i.e., 18.76%) is expressed as a percentage of total payroll (i.e., including both DB and DC active member payroll).

2. Public Act 300 of 2012

A brief summary of the plan changes resulting from Public Act 300 of 2012 follows:

Basic and MIP active members were given the following options to increase, maintain, or cease their contributions to the pension plan:

(1) Increase their member contribution rate to the pension fund and maintain the 1.5% benefit multiplier in their pension formula for service accrued after the transition date (i.e., February 1, 2013). Basic member contributions increased to 4% (from 0%). MIP member contributions increased to a flat 7% (from 3.9% for MIP-Fixed, from a graded percentage up to 4.3% for MIP-Graded, and from a graded percentage up to 6.4% for MIP-Plus).

EXECUTIVE SUMMARY/BOARD SUMMARY

(2) Increase their member contribution rate (as noted above) and maintain the 1.5% benefit multiplier in their pension formula for service accrued after the transition date until they reach 30 years of service. Upon reaching 30 years of service, their member contribution would return to their current level (pre-Public Act 300 of 2012), and their pension formula for service in excess of 30 years would be based upon a 1.25% benefit multiplier.

(3) Maintain their current member contribution rate to the pension fund. The pension formula for years of service before the transition date is based upon a 1.5% benefit multiplier, while the pension formula for years of service after the transition date is based upon a 1.25% benefit multiplier.

(4) Cease member contributions to the DB portion of the pension fund. In this circumstance, the member would no longer receive future benefit accruals in the DB plan and would become a participant in the DC plan. The pension formula for years of service before the transition date is based upon a 1.5% benefit multiplier. The member's final average compensation would be frozen as of the transition date.

Members who did not make an election before the deadline were deemed to have elected Option (3), maintain their current member contribution rate and receive future accruals based upon a 1.25% benefit multiplier. There was no change in pension benefits to Pension Plus Plan (PPP) members. New members will have the option of electing between the PPP and the DC plan. A summary of the option elections for the active membership is presented below:

Option 1 - Increase member contributions / 1.5% benefit multiplier after transition date	24 %
Option 2 - Increase member contributions and 1.5% benefit multiplier until 30 years of service	2
Option 3 - Current member contributions / 1.25% benefit multiplier after transition date	59
Option 4 - Cease DB member contributions / DC benefit after transition date	4
Not eligible to make an election	11

An additional provision of Public Act 300 of 2012 is that the impact of the Early Retirement Incentive (ERI) program of 2010 will be re-amortized over a 10-year period, rather than a 5-year period.

It is our understanding that the plan changes affect the fiscal year 2014 budgeted employer contribution rates. Fiscal year 2013 budgeted employer contributions are assumed to only be affected by the re-amortization of the ERI.

EXECUTIVE SUMMARY/BOARD SUMMARY

3. Annual Required Contribution, Budgeting Process and Reconciliation Process

For the September 30, 2011 valuation and prior valuations, an annual required contribution (ARC) for Governmental Accounting Standards Board (GASB) accounting purposes and the required employer contribution for funding purposes were established for the fiscal year following the valuation date. For example, the September 30, 2011 valuation established an ARC and the required employer contribution for funding purposes for fiscal year 2012. However, the 2011 valuation was used for fiscal year 2014 for budgeting purposes. Any differences between the required and budgeted employer contribution were handled through a reconciliation process, as established through subsection 41(9) of MPSERS statute.

It has been reported to the actuary that the reconciliation process is being suspended, and therefore, the September 30, 2012 valuation determines the required employer contribution for fiscal year 2015 for funding and accounting purposes.

Given this change in procedure, an ARC needs to be established for fiscal year 2013 in this report. The ARC for fiscal year 2013 was determined to be $1,931,894,000. This amount was based upon the results of the September 30, 2011 annual valuation adjusted for the fact that the ERI program is now being amortized over a 10-year period instead of a 5-year period. Since this is an accounting issue, we recommend that the System's auditors ensure that the proposed ARC complies with applicable GASB statements.

4. Contribution Comparison

The chart below compares the results of this valuation of the Retirement System with the results of the prior year's valuation:

Valuation Date	9/30/2011	9/30/2011	9/30/2012
Contribution Percentage			
Normal Cost	3.87 %	3.87 %	4.15 %
UAAL Amortization Payment	14.37	17.03	18.76
Total	18.24	20.90	N/A
As an Annual Dollar Amount			
Normal Cost	$ 370,739,713	$ 370,739,713	$ 389,952,964
UAAL Amortization Payment	1,373,772,000	1,628,068,000	1,794,075,652
Total	1,744,511,713	1,998,807,713	2,184,028,616
Fiscal Year Computed For	2012	N/A	2015
Fiscal Year Budgeted For	N/A	2014	2015

EXECUTIVE SUMMARY/BOARD SUMMARY

5. Reasons for Change

There are three general reasons why contribution rates change from one valuation to the next. The first is a change in the benefits or eligibility conditions of the plan. The second is a change in the valuation assumptions used to predict future occurrences and/or a change to the valuation methods. The third is the difference during the year between the plan's actual experience and what the assumptions predicted.

Section Two summarized the benefit changes. There were no material assumption changes. However, due to the benefit changes and the GASB's new pension accounting standards, a change to the actuarial cost method was incorporated. Each member's computed normal cost is based upon the benefit provisions applicable to that member. In addition, the amortization period was lengthened by two years. As of the September 30, 2011 valuation, the amortization period was 25 years from October 1, 2011. As of the September 30, 2012 valuation, the amortization period is 24 years from October 1, 2014. Experience for the year ended September 30, 2012 was overall unfavorable and is described in more detail in Section B of the report.

SECTION A

INTRODUCTION

CONTRIBUTION REQUIREMENTS

Development of Employer Contributions for the Indicated Valuation Date

	Contributions for	September 30 2011 Total	2012 Non-Hybrid	2012 Hybrid (PPP)	2012 Total
(1)	Fiscal Year Ending September 30,	2012	2015	2015	2015
(2)	Total Normal Cost of Benefits (as a % of member pay)	9.32%	8.93%	7.77%	8.76%
(3)	Member Contribution % (weighted average)	5.45%	4.62%	4.54%	4.61%
(4)	Employer Normal Cost % = (2) - (3)	3.87%	4.31%	3.23%	4.15%
(5)	Projected Active Member Payroll for Fiscal Year - Normal Cost $	$ 9,560,000,000	$ 8,008,317,648	$ 1,386,825,799	$ 9,395,143,447
(6)	Employer Normal Cost $ = (4) x (5)	370,739,713	345,158,491	44,794,473	389,952,964
(7)	Total Accrued Liability	63,427,057,074			62,716,029,136
(8)	Funding Value of Assets	41,038,196,530			38,449,959,892
(9)	Unfunded Actuarial Accrued Liabilities (UAAL) = (7) - (8)	$ 22,388,860,544			$ 24,266,069,244
	a. Present Value of Budgeted Early Retirement Incentive Payments	234,258,299			229,198,668
	b. Present Value of Remaining Early Retirement Incentive Payments	802,323,529			741,151,205
	c. Present Value of Future Reconciliation Payments	569,850,125			87,860,776
	d. Net UAAL to be Amortized = (9) - (9a) - (9b) - (9c)	$ 20,782,428,591			$ 23,207,858,595
(10)	Amortization Period (years)	25	24	24	24
(11)	Amortization Factor (level percent of payroll payments)	15.12855299	14.78198091	16.25363553	
(12)	Amortization Payment %	14.37%	17.40%	17.40%	17.40%
(13)	Early Retirement Incentive Amortization Payment %	2.66% *	1.36%	1.36%	1.36%
(14)	Total Amortization Payment % = (12) + (13)	17.03%	18.76%	18.76%	18.76%
(15)	Projected Active Member Payroll for Fiscal Year - Amortization $	$ 9,560,000,000	$ 8,158,955,838	$ 1,404,347,214	$ 9,563,303,052
(16)	Amortization Payment $ = (14) x (15)	1,628,068,000	1,530,620,115	263,455,537	1,794,075,652
(17)	Total Computed Employer Contribution $ = (6) + (16)	**$1,998,807,713**	**$1,875,778,606**	**$ 308,250,010**	**$2,184,028,616**

* *Amortization payments for the Early Retirement Incentive (ERI) are assumed to be first collected in fiscal year 2013. The September 30, 2011 valuation determined the fiscal year 2014 ERI amortization payment.*

CONTRIBUTION REQUIREMENTS

Computed Employer Contributions

Based on the assumptions outlined in Section E, the long term employer contribution rate for the Michigan Public School Employees' Retirement System is expected to be 2.67% of payroll (the long term employer normal cost rate for the Pension Plus Plan – hybrid plan, approximately based upon valuing all active members of MPSERS under the Hybrid provisions). However, for the current MPSERS active member population, the weighted average normal cost rate is 4.15%. Also, for the current year, there is a contribution needed to fund the unfunded actuarial accrued liability (UAAL). As the normal cost rate and the amortization payment of the UAAL rate are applied to different payrolls, the two contribution rates cannot be summed to get a total recommended employer contribution rate.

Effect of 2010 Early Retirement Incentive Program

For fiscal year 2015, the amortization payment will include 1.36% of total fiscal year payroll, attributable to the Early Retirement Incentive Program (as shown on page A-1).

Determining Employer Dollar Contributions

For any period of time, the percent-of-payroll contribution rate needs to be converted to dollars, then promptly contributed to the Retirement System. Please note, the normal cost rates and the amortization payment rates apply to two different types of payroll. The normal cost rates should be applied to the fiscal year 2015 payroll for those active employees who elected to maintain future benefit accruals in the defined benefit plan, while the amortization payment rates should be applied to the fiscal year 2015 payroll for the entire MPSERS active employee group.

For the Non-Hybrid Plan members, the employer normal cost rate (expressed as a % of the Non-Hybrid defined benefit participating active member payroll reported for this valuation) is 4.31%. Applying the employer normal cost contribution rate of 4.31% to the projected payroll for MPSERS active employees participating in the Non-Hybrid portion of the defined benefit plan for fiscal year 2015 produces annual employer normal cost contributions of $345,158,491.

For the Hybrid Plan members, the employer normal cost rate (expressed as a % of the Hybrid defined benefit participating active member payroll reported for this valuation) is 3.23%. Applying the employer normal cost contribution rate of 3.23% to the projected payroll for MPSERS active employees participating in the Hybrid portion of the defined benefit plan for fiscal year 2015 produces annual employer normal cost contributions of $44,794,473.

The amortization payment for funding the UAAL (expressed as a % of the total MPSERS active member payroll reported for this valuation) is 18.76%. Applying the amortization payment rate of 18.76% to the projected payroll for the total MPSERS active employees for fiscal year 2015 produces an annual amortization payment of $1,794,075,652.

The sum of the two normal cost contributions and the amortization payment yields an expected total employer contribution of $2,184,028,616 for fiscal year 2015. Currently, the non-investment cash flow is tracked separately in the assets for the Non-Hybrid and Hybrid groups. The normal cost contributions should be allocated to each of the respective groups as expected, based on the actual amounts. For the amortization payment of the UAAL, $438,512 should be allocated to the Hybrid group, and $1,793,637,140 should be allocated to the Non-Hybrid group.

Reconciliation Payments

The reconciliation process has been suspended. The contribution requirements shown on page A-1 for fiscal year 2015 are all encompassing. There is no additional amount to contribute in fiscal year 2015 due to the reconciliation process.

DISCUSSION OF CHANGES

Revisions in Benefits

A brief summary of the plan changes resulting from Public Act 300 of 2012 follows:

Basic and MIP active members were given the following options to increase, maintain, or cease their contributions to the pension plan:

(1) Increase their member contribution rate to the pension fund and maintain the 1.5% benefit multiplier in their pension formula for service accrued after the transition date (i.e., February 1, 2013). Basic member contributions increased to 4% (from 0%). MIP member contributions increased to a flat 7% (from 3.9% for MIP-Fixed, from a graded percentage up to 4.3% for MIP-Graded, and from a graded percentage up to 6.4% for MIP-Plus).

(2) Increase their member contribution rate (as noted above) and maintain the 1.5% benefit multiplier in their pension formula for service accrued after the transition date until they reach 30 years of service. Upon reaching 30 years of service, their member contribution would return to their current level (pre-Public Act 300 of 2012), and their pension formula for service in excess of 30 years would be based upon a 1.25% benefit multiplier.

(3) Maintain their current member contribution rate to the pension fund. The pension formula for years of service before the transition date is based upon a 1.5% benefit multiplier, while the pension formula for years of service after the transition date is based upon a 1.25% benefit multiplier.

(4) Cease member contributions to the DB portion of the pension fund. In this circumstance, the member would no longer receive future benefit accruals in the DB plan and would become a participant in the DC plan. The pension formula for years of service before the transition date is based upon a 1.5% benefit multiplier. The member's final average compensation would be frozen as of the transition date.

Members who did not make an election before the deadline were deemed to have elected Option (3), maintain their current member contribution rate and receive future accruals based upon a 1.25% benefit multiplier. There was no change in pension benefits to Pension Plus Plan (PPP) members. New members will have the option of electing between the PPP and the DC plan.

An additional provision of Public Act 300 of 2012 is that the impact of the Early Retirement Incentive (ERI) program of 2010 will be re-amortized over a 10-year period, rather than a 5-year period.

DISCUSSION OF CHANGES

It is our understanding that the plan changes affect the fiscal year 2014 budgeted employer contribution rates. Fiscal year 2013 budgeted employer contributions are assumed to only be affected by the re-amortization of the ERI.

Revisions in Actuarial Assumptions or Methods

There were no material assumption changes. However, due to the benefit changes and the GASB's new pension accounting standards, a change to the actuarial cost method was incorporated. Each member's computed normal cost is based upon the benefit provisions applicable to that member.

Actuarial Experience

Actuarial Experience was less favorable than that anticipated by the actuarial assumptions. The total actuarial loss was $2.7 billion. The loss was primarily due to recognized investment losses during the last plan year.

Comment on the Investment Markets

Investment markets continue to be volatile. The actuarial value of assets (funding value), used to determine both the funded status and the required employer contribution, is based on a 5-year smoothed value of assets. This reduces the volatility of the valuation results.

As of September 30, 2012, the actuarial value of assets was 102% of market value. This means that meeting the actuarial assumption in the next few years will require average future market returns that exceed the 8% investment return assumption.

If the September 30, 2012 valuation results were based on market value instead of smoothed funding value, the funded percent of the plan would be 60.1% (instead of 61.3%), and the UAAL amortization payment would be 19.38% of payroll (instead of 18.76%). If the investment markets do not make up for the losses of the two year period ending September 30, 2009, the funded percent and the UAAL amortization payment can be expected to head in that direction.

MEASURES OF FINANCIAL SOUNDNESS

The purpose of this section of the report is to provide certain measures which indicate the financial soundness of the program. These measures relate to long term solvency and level funding.

The various percentages listed in this section as of a single valuation date are not overly significant standing alone. What is more significant is the trend of the rates over a period of years. It is also important to keep in mind that each time benefits or assumptions are revised, actuarial liabilities are created or diminished. Any newly created liabilities are financed systematically over a period of future years. All actuarially computed values in this analysis are based on the actuarial assumptions utilized in the respective years' actuarial valuations.

Long Term Solvency

Over the longer term, the solvency of an ongoing plan can be measured by comparing the actuarial value of assets to an amount known as the actuarial accrued liability (AAL) under the Entry Age actuarial cost method. This item has often been called the "past service liability". The AAL is affected immediately by any revisions in benefits or assumptions. The accumulation of assets to equal the AAL can be considered a long range funding goal. Largely because of periodic benefit increases, very few retirement programs have attained this goal.

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	% of AAL Covered by Assets
9/30/2012 [2]	$38,449,959,892	$62,716,029,136	61.3 %
9/30/2012 [1]	38,449,959,892	63,277,466,358	60.8
9/30/2012	38,449,959,892	64,281,110,780	59.8
9/30/2011	41,038,196,530	63,427,057,074	64.7

[1] *Revised actuarial assumptions and/or methods.*

[2] *Change in plan provisions.*

Level Contributions

The actuarial assumptions and cost methods have been chosen with the intent of producing required total contributions which remain fairly level as a percentage of active member payroll.

Valuation Date	Fiscal Year Budgeted For	Normal Cost [4]	Amortization Payment	Total Contribution
9/30/2012 [2]	2015	4.15 %	18.76 %	N/A [3]
9/30/2012 [1]	2015	5.11	20.38	25.49 %
9/30/2012	2015	3.81	22.19	26.00
9/30/2011	2014	3.87	17.03	20.90

[1] *Revised actuarial assumptions and/or methods.*

[2] *Change in plan provisions.*

[3] *Effective with Public Act 300 of 2012, the normal cost rate and the amortization payment rate are applied to different payrolls and can no longer be added together for a total contribution rate.*

[4] *Normal cost is a weighted average rate of the Non-Hybrid and Hybrid normal cost rates.*

A major factor affecting the stability of the contribution requirements just shown is how well the actual plan experience compares to the actuarial assumptions. The value of the difference between what actually occurred and what was assumed to occur is called the actuarial gain or loss. Gains tend to lower the subsequent contribution requirements of the program while losses tend to cause subsequent contribution requirements to rise.

Year Ending	Actuarial Gain/(Loss)
9/30/2012	$ (2,672,872,327)
9/30/2011	(3,980,513,009)

Analysis of all the benchmarks listed above, over a period of years, will provide an indication of whether the program is becoming financially stronger or weaker.

SECTION B

FUNDING RESULTS

PRESENT VALUE OF FUTURE BENEFITS AND ACCRUED LIABILITY

Determination of Unfunded Accrued Liability
as of September 30, 2012

	Non-Hybrid	Hybrid (PPP)	Total
A. Accrued Liability			
1. For retirees and beneficiaries	$ 42,076,002,987	$ -	$ 42,076,002,987
2. For vested and other terminated members	953,112,617	-	953,112,617
3. For present active members			
a. Value of expected future benefit payments	26,095,894,381	434,122,939	26,530,017,320
b. Value of future normal costs	6,443,749,159	399,354,629	6,843,103,788
c. Active member accrued liability: (a) - (b)	19,652,145,222	34,768,310	19,686,913,532
4. Total accrued liability	62,681,260,826	34,768,310	62,716,029,136
B. Present Valuation Assets (Funding Value)	38,421,416,945	28,542,947	38,449,959,892
C. Unfunded Accrued Liability: (A.4) - (B)	24,259,843,881	6,225,363	24,266,069,244
D. Funding Ratio: (B) / (A.4)	61.3%	82.1%	61.3%

EXPERIENCE GAIN/(LOSS)

A. Derivation of Actuarial Gain/(Loss):		
1.	Unfunded Actuarial Accrued Liability (UAAL) - Previous Valuation	$ 22,388,860,544
2.	Total Normal Cost (employer plus member) for Year Ending 9/30/2012	807,611,382
3.	Total Contributions (employer plus member) for Year Ending 9/30/2012	1,789,909,786
4.	Interest on:	
	a. UAAL: Discount Rate* x (1)	1,791,062,489
	b. Normal Cost and Contributions: Discount Rate* / 2 x [(2) - (3)]	(39,346,068)
	c. Net Total: (a) + (b)	1,751,716,421
5.	Change in UAAL due to Benefit Changes	(561,437,222)
6.	Change in UAAL due to Method Changes	(1,003,644,422)
7.	Expected UAAL Current Year: (1) + (2) - (3) + (4c) + (5) + (6)	21,593,196,917
8.	Actual UAAL Current Year	24,266,069,244
9.	Experience Gain/(Loss): (7) - (8)	(2,672,872,327)
B. Approximate Portion of Gain/(Loss) due to Investments		(3,453,940,562)
C. Approximate Portion of Gain/(Loss) due to Liabilities: (A.9) - (B)		781,068,235

** Discount rate is 8% for Non-Hybrid groups and 7% for the Hybrid group.*

The schedule above shows the net, aggregate experience for the System. The next page shows this experience in detail.

DETAILED EXPERIENCE GAIN/(LOSS)

Gains/(Losses) During the Year Ended September 30, 2012
Resulting from Differences Between Assumed and Actual Experience

TYPE OF ACTIVITY

Type of Activity	Gain/(Loss)
1. **Retirements** (including disability retirement). If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss.	$ 31,372,593
2. **Withdrawal from Employment** (including death-in-service). If more liabilities are released by withdrawals and deaths than assumed, there is a gain. If smaller releases, a loss.	(41,099,184)
3. **Pay Increases.** If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	1,170,809,254
4. **Investment Income.** If there is greater investment income than assumed, there is a gain. If less income, a loss.	(3,453,940,562)
5. **Death After Retirement.** If retirants and inactive vested members live longer than assumed, there is a loss. If not as long, a gain.	(184,067,751)
6. **Rehires.**	(49,256,525)
7. **Other.** Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, etc.	(146,690,152)
8. **Composite Gain/(Loss) During Year.**	$ (2,672,872,327)

EXPERIENCE GAIN/(LOSS)

Five-Year History
(Amounts Shown in Millions)

Plan Year Ending September 30	Experience Gain/(Loss)	Gain/(Loss) Due to Investments	Actuarial Value of Investments	Investment Gain/(Loss) as % of Assets
2012	$ (2,673)	$ (3,454)	$ 38,450	(8.98)%
2011	(3,981)	(3,129)	41,038	(7.62)
2010	(2,727)	(2,718)	43,294	(6.28)
2009	(2,719)	(2,728)	44,703	(6.10)
2008	(1,834)	(1,464)	45,677	(3.20)

Plan Year Ending September 30	Gain/(Loss) Due to Liabilities	Actuarial Accrued Liability	Liability Gain/(Loss) as % of Accrued Liability
2012	$ 781	$ 62,716	1.25%
2011	(851)	63,427	(1.34)
2010	(9)	60,927	(0.02)
2009	9	56,685	0.02
2008	(371)	54,608	(0.68)

HISTORICAL FUNDING LEVELS FOR ACTUARIAL ACCRUED LIABILITIES

(Amounts Shown in Millions)

Valuation Date September 30	Actuarial Accrued Liability	Actuarial Value of Assets	Funded Ratio	Unfunded/(Overfunded) Accrued Liability	Active [4] Member Reported Payroll	Unfunded/(Overfunded) As % of Active Payroll
2000	$ 37,139	$ 36,893	99.3 %	$ 246	$ 8,985	2.7%
2001	39,774	38,399	96.5	1,375	9,264	14.8
2002	41,957	38,382	91.5	3,575	9,707	36.8
2003	44,769	38,726	86.5	6,043	10,044	60.2
2004	47,055	38,784	82.4	8,271	10,465	79.0
2004 [2]	46,317	38,784	83.7	7,533	10,407	72.4
2005	48,206	38,211	79.3	9,995	10,206	97.9
2006	49,136	39,893	81.2	9,243	9,806	94.3
2006 [1]	49,136	42,995	87.5	6,141	9,806	62.6
2007	51,107	45,335	88.7	5,771	9,851	58.6
2008	53,555	45,677	85.3	7,878	9,958	79.1
2008 [3]	54,608	45,677	83.6	8,931	9,958	89.7
2009	56,685	44,703	78.9	11,982	9,884	121.2
2010	58,543	43,294	74.0	15,250	8,845	172.4
2010 [2]	59,877	43,294	72.3	16,583	8,845	187.5
2010 [3]	60,927	43,294	71.1	17,633	8,845	199.4
2011	63,427	41,038	64.7	22,389	9,156	244.5
2012	64,281	38,450	59.8	25,831	8,649	298.7
2012 [2]	63,277	38,450	60.8	24,827	8,649	287.1
2012 [3]	62,716	38,450	61.3	24,266	8,649	280.6

[1] *Revised asset valuation method.*
[2] *Revised actuarial assumptions and/or methods.*
[3] *Change in plan provisions.*
[4] *Payroll for UAL purposes (Total MPSERS Payroll).*

RECOMMENDED AND ACTUAL EMPLOYER CONTRIBUTIONS
HISTORICAL COMPARISON

(Amounts Shown in Millions)

Fiscal Year Ending September 30	Valuation Date September 30	Contribution Rates As Percents of Valuation Payroll	Actual Payroll	Employer Contribution for Fiscal Year Computed	Employer Contribution for Fiscal Year Actual
	2004	10.72%	$ 10,137.4	$ 1,086.7	-
2005	2004 [2]	9.83	10,137.4	996.5	$ 715.0
2006	2005	11.38	10,242.5	1,165.6	996.0
	2006	10.90	10,307.6	1,123.5	-
	2006 [1]	9.06	10,307.6	933.9	-
2007	2006 [4]	8.15	10,307.6	840.1	835.4
2008	2007	8.87	10,318.9	915.3	999.4
	2008	10.15	10,412.0	1,056.8	-
2009	2008 [3]	9.60	10,412.0	999.6	1,000.4
2010	2009	11.56	9,913.6	1,146.0	1,001.3
	2010	14.47	9,513.1	1,376.5	-
	2010 [2]	14.99	9,513.1	1,426.0	-
	2010 [3]	17.59	9,513.1	1,673.4	-
2011	2010 [3,5]	14.93	9,513.1	1,420.3	1,156.1
	2011	20.90	9,064.2	1,894.4	-
2012	2011 [5]	18.24	9,064.2	1,653.3	1,454.4
2013 [8]	2011 [6]	19.60			
	2012	26.00			
	2012 [2]	25.49			
2015 [7,8]	2012 [3,6]	4.15 % 18.76 %			

[1] *Revised asset valuation method.*

[2] *Revised actuarial assumptions and/or methods.*

[3] *Change in plan provisions.*

[4] *Interest-only funding adopted for one year only.*

[5] *Does not include UAAL amortization payment for ERI.*

[6] *Incorporates re-amortization of ERI over a 10-year period, rather than a 5-year period.*

[7] *Effective with the 2015 fiscal year plan change, the normal cost rate and the amortization payment rate are applied to different payrolls and cannot be added.*

[8] *For the fiscal years ending September 30, 2013 and beyond, the actual payroll and actual contribution are not yet known.*

HISTORICAL FUNDING LEVELS FOR PRIORITIZED ACTUARIAL ACCRUED LIABILITY

Valuation Date September 30	Actuarial Accrued Liability ($ in Millions) (1) Active Member Contributions	(2) Retirants and Beneficiaries	(3) Active and Inactive Members (Employer Financed Portion)	Valuation Assets ($ in Millions)	Portion of Actuarial Accrued Liability Covered by Assets (1)	(2)	(3)	(4) [4]
2000	$ 2,932	$ 19,200	$ 15,007	$ 36,893	100.0%	100.0%	98.4%	99.3%
2001	3,244	20,943	15,587	38,399	100.0	100.0	91.2	96.5
2002	3,490	22,480	15,987	38,382	100.0	100.0	77.6	91.5
2003	3,720	24,080	16,969	38,726	100.0	100.0	64.4	86.5
2004	3,800	26,178	17,077	38,784	100.0	100.0	51.6	82.4
2004 [2]	3,800	26,178	16,339	38,784	100.0	100.0	53.9	83.7
2005	3,898	28,047	16,261	38,211	100.0	100.0	38.5	79.3
2006	4,082	29,505	15,549	39,893	100.0	100.0	40.6	81.2
2006 [1]	4,082	29,505	15,549	42,995	100.0	100.0	60.5	87.5
2007	4,376	31,254	15,477	45,335	100.0	100.0	62.7	88.7
2008	5,168	32,723	15,664	45,677	100.0	100.0	49.7	85.3
2008 [3]	5,168	32,723	16,717	45,677	100.0	100.0	46.6	83.6
2009	5,449	34,159	17,077	44,703	100.0	100.0	29.8	78.9
2010	5,055	38,315	15,173	43,294	100.0	99.8	0.0	74.0
2010 [2]	5,055	38,589	16,233	43,294	100.0	99.1	0.0	72.3
2010 [3]	5,055	39,639	16,233	43,294	100.0	96.5	0.0	71.1
2011	5,217	41,043	17,167	41,038	100.0	87.3	0.0	64.7
2012	5,296	42,076	16,909	38,450	100.0	78.8	0.0	59.8
2012 [2]	5,296	42,076	15,905	38,450	100.0	78.8	0.0	60.8
2012 [3]	5,296	42,076	15,344	38,450	100.0	78.8	0.0	61.3

[1] *Revised asset valuation method.*
[2] *Revised actuarial assumptions and/or methods.*
[3] *Change in plan provisions.*
[4] *Percent funded on a total valuation asset and total actuarial accrued liability basis.*

FINANCIAL OBJECTIVE ACHIEVEMENT INDICATORS – HISTORICAL COMPARISON (DOLLAR AMOUNTS IN MILLIONS)

		Termination Indicator		Experience Indicator
Valuation September 30	Valuation Assets	Actuarial Present Value of Vested Benefits	Funded Ratio	Actuarial Gain/(Loss)
1999	$ 34,095	$ 27,755	122.8 %	$ 904
2000	36,893	30,264	121.9	2
2001	38,399	32,755	117.2	(1,259)
2002	38,382	34,686	110.7	(2,096)
2003	38,726	37,424	103.5	(2,337)
2004	38,784	39,659	97.8	(2,001)
2004 [2]	38,784	39,737	97.6	(2,001)
2005	38,211	41,595	91.9	(1,868)
2006	39,893	45,549	87.6	539
2006 [1]	42,995	45,549	94.4	3,641
2007	45,335	47,502	95.4	614
2008	45,677	50,286	90.8	(1,834)
2009	44,703	51,936	86.1	(2,719)
2010	43,294	52,901	81.8	(2,727)
2010 [2]	43,294	53,454	81.0	(2,727)
2010 [3]	43,294	54,505	79.4	(2,727)
2011	41,038	56,446	72.7	(3,981)
2012	38,450	57,372	67.0	(2,673)
2012 [2]	38,450	57,372	67.0	(2,673)
2012 [3]	38,450	57,369	67.0	(2,673)

[1] *Revised asset valuation method.*
[2] *Revised actuarial assumptions and/or methods.*
[3] *Change in plan provisions.*

SECTION C

FUND ASSETS

STATEMENT OF PLAN NET ASSETS (ASSETS AT MARKET OR FAIR VALUE)

	September 30	
	2011	2012
Equity in Common Cash	$ 115,573,063	$ 39,252,333
Total Receivables	255,627,644	260,742,930
Short Term Investment Pools	1,246,540,091	1,747,923,377
Fixed Income Pools	5,411,702,431	5,068,036,240
Domestic Equity Pools	10,173,927,306	10,414,415,293
Real Estate Pool	3,716,827,115	3,963,596,567
Alternative Investment Pools	8,129,287,277	8,261,100,965
International Equity Pools	4,421,424,526	5,391,998,639
Absolute Return Pools	2,245,174,519	3,423,827,194
Securities Lending Collateral less Obligations	(1,004,817,544)	(844,445,484)
Total Assets	34,711,266,428	37,726,448,054
Other Liabilities	(36,613,033)	(26,036,093)
Net Assets Held in Trust for Pension Benefits	$34,674,653,395	$37,700,411,961

Note: Asset amounts exclude assets held for health benefits.

RECONCILIATION OF PLAN NET ASSETS

	September 30, 2011			September 30, 2012		
	Non-Pension Plus	Pension Plus	Total	Non-Pension Plus	Pension Plus	Total
Market Value, Beginning of Year	$35,855,301,533	$ 176,312	$35,855,477,845	$34,664,520,519	$ 10,132,876	$34,674,653,395
Additions						
Member Contributions	325,857,955	6,351,179	332,209,134	324,327,745	11,143,134	335,470,879
Employer Contributions	1,152,612,768	3,448,135	1,156,060,903	1,448,682,399	5,756,508	1,454,438,907
Net Investment Income*	1,332,252,870	194,760	1,332,447,630	5,384,106,432	2,969,623	5,387,076,055
Audit Adjustment	0	0	0	0	0	0
Total Additions	2,810,723,593	9,994,074	2,820,717,667	7,157,116,576	19,869,265	7,176,985,841
Deductions						
Benefit Payments	3,942,027,101	0	3,942,027,101	4,082,242,506	0	4,082,242,506
Contribution Refunds/Transfers	36,554,464	34,159	36,588,623	31,647,304	217,835	31,865,139
Administrative Expenses*	22,923,042	3,351	22,926,393	37,099,168	20,462	37,119,630
Total Deductions	4,001,504,607	37,510	4,001,542,117	4,150,988,978	238,297	4,151,227,275
Market Value, End of Year	$34,664,520,519	$ 10,132,876	$34,674,653,395	$37,670,648,117	$ 29,763,844	$37,700,411,961

* *Net investment income and administrative expenses are allocated between Pension Plus and Non-Pension Plus assets. These splits are not explicitly provided.*

DEVELOPMENT OF VALUATION ASSETS – NON-HYBRID

	2012	2013	2014	2015	2016
1. Beginning of Year Assets					
a. Market Value	$ 34,664,520,519				
b. Valuation Assets	41,027,934,880				
2. End of Year Assets at Market Value	37,670,648,117				
3. Net Additions to Market Value					
a. Member Contributions	324,327,745				
b. Employer Contributions	1,448,682,399				
c. Investment Income	5,384,106,432				
d. Benefit Payments	(4,082,242,506)				
e. Contribution Refunds/Transfers	(31,647,304)				
f. Administrative Expenses	(37,099,168)				
g. Transfer (to) from stabilization subaccount	0				
h. Audit Adjustment	0				
i. Total Additions to Market Value	3,006,127,598				
4. Summary of Net Additions to Market Value					
a. Net Contributions and Transfers = 3a + 3b + 3e +3g	1,741,362,840				
b. Net Investment Income = 3c + 3f	5,347,007,264				
c. Benefit Payments = 3d	(4,082,242,506)				
d. Audit Adjustment = 3h	0				
e. Total Additions to Market Value	3,006,127,598				
5. Average Valuation Assets =					
1b + .5 x (4a + 4c) + 4d	39,857,495,047				
6. Imputed Income at Valuation Rate = 8.00% x 5	3,188,599,604				
7. Gain (Loss) from Investments = 4b - 6	2,158,407,660				
8. Portion of Gains (Losses) Recognized from Prior Years					
a. From this year = .2 * 7	431,681,532				
b. From one year ago	(410,830,772)	$ 431,681,532			
c. From two years ago	9,597,984	(410,830,772)	$ 431,681,532		
d. From three years ago	(1,264,198,605)	9,597,984	(410,830,772)	$ 431,681,532	
e. From four years ago	(2,220,488,012)	(1,264,198,607)	9,597,983	(410,830,772)	$ 431,681,532
f. Total	(3,454,237,873)	(1,233,749,863)	30,448,743	20,850,760	431,681,532
9. Change in Valuation Assets = 4a + 4c + 4d + 6 + 8f	(2,606,517,935)				
10. End of Year Assets					
a. Market Value = 2	37,670,648,117				
b. Valuation Assets = 1b + 9	38,421,416,945				
11. Actuarial Rate of Return	(0.67)%				
12. Market Rate of Return	15.96%				

DEVELOPMENT OF VALUATION ASSETS – NON-HYBRID (CONTINUED)

	2007	2008	2009	2010	2011
1. Beginning of Year Assets					
a. Market Value	$ 42,995,406,246	$ 48,362,932,895	$ 39,065,741,456	$ 34,498,379,563	$ 35,855,301,533
b. Valuation Assets	42,995,406,246	45,335,413,233	45,677,053,757	44,702,878,189	43,293,601,522
2. End of Year Assets at Market Value	48,362,932,895	39,065,741,456	34,498,379,563	35,855,301,533	34,664,520,519
3. Net Additions to Market Value					
a. Member Contributions	356,761,212	399,256,616	357,249,466	377,732,355	325,857,955
b. Employer Contributions	835,366,382	999,374,879	1,000,375,355	1,001,100,625	1,152,612,768
c. Investment Income	7,177,114,740	(7,520,927,313)	(2,712,429,401)	3,563,017,031	1,332,252,870
d. Benefit Payments	(2,944,920,179)	(3,117,434,847)	(3,278,118,116)	(3,525,020,341)	(3,942,027,101)
e. Contribution Refunds/Transfers	(32,241,730)	(32,720,146)	(33,943,530)	(33,907,066)	(36,554,464)
f. Administrative Expenses	(24,489,202)	(24,740,628)	(22,793,011)	(26,000,634)	(22,923,042)
g. Transfer (to) from stabilization subaccount	0	0	0	0	0
h. Audit Adjustment	(64,574)	0	122,297,344	0	0
i. Total Additions to Market Value	5,367,526,649	(9,297,191,439)	(4,567,361,893)	1,356,921,970	(1,190,781,014)
4. Summary of Net Additions to Market Value					
a. Net Contributions and Transfers = 3a + 3b + 3e +3g	1,159,885,864	1,365,911,349	1,323,681,291	1,344,925,914	1,441,916,259
b. Net Investment Income = 3c + 3f	7,152,625,538	(7,545,667,941)	(2,735,222,412)	3,537,016,397	1,309,329,828
c. Benefit Payments = 3d	(2,944,920,179)	(3,117,434,847)	(3,278,118,116)	(3,525,020,341)	(3,942,027,101)
d. Audit Adjustment = 3h	(64,574)	0	122,297,344	0	0
e. Total Additions to Market Value	5,367,526,649	(9,297,191,439)	(4,567,361,893)	1,356,921,970	(1,190,781,014)
5. Average Valuation Assets =					
1b + .5 x (4a + 4c) + 4d	42,102,824,514	44,459,651,484	44,822,132,688	43,612,830,975	42,043,546,101
6. Imputed Income at Valuation Rate = 8.00% x 5	3,368,225,961	3,556,772,119	3,585,770,615	3,489,026,478	3,363,483,688
7. Gain (Loss) from Investments = 4b - 6	3,784,399,577	(11,102,440,060)	(6,320,993,027)	47,989,919	(2,054,153,860)
8. Portion of Gains (Losses) Recognized from Prior Years					
a. From this year = .2 * 7	756,879,915	(2,220,488,012)	(1,264,198,605)	9,597,984	(410,830,772)
b. From one year ago	0	756,879,915	(2,220,488,012)	(1,264,198,605)	9,597,984
c. From two years ago	0	0	756,879,915	(2,220,488,012)	(1,264,198,605)
d. From three years ago	0	0	0	756,879,915	(2,220,488,012)
e. From four years ago	0	0	0	0	756,879,917
f. Total	756,879,915	(1,463,608,097)	(2,727,806,702)	(2,718,208,718)	(3,129,039,488)
9. Change in Valuation Assets = 4a + 4c + 4d + 6 + 8f	2,340,006,987	341,640,524	(974,175,568)	(1,409,276,667)	(2,265,666,642)
10. End of Year Assets					
a. Market Value = 2	48,362,932,895	39,065,741,456	34,498,379,563	35,855,301,533	34,664,520,519
b. Valuation Assets = 1b + 9	45,335,413,233	45,677,053,757	44,702,878,189	43,293,601,522	41,027,934,880
11. Actuarial Rate of Return	9.80%	4.71%	1.91%	1.77%	0.56%
12. Market Rate of Return	16.99%	(15.89)%	(7.16)%	10.59%	3.78%

DEVELOPMENT OF VALUATION ASSETS – HYBRID

	2010	2011	2012	2013	2014	2015	2016
1. Beginning of Year Assets							
a. Market Value	$ 0	$ 176,312	$ 10,132,876				
b. Valuation Assets	0	174,579	10,261,650				
2. End of Year Assets at Market Value	176,312	10,132,876	29,763,844				
3. Net Additions to Market Value							
a. Member Contributions	16,400	6,351,179	11,143,134				
b. Employer Contributions	151,048	3,448,135	5,756,508				
c. Investment Income	8,929	194,760	2,969,623				
d. Benefit Payments	0	0	0				
e. Contribution Refunds/Transfers	0	(34,159)	(217,835)				
f. Administrative Expenses	(65)	(3,351)	(20,462)				
g. Transfer (to) from stabilization subaccount	0	0	0				
h. Audit Adjustment	0	0	0				
i. Total Additions to Market Value	176,312	9,956,564	19,630,968				
4. Summary of Net Additions to Market Value							
a. Net Contributions and Transfers = 3a + 3b + 3e +3g	167,448	9,765,155	16,681,807				
b. Net Investment Income = 3c + 3f	8,864	191,409	2,949,161				
c. Benefit Payments = 3d	0	0	0				
d. Audit Adjustment = 3h	0	0	0				
e. Total Additions to Market Value	176,312	9,956,564	19,630,968				
5. Average Valuation Assets = 1b + .5 x (4a + 4c) + 4d	83,724	5,057,157	18,602,554				
6. Imputed Income at Valuation Rate = 7.00% x 5	6,698	354,001	1,302,179				
7. Gain (Loss) from Investments = 4b - 6	2,166	(162,592)	1,646,982				
8. Portion of Gains (Losses) Recognized from Prior Years							
a. From this year = .2 * 7	433	(32,518)	329,396				
b. From one year ago	0	433	(32,518)	$ 329,396			
c. From two years ago	0	0	433	(32,518)	$ 329,396		
d. From three years ago	0	0	0	433	(32,518)	$ 329,396	
e. From four years ago	0	0	0	0	434	(32,520)	$ 329,398
f. Total	433	(32,085)	297,311	297,311	297,312	296,876	329,398
9. Change in Valuation Assets = 4a + 4c + 4d + 6 + 8f	174,579	10,087,071	18,281,297				
10. End of Year Assets							
a. Market Value = 2	176,312	10,132,876	29,763,844				
b. Valuation Assets = 1b + 9	174,579	10,261,650	28,542,947				
11. Actuarial Rate of Return	8.52%	6.37%	8.60%				
12. Market Rate of Return	10.59%	3.78%	15.96%				

HISTORY OF APPROXIMATE INVESTMENT RETURN RATES

Plan Year Ending September 30	Approximate Rate of Return[1] Market	Non-Hybrid Actuarial	Hybrid (PPP) Actuarial
2003	15.47 %	3.55 %	
2004	12.76	2.87	
2005	12.54	2.51	
2006	12.69	7.46	
2006[2]	12.69	15.70[2]	
2007	16.99	9.80	
2008	(15.89)	4.71	
2009	(7.16)	1.91	
2010	10.59	1.77	8.52 %
2011	3.78	0.56	6.37
2012	15.96	(0.67)	8.60
Average Returns:			
Last five years:	0.77 %	1.64 %	7.83 %
Last ten years:	7.22 %	4.17 %	7.83 %

[1] *Approximate return based on ratio of total investment return to average asset value, using an assumed beginning-of-year timing of audit adjustments (if any) and an assumed mid-year timing of other asset flows (see previous two pages).*

[2] *After adjusting to market value as of September 30, 2006.*

HISTORICAL GROWTH OF ASSETS AT MARKET VALUE

Fiscal Year Ended September 30	Revenues by Source: Member Contributions	Revenues by Source: Employer Contributions	Revenues by Source: Net Investment Income [1]	Expenses by Type: Retirement Benefits	Expenses by Type: Return of Contributions and Transfers	Expenses by Type: Administrative Expenses	Market Value of Assets
1993	$ 223,584,885	$ 612,237,315	$ 1,134,556,020 [2]	$ 879,273,565	$ 3,940,883	$ 15,757,850	$ 15,592,328,373
1994	244,086,635	809,783,443	1,086,059,845 [2]	977,986,904	5,457,370	19,759,103	16,729,054,919
1995	248,662,424	771,888,667	1,361,440,148 [2]	1,100,208,507	7,926,131	19,663,705	17,983,247,815
1996	255,085,948	829,601,695	6,675,359,302 [2]	1,268,260,318	11,638,709	10,381,801	24,453,013,932
1997	253,358,290	904,817,513	5,738,458,322 [2]	1,317,828,100	17,859,063	12,102,095	30,001,858,799
1998	252,672,436	622,437,022	2,409,304,679	1,454,451,439	21,626,704	14,463,339	31,795,731,454
1999	518,861,556	574,436,929	5,075,649,100	1,587,992,361	11,198,300	16,525,359	36,348,963,019
2000	321,557,146	655,258,922	4,755,872,070	1,735,936,328	17,455,802	15,918,143	40,312,340,884
2001	371,548,016	629,924,827	(4,575,630,855)	1,890,812,400	19,835,729	17,312,250	34,810,222,493
2002	413,163,871	603,949,327	(3,733,441,844)	2,041,439,863	20,813,845	23,610,482	30,008,029,657
2003	379,084,549	697,906,265	4,532,071,835	2,180,574,193	13,642,300	23,016,963	33,399,858,850
2004	456,352,606	697,647,338	4,130,642,038	2,358,216,073	18,403,233	19,374,673	36,288,506,853
2005	368,240,837	774,277,778	4,530,606,037	2,558,017,710	22,166,261	19,997,954	39,361,449,580
2006	518,599,720	995,932,425	4,927,177,496	2,761,292,217	24,024,234	22,501,098	42,995,341,672
2007	356,761,212	835,366,382	7,177,114,740	2,944,920,179	32,241,730	24,489,202	48,362,932,895
2008	399,256,616	999,374,879	(7,398,629,969)	3,117,434,847	32,720,146	24,740,628	39,188,038,800
2009	357,249,466	1,000,375,355	(2,712,429,401)	3,278,118,116	33,943,530	22,793,011	34,498,379,563
2010	377,748,755	1,001,251,673	3,563,025,960	3,525,020,341	33,907,066	26,000,699	35,855,477,845
2011	332,209,134	1,156,060,903	1,332,447,630	3,942,027,101	36,588,623	22,926,393	34,674,653,395
2012	335,470,879	1,454,438,907	5,387,076,055	4,082,242,506	31,865,139	37,119,630	37,700,411,961

[1] *Includes miscellaneous income.*
[2] *Includes other changes in net assets/reserves/fund balances and, in 1996, a $3,405,165,438 cumulative adjustment due to GASB Statement Nos. 25 and 26.*

Note: Data for the year 2007 and prior years was provided by the State of Michigan Department of Technology, Management and Budget - Financial Services.

SECTION D

CENSUS DATA

SUMMARY OF PARTICIPANT DATA BY CATEGORY

	As of September 30	
	2011	**2012**
Retirees and beneficiaries currently receiving benefits:		
Regular benefits	170,961	174,651
Survivor benefits	15,654	16,036
Disability benefits	5,820	5,974
Total	192,435	196,661
Current Employees:		
Vested	114,680	113,519
Non-vested	121,980	110,250
Total	236,660	223,769
Inactive employees entitled to benefits and not yet receiving them:	15,090	16,167
Total Participants	444,185	436,597

The September 30, 2012 active counts include 7,901 people who elected not to continue future accruals (after the transition date of February 1, 2013) in the defined benefit plan as a result of the plan changes. UAAL contributions are expected to continue to be collected on the payroll of these members in the future.

RETIREES AND BENEFICIARIES – HISTORICAL COMPARISON

Year Ended September 30	Rolls End of Year Number	Rolls End of Year Annual Benefit[1]	Annual % Increase Number	Annual % Increase Benefits	Average Annual Benefit
1993	93,574	$ 911,686	3.7%	9.7%	$ 9,743
1994	97,989	1,018,819	4.7	11.8	10,397
1995	103,151	1,141,972	5.3	12.1	11,071
1996	107,465	1,251,811	4.2	9.6	11,649
1997	111,842	1,371,479	4.1	9.6	12,263
1998	116,620	1,505,362	4.3	9.8	12,908
1999	120,913	1,639,825	3.7	8.9	13,562
2000	126,115	1,798,028	4.3	9.6	14,257
2001	130,790	1,943,444	3.7	8.1	14,859
2002	135,277	2,094,382	3.4	7.8	15,482
2003	139,814	2,251,766	3.4	7.5	16,105
2004	145,378	2,431,636	4.0	8.0	16,726
2005	151,706	2,644,700	4.4	8.8	17,433
2006	157,163	2,828,460	3.6	6.9	17,997
2007	162,844	3,013,075	3.6	6.5	18,503
2008	167,265	3,171,261	2.7	5.3	18,960
2009	171,922	3,336,165	2.8	5.2	19,405
2010	187,722	3,814,755	9.2	14.3	20,321
2011	192,435	3,987,227	2.5	4.5	20,720
2012	196,661	4,134,218	2.2	3.7	21,022

[1] *In thousands of dollars.*

RETIREES AND BENEFICIARIES AS OF SEPTEMBER 30, 2012 BY TYPE OF RETIREMENT AND SELECTED OPTION

Amount of Monthly Benefit	Number of Retirees	Type of Retirement*						Selected Option**				
		1	2	3	4	5	6	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt 1E 2E,3E,4E
$ 1 - 200	13,098	11,459	1,068	83	334	3	151	7,172	2,929	1,878	185	934
201 - 400	21,651	18,417	1,421	125	1,322	2	364	11,914	4,371	3,692	421	1,253
401 - 600	16,584	13,683	1,193	102	1,230	1	375	8,681	3,399	3,078	426	1,000
601 - 800	12,856	10,556	879	55	980	1	385	6,474	2,582	2,525	428	847
801 - 1,000	10,695	8,751	828	43	715	1	357	5,152	2,143	2,165	384	851
1,001 - 1,200	9,250	7,652	786	17	513	0	282	4,127	1,946	1,877	391	909
1,201 - 1,400	8,442	6,943	768	16	455	0	260	3,599	1,744	1,614	389	1,096
1,401 - 1,600	7,965	6,729	678	8	315	0	235	3,142	1,628	1,464	357	1,374
1,601 - 1,800	7,689	6,687	562	3	250	0	187	2,886	1,551	1,335	393	1,524
1,801 - 2,000	7,819	6,915	497	3	235	1	168	2,868	1,668	1,291	429	1,563
Over 2,000	80,612	76,859	2,531	10	487	2	723	34,981	15,521	16,582	6,049	7,479
Totals	196,661	174,651	11,211	465	6,836	11	3,487	90,996	39,482	37,501	9,852	18,830

*** Type of Retirement**

1 – Normal retirement for age & service
2 – Survivor payment – normal retirement
3 – Duty disability retirement (including survivors)
4 – Non-duty disability retirement (including survivors)
5 – Survivor payment – duty death in service
6 – Survivor payment – non-duty death in service

**** Selected Option**

Opt. 1 – Straight life allowance
Opt. 2 – 100% survivor option
Opt. 3 – 50% survivor option
Opt. 4 – 75% survivor option
Opt. 1E, 2E, 3E, 4E – equated retirement plans

ACTIVE MEMBERS BY CLASSIFICATION

	September 30, 2011	September 30, 2012
Basic Members		
Number	27,757	24,947
Average Age	53.8 years	54.3 years
Average Service	22.9 years	23.5 years
Reported Payroll	$ 1,473,755,982	$ 1,318,807,894
Average Annual Pay	$ 53,095	$ 52,864
MIP Members		
Number	190,100	174,482
Average Age	45.1 years	45.9 years
Average Service	10.7 years	11.8 years
Reported Payroll	$ 7,366,492,176	$ 6,951,450,899
Average Annual Pay	$ 38,751	$ 39,841
PPP Members		
Number	18,803	24,340
Average Age	35.0 years	35.7 years
Average Service	0.4 years	0.7 years
Reported Payroll	$ 315,442,706	$ 378,770,194
Average Annual Pay	$ 16,776	$ 15,562
Total		
Number	236,660	223,769
Average Age	45.3 years	45.7 years
Average Service	11.3 years	11.9 years
Reported Payroll	$ 9,155,690,864	$ 8,649,028,987
Average Annual Pay	$ 38,687	$ 38,652

The September 30, 2012 active counts include 7,901 people who elected not to continue future accruals (after the transition date of February 1, 2013) in the defined benefit plan as a result of the plan changes. UAAL contributions are expected to continue to be collected on the payroll of these members in the future.

ACTIVE MEMBERS

Members in Active Service as of September 30, 2012
by Age and Years of Service

	Years of Service							Total	Total	Average
Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & up	Count	Pay	Pay
Under 20	318							318	$ 3,145,607	$ 9,892
20 - 24	6,493	27						6,520	72,511,366	11,121
25 - 29	11,974	2,017	23					14,014	349,663,476	24,951
30 - 34	8,672	9,429	1,482	1,205				20,788	773,295,114	37,199
35 - 39	7,759	5,050	5,562	6,764	482			25,617	1,150,662,769	44,918
40 - 44	9,398	4,891	4,499	8,496	4,344	268		31,896	1,422,724,960	44,605
45 - 49	8,862	5,381	4,650	5,248	6,233	2,821	159	33,354	1,349,645,808	40,464
50 - 54	7,010	5,331	5,966	6,116	4,432	5,034	1,742	35,631	1,367,899,506	38,391
55 - 59	5,382	3,709	4,737	6,007	4,935	3,484	4,161	32,415	1,290,061,927	39,798
60 - 64	3,178	1,872	1,998	2,551	2,595	1,902	2,749	16,845	693,829,513	41,189
65 - 69	1,525	676	438	426	386	329	609	4,389	136,843,914	31,179
70 & Over	894	403	215	117	91	73	189	1,982	38,745,027	19,548
Total	71,465	38,786	29,570	36,930	23,498	13,911	9,609	223,769	$ 8,649,028,987	$ 38,652

The September 30, 2012 active counts include 7,901 people who elected not to continue future accruals (after the transition date of February 1, 2013) in the defined benefit plan as a result of the plan changes. UAAL contributions are expected to continue to be collected on the payroll of these members in the future.

ACTIVE AND INACTIVE MEMBERS REPORTED FOR VALUATION HISTORICAL COMPARISON

Valuation Date September 30	Number of Inactive Vested Members	Active Members					
				Average			
		Number	Reported Payroll[1]	Annual Pay	% Increase	Age	Years of Service
1993	*	296,585	$ 6,897,924	$ 23,258	7.5 %	42.2	9.8
1994	*	291,006	7,164,807	24,621	5.9	42.5	10.0
1995	*	294,911	7,564,876	25,651	4.2	43.4	10.1
1996	*	295,096	7,807,029	26,456	3.1	43.6	9.9
1997	*	295,691	8,027,450	27,148	2.6	43.6	10.0
1998	*	302,016	8,265,463	27,368	0.8	43.5	9.7
1999	*	309,324	8,643,718	27,944	2.1	43.6	9.5
2000	*	312,699	8,984,737	28,733	2.8	43.6	9.7
2001	*	318,538	9,264,183	29,083	1.2	43.6	9.6
2002	14,403	326,350	9,707,281	29,745	2.3	43.6	9.5
2003	14,247	326,938	10,043,862	30,721	3.3	43.8	9.7
2004	15,756	322,494	10,407,072	32,271	5.0	43.8	9.7
2005	16,806	316,151	10,205,972	32,282	0.0	43.7	9.7
2006	15,679	308,233	9,806,452	31,815	(1.4)	44.1	9.9
2007	14,999	295,984	9,851,471	33,284	4.6	44.5	10.3
2008	14,312	278,642	9,958,132	35,738	7.4	44.9	10.8
2009	14,454	268,208	9,883,674	36,851	3.1	45.4	11.4
2010	15,026	242,568	8,845,019	36,464	(1.1)	45.2	11.1
2011	15,090	236,660	9,155,691	38,687	6.1	45.3	11.3
2012 [2]	16,167	223,769	8,649,029	38,652	(0.1)	45.7	11.9

* *Not available.*

[1] *Reported payroll in thousands. Beginning with the September 30, 2006 valuation, the payroll is no longer adjusted, and the payroll is the sum of the actual pays reported for each active member.*

[2] *The September 30, 2012 active counts include 7,901 people who elected not to continue future accruals (after the transition date of February 1, 2013) in the defined benefit plan as a result of the plan changes. UAAL contributions are expected to continue to be collected on the payroll of these members in the future.*

SECTION E

METHODS AND ASSUMPTIONS

VALUATION METHODS

***Actuarial Cost Method* -** Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an Individual Entry-Age Actuarial Cost Method having the following characteristics:

(i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;

(ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains (losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

***Financing of Unfunded Actuarial Accrued Liabilities* -** Unfunded actuarial accrued liabilities (full funding credit if assets exceed liabilities) were amortized by level (principal and interest combined) percent-of-payroll contributions over a reasonable period of future years.

VALUATION METHODS

Present value of future reconciliation payments – Subsection 41(9) of the MPSERS statute provides for a process to reconcile actual employer contributions to the actuarially computed contribution requirements. In order to avoid duplication of the employer contributions, the present value of future reconciliation payments is subtracted from the unfunded actuarial accrued liability (UAAL) to determine the remaining UAAL contribution. It has been reported that the reconciliation process will cease beginning in fiscal year 2014. Please refer to page A-1.

Amortization of UAAL resulting from the Early Retirement Incentive (ERI) program of 2010 – It has been reported that 1.36% of payroll will be contributed beginning in fiscal year 2013 for a 10-year period to amortize the UAAL associated with the ERI program of 2010. In order to avoid duplication of the employer contributions, the present value of future ERI amortization payments is subtracted from the unfunded actuarial accrued liability (UAAL) to determine the remaining UAAL contribution. Please refer to page A-1.

Actuarial Value of System Assets - The actuarial value of assets recognizes assumed investment income fully each year. Differences between actual and assumed investment income are phased in over a closed five year period. During periods when investment performance exceeds the assumed rate, actuarial value of assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, actuarial value of assets will tend to be greater than market value. The actuarial value of assets was reset to market value as of September 30, 2006, with five-year smoothing restarted at that time. The actuarial value of assets is developed separately for the Non-Hybrid and Hybrid portions of the System. The total actuarial value of assets is the sum of these two components.

VALUATION ASSUMPTIONS

The rate of investment return was 8.0% a year, compounded annually net of investment and administrative expenses for the Non-Hybrid groups and 7.0% a year, compounded annually net of investment and administrative expenses for the Hybrid group (PPP).

The assumed real return is the rate of return in excess of wage inflation. Considering other assumptions used in the valuation, the 8.0% nominal rate translates to a net real return of 4.5% a year for the Non-Hybrid groups. Considering other assumptions used in the valuation, the 7.0% nominal rate translates to a net real return of 3.5% a year for the Hybrid group.

The rates of pay increase used for individual members are in accordance with the table below. This assumption is used to project a member's current pay to the pay upon which System benefits will be based. The current assumption was first used for the September 30, 2004 valuation of the System.

Sample Ages	Pay Increase Assumptions For an Individual Member: Merit & Seniority	Base (Economy)	Increase Next Year
20	12.4 %	3.5 %	15.9 %
25	8.8	3.5	12.3
30	5.2	3.5	8.7
35	3.7	3.5	7.2
40	2.6	3.5	6.1
45	1.7	3.5	5.2
50	0.8	3.5	4.3
55	0.3	3.5	3.8
60	0.0	3.5	3.5
65	0.0	3.5	3.5
Ref	269		

The charts shown in this section may include a reference number (for example, 269 is used above). These reference numbers are used by GRS to track and identify assumption tables.

VALUATION ASSUMPTIONS

The healthy life post-retirement mortality table used in this valuation of the System was the RP-2000 Female Combined Healthy Mortality Table, adjusted for mortality improvements to 2020 using projection scale AA. For men, 140% of the table rates for ages 0-79, 133% of the table rates for ages 80-84, and 121.8% of the table rates for ages over 84 were used. For women, 96% of the table rates were used. The final rates used includes no margin for future mortality improvement. This assumption was first used for the September 30, 2010 valuation of the System. Sample rates of mortality and years of life expectancy are shown below. This assumption is used to measure the probabilities of each benefit payment being made after retirement.

Sample Attained Ages	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	0.17 %	0.11 %	31.95	35.01
55	0.32	0.22	27.27	30.25
60	0.64	0.44	22.82	25.67
65	1.23	0.84	18.70	21.36
70	2.12	1.45	15.00	17.38
75	3.35	2.30	11.73	13.75
80	5.30	3.83	8.88	10.48
Ref:	779 x 1.00	455 x 0.96		

For active members, the probabilities of dying before retirement were based upon the RP-2000 Combined Healthy Mortality Table, adjusted for mortality improvements to 2020 using projection scale AA. For men, 101% of the male table rates were used. For women, 82% of the female table rates were used. This assumption was first used for the September 30, 2010 valuation of the System. Sample rates of mortality and years of life expectancy are shown on the following page.

VALUATION ASSUMPTIONS

Sample Attained Ages	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
20	0.02 %	0.01 %	61.77	66.00
25	0.03	0.01	56.85	61.03
30	0.04	0.02	51.94	56.08
35	0.07	0.03	47.07	51.14
40	0.09	0.04	42.25	46.23
45	0.12	0.07	37.45	41.34
50	0.15	0.10	32.68	36.49
55	0.25	0.19	27.96	31.70
60	0.49	0.37	23.39	27.08
65	0.97	0.72	19.09	22.70
Ref:	454 x 1.01	455 x 0.82		

Active member deaths are assumed to be non-duty related.

The disabled life mortality table used in this valuation was developed by the prior actuary pursuant to an experience study. Beginning with the September 30, 2010 valuation of the System, 110% of the table rates were used. For disabled retirees, the sample rates of mortality and years of life expectancy are shown below.

Sample Attained Ages	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	2.75 %	1.89 %	19.84	24.11
55	2.95	2.24	17.48	21.42
60	3.48	2.68	15.05	18.88
65	4.33	3.12	12.72	16.44
70	5.52	3.56	10.55	13.98
75	7.24	4.14	8.55	11.42
80	9.61	5.85	6.76	8.78
Ref:	476 x 1.10	477 x 1.10		

VALUATION ASSUMPTIONS

The rates of retirement used to measure the probability of eligible members retiring during the next year are shown below. These assumptions were first used for the September 30, 2010 valuation of the System.

A Basic member is eligible for normal retirement after attaining age 55 with 30 or more years of credited service, or after attaining age 60 with 10 or more years of credited service.

A MIP member is eligible for normal retirement after 30 years of service, or after attaining age 60 with 5 or more years of service.

A Basic or MIP member is eligible for early retirement after attaining age 55 with 15 but less than 30 years of credited service.

A Pension Plus member is eligible for normal retirement after attaining age 60 with 10 or more years of credited service. Pension Plus members are not eligible for early retirement.

Normal Retirement

Retirement	Percent of Eligible Members Retiring			
	Basic Members		MIP# and Pension Plus Members	
Ages	Teachers	Non-Teachers	Teachers	Non-Teachers
55	25 %	30 %		
56	21	26		
57	16	24		
58	16	22		
59	18	22		
60	18	16	23 %	23 %
61	20	21	20	19
62	26	29	22	24
63	26	29	22	27
64	23	24	22	21
65	22	24	22	23
66	28	35	25	26
67	24	28	22	20
68	21	23	22	20
69	21	25	15	18
70	21	25	15	18
71	21	25	15	18
72	21	25	15	18
73	21	25	15	18
74	21	25	15	18
75 & Over	100	100	100	100
Ref	1727	1728	1730	1732

 # Applies to MIP members with fewer than 30 years of service.

VALUATION ASSUMPTIONS

Normal Retirement

Years of Service	Percent of Eligible Members Retiring — MIP Members with 30+ Years of Service: Teachers	Non-Teachers
30	60 %	55 %
31	45	40
32	25	25
33	18	23
34	19	23
35	19	23
36	21	26
37	25	29
38	23	29
39	27	32
40	30	33
41	30	33
42	30	33
43	30	33
44	30	33
45	30	33
46	30	33
47	30	33
48	30	33
49	30	33
50	100	100
Ref	1731	1733

Early Retirement

Retirement Ages	Percent of Eligible Members Retiring: Basic Members	MIP Members
55	7.7 %	8.4 %
56	7.7	8.4
57	7.7	8.4
58	7.7	8.4
59	7.7	8.4
Ref	1729	1734

VALUATION ASSUMPTIONS

Rates of separation from active membership used in the valuation are shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment, and was first used for the September 30, 2010 valuation of the System.

Sample Ages	Years of Service	Percent Separating Within Next Year			
		Pay More Than $20,000		Pay Less Than $20,000	
		Teachers	Non-Teachers	Teachers	Non-Teachers
All	0	28.00 %	30.00 %	36.00 %	37.50 %
	1	12.50	13.00	22.00	22.50
	2	7.75	8.50	14.50	13.50
	3	6.20	6.80	13.50	11.00
	4	5.00	5.30	12.50	9.00
20	5 & over	3.70	5.00	12.50	9.00
25		3.70	4.70	12.50	9.00
30		3.28	3.90	12.50	8.10
35		2.52	2.96	11.00	6.90
40		1.90	2.24	8.80	5.60
45		1.46	1.85	7.40	4.70
50		1.27	1.45	6.40	4.20
55		1.25	1.25	6.00	4.00
60		1.25	1.25	6.00	4.00
Svc Ref		576	574	577	575
Age Ref		1083	1081	1084	1082

VALUATION ASSUMPTIONS

Rates of disability among active members used in the valuation are shown below, and were first used in the September 30, 2010 valuation of the System. Disabilities are assumed to be non-duty related.

Sample Ages	Percent Becoming Disabled Within Next Year
20	0.00 %
25	0.01
30	0.01
35	0.02
40	0.05
45	0.10
50	0.18
55	0.26
60	0.36
Ref.	393 x 0.80

Service Credit Accrual Rates: Members were assumed to accrue service credit each year as described in the table below:

	Assumed Average Service Credit Accrued Each Year
Teachers with Pay Over $20,000	0.95 years
Non-Teachers with Pay Over $20,000	0.95
Teachers with Pay Under $20,000	0.66
Non-Teachers with Pay Under $20,000	0.76

Unknown Data: Members with unknown gender were assumed to be female. Members with unknown dates of birth were assumed to have an entry-age equal to 35 for MIP/PPP and 31 for Basic members. Active members who were reported without any annual pay were assumed to have pay equal to the average pay of the corresponding active group.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Benefit Service	Exact fractional service is used to determine the amount of benefit payable.
Decrement Operation	Disability and withdrawal decrements do not operate during retirement eligibility.
Decrement Timing	Retirement decrements are assumed to occur on July 1. All other decrements are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Forfeitures	For vested separations from service, it is assumed that 0% of members separating will withdraw their contributions and forfeit an employer financed benefit. It was further assumed that the liability at termination is the greater of the vested deferred benefit (if any) or the member's accumulated contributions.
Incidence of Contributions	Contributions are assumed to be received continuously throughout the year.
Liability Adjustments	Inactive vested member liabilities were increased by 2% to reflect the value of the death benefit provision.
Marriage Assumption	75% of males and 65% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
Normal Form of Benefit	A straight life benefit is the normal form of benefit.
Pay Increase Timing	Pay increases were assumed to be at the beginning of the fiscal year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

SECTION F

PLAN PROVISIONS

PLAN PROVISIONS AS OF SEPTEMBER 30, 2012

Our actuarial valuation of the System is based on the present provisions of the Public School Employees' Retirement Act (Act 300 of 1980, as amended).

Regular Retirement (no reduction factor for age):

Eligibility – For Basic members, age 55 with 30 years credited service; or age 60 with 10 years credited service. For Member Investment Plan (MIP) members, any age with 30 years credited service; or age 60 with 10 years credited service; or age 60 with 5 years of credited service provided member worked through 60th birthday and has credited service in each of the last 5 years. For Pension Plus Plan (PPP) members, age 60 with 10 years of credited service.

Mandatory Retirement Age - None.

Transition Date – February 1, 2013.

Annual Amount – Credited Service as of the Transition Date times 1.5% times Final Average Compensation (FAC),

Plus

An amount determined by the member's election of Option 1, 2, 3 or 4 described below.

Option 1 – Credited Service after the Transition Date times 1.5% times FAC.

Option 2 – Credited Service after the Transition Date (until total service reaches 30 years) times 1.5% times FAC, PLUS Credited Service after the Transition Date and over 30 years times 1.25% times FAC.

Option 3 – Credited Service after the Transition Date times 1.25% times FAC.

Option 4 – None (Member will receive a benefit through a Defined Contribution plan).

Final Average Compensation (FAC) - Average of highest 60 consecutive months. (36 months for MIP members). FAC is calculated as of the last day worked unless the member elected Option 4, in which case FAC is calculated as of the Transition Date.

PLAN PROVISIONS AS OF SEPTEMBER 30, 2012

Early Retirement (age reduction factor used):

Eligibility - Age 55 with 15 or more years of credited service and earned credited service in each of the last 5 years. PPP members are not eligible for early retirement benefits.

Annual Amount - Regular retirement benefit, reduced by 1/2% for each month by which the commencement age is less than 60.

Deferred Retirement (vested benefit):

Eligibility - 10 years of credited service. Benefit commences at the time age qualification is met.

Annual Amount - Regular retirement benefit based on service and final average compensation at time of termination.

Duty Disability Retirement:

Eligibility - No age or service requirement; in receipt of workers' disability compensation.

Annual Amount - Computed as regular retirement benefit with minimum benefit based on 10 years credited service. Additional limitation such that disability benefits plus authorized outside earnings limited to 100% of final average compensation (increased by 2% each year retired).

Non-Duty Disability Retirement:

Eligibility - 10 years of credited service.

Annual Amount - Computed as regular retirement benefit based on credited service and final average compensation at time of disability. Additional limitation such that disability benefits plus authorized outside earnings limited to 100% of final average compensation (increased by 2% each year retired).

PLAN PROVISIONS AS OF SEPTEMBER 30, 2012

Duty Death Before Retirement:

Eligibility – No age or service requirement. Beneficiary is in receipt of workers' compensation. Also applies to "duty disability" retirees during first three years of disability.

Annual Amount – Spouse benefit computed as regular retirement benefit with minimum benefit based on 10 years of credited service, reduced for 100% Joint and Survivor election. If no surviving spouse, children under 18 share in benefit; if no spouse or children, a disabled and dependent parent is eligible.

Non-Duty Death Before Retirement:

Eligibility – For Basic members, 15 years of credited service, or age 60 and 10 years of credited service. For MIP members, 10 years of credited service, or age 60 and 5 years of credited service. For PPP members, 10 years of credited service, or age 60 and 10 years of credited service.

Annual Amount - Computed as regular retirement benefit, reduced in accordance with a 100% Joint and Survivor election, with payments commencing the first of month following death. For the beneficiary of a deferred member, benefit commences at time member would have attained the minimum age qualification.

Member Contributions before Transition Date (February 1, 2013):

Basic Participants – None.

MIP Participants hired before January 1, 1990 - 3.9% of pay.

MIP Participants hired on or after January 1, 1990 and before July 1, 2008 - 3.0% of first $5,000 of pay, plus 3.6% of next $10,000 of pay, plus 4.3% of pay in excess of $15,000.

MIP and PPP Participants hired on or after July 1, 2008 - 3.0% of first $5,000 of pay, plus 3.6% of next $10,000 of pay, plus 6.4% of pay in excess of $15,000.

PLAN PROVISIONS AS OF SEPTEMBER 30, 2012

Member Contributions on or after Transition Date (February 1, 2013):

Basic and MIP Members – Contributions depend on member election of Option 1, 2, or 3. Members electing Option 4 will not contribute to the Plan.

Option 1 – Basic Members – 4%
All MIP Members – 7%

Option 2 – Contribution as in Option 1 until member reaches 30 years of service. At 30 years of service, contribution reverts to pre-transition date level.

Option 3 – Post transition date contribution is the same as the pre-transition date contribution.

PPP Members – 3.0% of first $5,000 of pay, plus 3.6% of next $10,000 of pay, plus 6.4% of pay in excess of $15,000.

Post-Retirement Cost-of-Living Adjustments:

One-time upward adjustments have been made in 1972, 1974, 1976, and 1977 for members retired on or after July 1, 1956 and prior to July 1, 1976 who were eligible for Social Security benefits. For members who retired prior to July 1, 1956 and were not eligible for Social Security benefits based upon membership service, the minimum base pension was increased in 1965, 1971, 1972, 1974, and 1981 and in 1976 and 1977 one-time upward adjustment were made.

Beginning in 1983 some benefit recipients received an annual distribution of investment earnings in excess of 8% (supplemental payment). On January 1, 1986, all members who retired prior to January 1, 1986 were given a permanent 8% increase. On January 1, 1990 a one-time upward adjustment for members who retired prior to October 1, 1981 was made.

Currently members receive annual increases based on the following schedule:

Retired before January 1, 1987 - Greater of supplemental payment or automatic 3% increases.

Retired on or after January 1, 1987 under MIP - Automatic 3% increases only.

Retired on or after January 1, 1987 under Basic plan - Supplemental payment only.

Retired under PPP – No increases.

PLAN PROVISIONS AS OF SEPTEMBER 30, 2012

Member Contributions Attributable to the Retiree Health Plan:

Under Public Act 300 of 2012, members were given the choice between i. and ii. below:

i. Maintaining eligibility for premium subsidy retiree medical coverage, and contributing 3% of their compensation while still working, or

ii. Entering the Personal Healthcare Fund (PHF).

Members not making an election will default into the premium subsidy arrangement.

If a member who elected the subsidy terminates prior to becoming eligible for the subsidy, dies before the total value of the subsidy received equals the total value of contributions made, or retires and declines coverage, the member or beneficiary may request a refund of unused funds. Refunds of member contributions to the healthcare funding account are issued as a supplemental pension benefit (payable at age 60 and payable from the pension plan) paid out over a 60 month period.

SECTION G

GLOSSARY

GLOSSARY

Actuarial Accrued Liability The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Accrued Service The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain/(Loss) A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

GLOSSARY

Normal Cost	The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.
Reserve Account	An account used to indicate that funds have been set aside for a specific purpose and is not generally available for other uses.
Unfunded Actuarial Accrued Liability	The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."
Valuation Assets	The value of current plan assets recognized for valuation purposes. Generally based on market value plus a portion of unrealized appreciation or depreciation.