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West Virginia Municipal Police and Fire Retirement System

Actuarial Valuation Report for the Fiscal Year Commencing

July 1, 2010

Prepared by:
Actuarial Staff
of the
West Virginia
Consolidated Public Retirement Board

December 2010

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Actuarial Review and Certification

This Report presents the results of an Actuarial Valuation of the West Virginia Municipal Police and Fire Retirement System (MPFRS) as of July 1, 2010. The purposes of the Actuarial Valuation are to determine the actuarial liabilities for the Plan and to determine if the expected contributions will be sufficient to meet or exceed the Plan's long term funding policy.

MPFRS was first effective January 1, 2010. It did not have any members nor assets as of its effective date and therefore an actuarial valuation was not completed. Six members joined the plan during April of 2010 resulting in limited experience being reflected in the July 1, 2010 Actuarial Valuation.

On the July 1, 2010 Actuarial Valuation date, the Actuarial Accrued Liability (AAL) attributable to past years of employment totaled $3,538. Assets in the MPFRS trust fund had a market value of $2,821. The Unfunded Actuarial Accrued Liability (UAAL) was $717. The resulting funded percentage for MPFRS is 79.7%.

The funding policy for MPFRS is to contribute at least the employer Normal Cost plus the amount necessary to fund the UAAL over 30 years from July 1, 2010. Funding payments are calculated as level dollar amortization payments. The funding policy is consistent with the funding policy for the Emergency Medical Services Retirement System. The actuarially required contribution (ARC) under the funding policy for FY2011 is $3,492. The total expected employer contribution at the current 8.5% of payroll contribution rate is $17,699. A change in the employer contribution rate is not recommended since the low number of members is expected to yield volatile results. Benefits, except for a return of member contributions, are not payable prior to January 1, 2013. Membership must reach 100 by January 1, 2014 for this Plan to continue.

The Actuary hereby certifies that this Actuarial Valuation Report was completed in compliance with actuarial standards applicable to the purposes of the Actuarial Valuation. The Actuary further certifies that the actuarial methods and assumptions applied in completing the Actuarial Valuation as reasonable and appropriate for the purposes stated herein.

Respectfully Submitted:

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Summary of the Valuation

This July 1, 2010 Actuarial Valuation Report for MPFRS presents an actuarial analysis of the financial position of the Plan for FY2011. It includes a determination of the funded position of the Plan as of the valuation date under the Entry Age Cost Method with Aggregate Normal Cost. The result is applied to prepare disclosure for MPFRS under GASB 25 & 27. It further determines if expected member and employer contributions will be sufficient to meet the ARC under the funding policy for MPFRS. The funding policy is to contribute the Normal Cost plus level dollar amortization payments to fund the UAAL through FY2040 (30 years from July 1, 2010).

The July 1, 2010 Actuarial Valuation for MPFRS was completed in-house by the actuarial staff of the West Virginia Consolidated Public Retirement Board (CPRB). ProVal actuarial software is used by the CPRB actuarial staff to complete the actuarial calculations and is leased from Winklevoss Technologies. To assure the integrity of the actuarial valuation, the ProVal programming was reviewed by the technical actuarial staff at Buck Consultants who concurred with the CPRB staff programming of ProVal for the MPFRS valuation. Buck Consultants use ProVal software for the valuations they complete and remain available for support and to discuss any issues which might arise in future years.

The detailed financial results are found in the tables following this summary. The information contained in the tables is briefly highlighted as follows:

Table 1, Development of Valuation Results – Provides the details of the actuarially determined financial position of the Plan on July 1, 2010, the initial valuation for the Plan. The AAL attributable to prior years of employment totaled $3,538. The market value of Trust Fund assets funds $2,821 of the AAL for a funding percentage of 79.7%. The UAAL of $717 reflects initial unfunded liabilities under MPFRS. The employer Normal Cost is 1.59% of payroll. With the employer contribution rate set at 8.5%, the remaining 6.82% of payroll can be used to fund the UAAL which is targeted as level dollar amortization through FY2040. For FY2011, the Actuarial Required Contribution is $3,492. The expected employer contribution at 8.5% of pay is projected to be $17,699 and is sufficient to fund the ARC with a margin of $14,207. This additional funding is expected to be required for MPFRS to maintain an actuarially sound funded level due to the volatility of future results expected due to the small number of active members. Member contributions of 8.5% of payroll ($17,699 of contributions for FY2011) are applied directly to the pay the member portion of the Normal Cost.

Table 2, Projection of Unfunded Actuarial Accrued Liability Amortization – This table projects the funding progress of the UAAL under the 30 year amortization schedule with level dollar funding policy through FY 2040. The Scheduled UAAL Amortization Payment is $59 annually. The table shows that required employer Normal Cost contributions will increase in future years based on the assumed payroll growth rate of 3.0%. All member contributions are applied to fund the members' portion of the annual Normal Cost.

Table 3, Estimated Progress of Pension Plan from Fiscal Year 2011 through 2030 – The table details the expected cash flow for MPFRS for the next 20 years through FY2030. Contributions include expected member and employer contributions each year. Projected benefit payouts are based on the current membership with projections under the actuarial assumptions through FY2030. This tends to understate benefit payments somewhat in later years as newly hired members during the period start becoming eligible for benefits near the end of the projection period as well as the costs of disability and early termination benefits for new hires during the projection period. It is noted that the schedule assumes that the Plan will continue past January 1, 2014 which would require additional legislation for results as projected.

Table 4, GASB-25 and GASB-27 Supplementary Disclosure Information as of July 1, 2010 – Information as required for governmental plan disclosure under GASB-25 and GASB-27 is provided in this table. The information was prepared in compliance with the GASB requirements. The information provides a funded position history for EMSRS at the initial valuation on July 1, 2010. A summary of the key inflationary assumptions employed in the Actuarial Valuation is also shown. It should be noted that the July 1, 2010 funded percentage of 79.7% reflects partial year service and contributions for 6 newly hired members and does not represent a basis for long term actuarially expected results.

Table 5, Valuation Assets as of July 1, 2010 – A statement of the market value of assets is shown. Assets are valued at market value as reported by the West Virginia Investment Management Board (IMB). The IMB is responsible for the investment of all Trust Fund assets for the Plan. There are no initial assets in that all members are new hires only without pre-hire service credits. The return for June 30, 2010 reflects short term money market investments only and not the IMB expected 7.5% return. Assets will be invested once a sufficient asset base is achieved due to the accumulation of future contributions.

Table 6, Statement of Changes in Net Assets for Benefits For Year Ended June 30, 2010 – The reconciliation of Trust Fund assets for the year ending on the valuation date is presented in this table. It reflects the Trust Fund transactions from the effective date of January 1, 2010 through June 30, 2010. The Table also provides the estimated IMB return rate for the year of 0.02% and the calculated actuarial average weighted return rate of 0.07%. This initial return is based on investment in short term fixed investments and not standard IMB investment allocation.

Table 7, Reconciliation of Plan Members as of July 1, 2010 – Plan membership for actuarial valuation purposes is taken as a "snap shot" on the actuarial valuation date. The membership starts at zero on the January 1, 2010 effective date. Active membership grew from 0 members to 6 active members. There were no inactive members.

Table 8, Number and Total Annual Compensation of Active Members at July 1, 2010 – This table provides an age and service distribution for the 6 active members. The annual actuarial valuation compensation for each age/service cell in the table is shown along with the number of members in each cell. This table is useful in visually analyzing the active membership groups for items such as vesting and retirement eligibility. Compensation shown is the reported June 2010 monthly compensation rate annualized to 12 full months.

Table 9, Distribution of the Number and Average Annual Benefits of Retired Members as of July 1, 2010 – This table provides an age and type of retirement breakdown for those receiving monthly benefits from EMSRS. There were no retired members on the valuation date. Regular and Disability retirements are currently restricted and not permitted before January 1, 2013.

Table 10, Distribution of the Number and Average Annual Benefits of Vested Terminated Members as of July 1, 2010 – This table provides an age breakdown for terminated members eligible for deferred vested benefits when they reach retirement age. These members would be those that elected to maintain participation in MPFRS instead of withdrawing their member contributions in anticipation of re-employment with a participating employer. They could also elect to remain inactive until eligibility for retirement benefits is obtained. There are currently no members in this category.

Following the tables are three summary sections. The first section provides an overview of the MPFRS benefits provisions that were taken into account in the Actuarial Valuation. This provides a quick reference of the benefit provisions as included in the Actuarial Valuation but is not intended to be a comprehensive summary of all MPFRS benefit provisions. Actual MPFRS Plan provisions are contained in State Code. The second section provides a brief description of the actuarial methods applied in completing the Actuarial Valuation. These methods are fully consistent with other defined benefit plans administered by CPRB. The third section describes the actuarial assumptions applied in projecting the future behavior of MPFRS members and projecting the expected benefit payments in future years. These actuarial assumptions are those applied by the Board Actuary during the initial study from which MPFRS was established. Due to the fact that MPFRS is subject to possible merger into EMSRS if minimum participation levels are not reached by January 1, 2014, these assumptions are consistent with the current EMSRS assumptions. The Board Actuary believes they provide a reasonable basis for the Actuarial Valuation of MPFRS. Experience based assumptions cannot be developed through a full experience study until several years of experience data can be gathered. It should be noted that since MPFRS is a "new" plan, experience for an experience study must be built up over the first years of operations.

The interest rate assumption is 7.5%, the rate adopted by the Board for all other defined benefit plans administered by the Board.

Table 1
Development of Valuation Results

	July 1, 2010	January 1, 2010
1. Member Counts		
a. Actives	6	0
b. Regular and Disability Retirees	0	0
c. Vested Terminated	0	0
d. Non-Vested Withdrawals Pending	0	0
e. Total Members	6	0
2. Present Value of Future Benefits		
a. Actives	$175,276	$0
b. Regular Retirees	$0	$0
c. Disabled Retirees	$0	$0
d. Vested Terminated	$0	$0
e. Non-Vested Withdrawals Pending	$0	$0
f. Total PV Future Benefits	$175,276	$0
3. Actuarial Accrued Liability	$3,538	$0
4. Assets (Market Value)	$2,821	$0
5. Unfunded Actuarial Accrued Liability	$717	$0
6. Annual Normal Cost Percentage Rate		
a. Present Value of Future Normal Cost	$171,738	0
b. Present Value of Future Compensation	$1,701,943	0
c. Plan Normal Cost Percentage Rate	10.09%	N/A
d. Member Contribution Rate	8.50%	8.50%
e. Employer Normal Cost Rate	1.59%	N/A
f. Valuation Compensation FY2011 / (FY2010)	$208,219	N/A
7. Calculated Employer Cost FY2011 / (FY2010)		
a. Amortization Payment on UAAL MOY (30 years)	$59	$0
b. Employer Normal Cost MOY	$3,433	$0
c. Total Employer Cost MOY	$3,492	$0
d. Employer Cost as Percent of Compensation	1.68%	0.00%
8. Expected Employer Contributions FY2011 / (FY2010)		
a. Employer Contribution Rate	8.50%	8.50%
b. Employer Contribution MOY	$17,699	$0
c. Additional Required Contribution	($14,207)	$0
d. Additional Percent of Payroll Required	-6.82%	0.00%

Table 2
Projection of Unfunded Actuarial Accrued Liability Amortization

Fiscal Year	Unfunded Actuarial Accrued Liability (BOY)	Employer Normal Cost (MOY)	Scheduled UAAL Amortization Payments (MOY)	Total Employer Contributions (MOY)	Unfunded Actuarial Accrued Liability (EOY)
2011	$717	$3,433	$59	$3,492	$710
2012	$710	$3,540	$59	$3,599	$700
2013	$700	$3,650	$59	$3,709	$690
2014	$690	$3,760	$59	$3,819	$680
2015	$680	$3,870	$59	$3,929	$670
2016	$670	$3,990	$59	$4,049	$660
2017	$660	$4,110	$59	$4,169	$650
2018	$650	$4,230	$59	$4,289	$640
2019	$640	$4,360	$59	$4,419	$630
2020	$630	$4,490	$59	$4,549	$620
2021	$620	$4,620	$59	$4,679	$610
2022	$610	$4,760	$59	$4,819	$590
2023	$590	$4,900	$59	$4,959	$570
2024	$570	$5,050	$59	$5,109	$550
2025	$550	$5,200	$59	$5,259	$530
2026	$530	$5,360	$59	$5,419	$510
2027	$510	$5,520	$59	$5,579	$490
2028	$490	$5,690	$59	$5,749	$470
2029	$470	$5,860	$59	$5,919	$440
2030	$440	$6,040	$59	$6,099	$410
2031	$410	$6,220	$59	$6,279	$380
2032	$380	$6,410	$59	$6,469	$350
2033	$350	$6,600	$59	$6,659	$320
2034	$320	$6,800	$59	$6,859	$280
2035	$280	$7,000	$59	$7,059	$240
2036	$240	$7,210	$59	$7,269	$200
2037	$200	$7,430	$59	$7,489	$150
2038	$150	$7,650	$59	$7,709	$100
2039	$100	$7,880	$59	$7,939	$50
2040	$50	$8,120	$59	$8,179	$0

Employer Normal Cost Increase Factor Assumed to be 3.0% Annually.

Table 3
Estimated Progress of Pension Plan from Fiscal Year 2011 through 2030

Fiscal Year	Trust Fund Market Value of Assets (BOY)	Member and Employer Contributions (MOY)	Projected Benefit Related Payments (MOY)	Investment Income (EOY)	Trust Fund Market Value of Assets (EOY)
2011	$2,821	$35,400	$1,300	$1,500	$38,420
2012	$38,420	$36,500	$2,900	$4,100	$76,120
2013	$76,120	$37,600	$4,200	$6,900	$116,420
2014	$116,420	$38,700	$5,300	$10,000	$159,820
2015	$159,820	$39,900	$6,200	$13,200	$206,720
2016	$206,720	$41,100	$500	$17,000	$264,320
2017	$264,320	$42,300	$700	$21,400	$327,320
2018	$327,320	$43,600	$800	$26,100	$396,220
2019	$396,220	$44,900	$1,000	$31,300	$471,420
2020	$471,420	$46,200	$1,100	$37,000	$553,520
2021	$553,520	$47,600	$1,300	$43,200	$643,020
2022	$643,020	$49,000	$1,500	$50,000	$740,520
2023	$740,520	$50,500	$1,800	$57,300	$846,520
2024	$846,520	$52,000	$2,100	$65,300	$961,720
2025	$961,720	$53,600	$2,400	$74,000	$1,086,920
2026	$1,086,920	$55,200	$2,800	$83,400	$1,222,720
2027	$1,222,720	$56,900	$3,200	$93,700	$1,370,120
2028	$1,370,120	$58,600	$3,700	$104,800	$1,529,820
2029	$1,529,820	$60,400	$5,400	$116,800	$1,701,620
2030	$1,701,620	$62,200	$10,200	$129,500	$1,883,120

1 - Assumes Member contribution rate of 8.5% and Employer contribution rate of 8.5% throughout projection period.
2 - Total payroll on which Member and Employer contributions are paid are assumed to increase at a net 3.0% annually.
3 - Distributions through January 1, 2013 reflect terminated member contribution withdrawals only.
4 - Benefit related payments commencing in FY 2014 include all retirement, disability, survivor, death and withdrawal paym for members in the July 1, 2010 actuarial valuation. They do not anticipate new membership first entering after that dat
5 - The 2010 valuation includes only 6 active members resulting in a high rate of variance from the projected amounts.

Table 4
GASB-25 and GASB-27 Supplementary Disclosure Information as of July 1, 2010

Government Accounting Standards Board Statements 25 and 27 set forth certain items of required supplementary information to be disclosed in the financial statements of the System and the employer(s). The following information is intended to be used for this purpose in conjunction with other information prepared by the auditor.

1. Number of Members as of July 1, 2010.

Group	7/1/2010	7/1/2009
a. Regular and disabled retirees and beneficiaries currently receiving benefits	0	0
b. Terminated employees entitled to benefits but not yet receiving payments	0	0
c. Terminated employees entitled to a return of employee contributions	0	0
d. Active members vested in Plan benefits	0	0
e. Active members not vested in Plan benefits	6	0
f. Total Plan membership	6	0

2. Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Entry Age Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b-a)/(c)
7/1/2010	$2,821	$3,538	$717	79.7%	$208,219	0.3%

3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at July 1, 2010. Additional information follows:

Valuation date	July 1, 2010
Actuarial cost method	Entry Age Normal w/ Aggregate Normal Cost Level Percent
Amortization method	Level dollar amortization over funding period.
Remaining amortization period	30 Years from July 1, 2010
Actuarial assumptions:	
Investment rate of return	7.5% annual effective rate
Projected salary increases	By age from 5.0% at age 30 declining to 3.5% at age 65.
Inflation rate	3.0% annual underlying inflation

Table 5
Valuation Assets as of July 1, 2010

	June 30, 2010	January 1, 2010
Assets		
Cash	$0	$0
Investments at Fair Value	$2,821	$0
Contributions Receivable	$0	$0
Prepaid Expenses	$0	$0
Total Assets	$2,821	$0
Liabilities		
Accrued Expenses and Payables	$0	$0
Net Assets for Pension Benefits	$2,821	$0
Audit Adjustment		
Post Valuation Audit Adjustment	$0	$0
Net Audited Assets for Pension Benefits	$2,821	$0

Table 6
Statement of Changes in Net Assets for Benefits for Year Ended June 30, 2010

Net Assets Beginning of Year		$0
Additions		
Contributions		
Member	$1,410	
Employer	$1,410	
Other	$0	
Subtotal		$2,820
Net Appreciation Fair Value		$1
Other Income		$0
Annuity Payable		$0
Total Additions		$2,821
Deductions and Transfers		
Benefit Expense	$0	
Refunds of Contributions	$0	
Administrative Expenses	$0	
Transfers (to)/from Plan	$0	
Total		$0
Net Increase		$2,821
Net Assets for Pension Benefits - EOY		$2,821
Actuarial Net Rate of Return		0.07%
Return Rate per IMB		0.02%

Table 7

Reconciliation of Plan Members as of July 1, 2010

	Actives	Non Vested Terminations	Vested Terminations	Retirees Disabilities Beneficiaries	Total Members
Census Last Year	0	0	0	0	0
New Entrants	6				6
Return to Active Status					0
Retired					0
Died					0
Terminated - Vested					0
Terminated - Non Vested					0
Terminated - Withdrawn					0
New Beneficiaries					0
QDRO's					0
Adjustments					0
Census This Year	6	0	0	0	6

Table 8

Number and Total Annual Compensation for Active Members at July 1, 2010

Attained Age	Years of Credited Service										Totals
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40&OVER	
	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay	Number & Total Pay
Under 25											0 $0
25 to 29	3 $101,926										3 $101,926
30 to 34	3 $96,530										3 $96,530
35 to 39											0 $0
40 to 44											0 $0
45 to 49											0 $0
50 to 54											0 $0
55 to 59											0 $0
60 to 64											0 $0
65 & Over											0 $0
Totals	6 $198,456	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	6 $198,456

Note: Pay is annualized pay for June 2010.

Table 9

Distribution of the Number and Average Annual Benefits of Retired Members as of July 1, 2010

	Regular Retirees and Beneficiaries *			Disabled Retirees			Total Receiving Retiree Benefits		
Current Age	Number	Average Age	Average Annual Benefit	Number	Average Age	Average Annual Benefit	Number	Average Age	Average Annual Benefit
Under 30									
30 to 34									
35 to 39									
40 to 44									
45 to 49									
50 to 54									
55 to 59									
60 to 64									
65 to 69									
70 to 74									
75 to 79									
80 to 84									
85 to 89									
90 to 94									
95 & Over									
Totals	0	0	$0	0	0	$0	0	0	$0
Total Annual Benefits			**$0**			**$0**			**$0**

* Regular retirements are first allowed beginning January 1, 2013.

Table 10

Distribution of the Number and Average Annual Benefits of Vested Terminated Members as of July 1, 2010

Terminated Members Entitled to Deferred Benefits			
Current Age	Number	Average Age	Average Annual Benefit
Under 30			
30 to 34			
35 to 39			
40 to 44			
45 to 49			
50 to 54			
55 to 59			
60 to 64			
65 to 69			
70 to 74			
75 to 79			
80 to 84			
85 to 89			
90 to 94			
95 & Over			
Totals	0	0	$0

Total Annual Benefits $0

Summary of the Benefit Provisions of the Plan

Definitions

1. **Plan:** West Virginia Municipal Police and Fire Retirement System (MPFRS) as set forth under West Virginia Code section 8-22A originally effective January 1, 2010 and as may be amended from time to time.

2. **Membership:** Anyone first employed by any participating employer on or after the effective date of the Plan and the participating employers Plan joining date. Anyone who was employed by any participating employer before the effective date of this Plan is not eligible to participate in this Plan regardless of any termination and rehire. Service due to any other employment in any other public plan shall not be credited under this Plan.

3. **Average Compensation:** Average of the highest five consecutive plan years of compensation received during the last ten years of employment.

4. **Service:** Service in the year of hire and the year of termination of employment shall be credited at one-twelfth of a year for each month in such year that at least one hour was worked. In all completed years of employment a member shall be credited with one year of service upon completing 1,500 or more hours of employment during such year. A partial year credit shall be granted to a member working at least 500 but less than 1,500 hours.

5. **Disability Service:** For members who have their benefit recalculated at age 60 for non duty disability or age 65 for duty disability retirement, the recalculation shall credit half time service during the period which the member received disability retirement payments prior to the recalculation date.

6. **Military Service:** A retiring member may claim up to two years of qualified military service for any period of service occurring prior to or during MPFRS covered employment. Such military service may not be credited under any other governmental or military plan. One additional year of military service may be purchased by the member by paying the "actuarial reserve" for such year of service.

7. **Cashed Out and Reinstated Service:** A member who cashed out their member contributions at a prior termination of employment shall not receive any credits for service during the prior employment period. A member who is rehired may reinstate such service credits by repayment of the prior cash out with interest.

Contributions

1. **Member Contributions:** Members contribute 8.5% of their gross compensation to MPFRS through payroll deduction by their employer. Members are fully vested in the member contribution account which is credited with interest at a rate of 4%. If MPFRS has a funding percentage of less than 70% on July 1, 2014, the CPRB Board may temporarily raise the member contribution rate to 10.5% until a future valuation demonstrates that a 75% funded level has been obtained.

2. **Employer Contributions:** Each local employer contributes 8.5% of members' gross compensation to MPFRS each payroll period. The CPRB Board may change the contribution percentage up to a rate of 10.5% if deemed appropriate for the long term funding requirements of the Plan. The CPRB Board shall never set the Employer Contribution rate lower than the Member Contribution rate.

Normal Retirement Benefits

1. **Eligibility for Normal Retirement:** Regular retirement shall not be available under MPFRS until on and after January 1, 2013. Thereafter, a member may retire with unreduced benefits under MPFRS upon attaining any of the following eligibility requirements:
   a. Retirement from active employment following the attainment of age 50 and a total of age plus years of service of 70 or more.
   b. Retirement from active employment following the attainment of age 60 and completion of 10 or more years of service.
   c. From active employment or deferred termination with vested benefits upon attainment of age 50 and 20 years of service or age 62 and 5 years of service.

2. **Normal Retirement Benefit:** A monthly benefit equal to one-twelfth of the annual benefit calculated as:
    a. 2.6% of Average Compensation for each of the first 20 years of service credit; plus,
    b. 2.0% of Average Compensation for years 21 through 25, if any; plus,
    c. 1.0% of Average Compensation for years 26 through 30, if any.
    d. Maximum benefit of 67.0% of Average Compensation.

3. **Normal Form of Benefit:** A monthly benefit payable for the life of the member. If the member dies prior to receiving their full member contribution account balance at retirement, the remainder of the member contribution account balance shall be payable as a death benefit.

4. **Optional Benefit Forms:** A member may elect to receive benefits under one of the optional forms available under MPFRS. All optional forms are calculated so that the payments under the optional form have the same actuarial present value as the normal retirement benefit for the life of the member. If not the spouse of the member, the elected beneficiary must be a natural person with an insurable interest in the member.
    a. A reduced monthly benefit for the life of the member with a continuation percentage to the beneficiary selected by the member following the death of the member. The continuation percentage to the beneficiary of 50%, 66.67%, 75% or 100% is selected by the member at retirement and is payable for the life of the beneficiary.
    b. A reduced monthly benefit payable for the life of the member. Upon the death of the member prior to receiving 120 monthly benefit payments, the remainder of the 120 payments shall be payable to the beneficiary of or the estate of the member.

Deferred Vested Benefits

1. **Eligibility for Deferred Vested Benefit:** A member who terminates employment after completing five or more years of service but prior to attaining eligibility for Normal retirement shall be entitled to a Deferred Vested Benefit.

2. **Amount of Deferred Vested Benefit:** A Deferred Vested Benefit in the amount of the Normal Retirement Benefit as of the date of termination of employment is payable starting at age 62. A member with 20 or more years may commence benefits at age 50.

Disability Benefits

1. **Eligibility for Disability Benefit:** A member who becomes unable to perform any substantial gainful employment shall be considered disabled upon the concurrence of a medical review. If the member is found to be medically unable to perform any gainful employment, the member shall be eligible for Disability Retirement benefits.

2. **Duty Related Disability Benefits:** A member who becomes disabled due to injuries which are duty related shall be eligible for Duty Disability Retirement. A monthly disability benefit equal to 90% of current compensation prior to disability is payable prior to age 65. At age 65, the benefit shall be recalculated under the Normal Retirement Benefit provisions taking into account final average pay and service prior to disability plus Disability Service credits while receiving disability benefits prior to age 65.

3. **Non-Duty Related Disability Benefits:** A member who becomes disabled due to injuries not duty related shall be eligible for a Non-duty Disability Retirement. A monthly disability benefit equal to 66.67% of current compensation prior to disability payable through the attainment of age 60. At age 60 the benefit shall be recalculated under the Normal Retirement Benefit provisions taking into account final average pay and service prior to disability plus Disability Service credits while receiving disability benefits prior to age 60.

Pre-retirement Death Benefits

1. **Eligibility:** The Surviving Spouse of an actively employed member who dies after completing 10 or more years of service shall be eligible for a death benefit. If the member's death is duty related, the 10 year requirement does not apply. If a member is receiving Duty Disability Retirement benefits and dies prior to recalculation at age 65, a duty death benefit shall be payable to the Surviving Spouse at death.

2. **Duty Related Death Benefit:** Payable if the member's death is from a duty related cause.
   a. **Surviving Spouse at Death:** 66.67% of annual pay plus $100 per month for each dependent child. If actively employed and eligible for Normal Retirement Benefit at death, if greater, the continuation under a 100% Joint and Survivor option based on retirement at death shall be payable.
   b. **Children at Death:** If no Surviving Spouse, then each dependent child receives a pro-rata portion of what the death benefit to the Spouse would have been.

3. **Non-duty Death Benefit:** Payable if the member's death is not duty related.
   a. **Surviving Spouse at Death:** 50% of annual pay plus $100 per month for each dependent child. If actively employed and eligible for a Normal Retirement Benefit at death, if greater, the continuation under a 100% Joint and Survivor option based on retirement at death.
   b. **Children at Death:** If no Surviving Spouse, then each dependent child receives a pro-rata portion of what the death benefit to the Spouse would have been.

4. **Burial Benefit:** Upon death that is duty related, a $5,000 lump sum Burial Benefit shall be payable to the surviving spouse or other named beneficiary.

Scholarship Benefit

1. **Eligibility:** Dependent child of a member for which Duty Death Benefits are being paid on behalf of the dependent child.
2. **Scholarship Amount:** Application may be made for a scholarship not to exceed $6,000 annually for a West Virginia college or university subject to the approval of the Consolidated Public Retirement Board.

Summary of the Valuation Actuarial Methods

Actuarial Valuation Date

The initial actuarial valuation was completed on July 1, 2010, the first fiscal year with active members following the January 1, 2010 effective date. Subsequent valuations are completed each July 1. Actuarial calculations verify the adequacy of the funding through employer and member contribution for the fiscal year corresponding to the Plan year.

Actuarial Cost Method

The valuation is completed applying the Entry Age Normal Cost Method with Aggregate Normal Cost determination. The Actuarial Accrued Liability and the Normal Cost are determined on a level percentage of aggregate expected future payroll.

Under the method, the Actuarial Accrued Liability is determined on an individual basis as a level percentage of expected compensation for each member. Inactive liabilities are valued on an accrued benefit basis.

The Total Normal Cost percentage of payroll requirement is calculated by dividing the excess of the Actuarial Present Value of Future benefits over the Actuarial Accrued Liability on an aggregate basis by the aggregate Present Value of Future Compensation for all active members. The Employer Normal Cost Percentage is calculated by subtracting the member contribution rate from the Total Normal Cost Percentage. The Employer Normal Cost is the Employer Normal Cost Percentage multiplied by the expected payroll for the valuation year.

Asset Valuation Method

Trust Fund assets are valued at the reported market value of assets reported by the Investment Management Board for the Trust Fund as of the actuarial valuation date. The market value includes accrued amounts as reflected in the annual accounting for the Trust Fund and included in the CPRB annual report.

Amortization Method for Funding

The funding target (the ARC) for MPFRS is equal to the Employer Normal Cost plus amortization of the UAAL. The initial UAAL and subsequent experience through June 30 2030 is to be fully amortized over 30 years from July 1, 2010 through June 30, 2040. Amortization payments are calculated as a level dollar amount each year over the remaining 30 year period. Experience on and after June 30, 2030 will be amortized as a separate amortization line item over 10 years from its establishment.

Contributions in excess of the ARC, if any, shall be applied to improve the funded percentage of MPFRS until an actuarially acceptable funding level has been attained.

Summary of the Valuation Actuarial Assumptions

Interest Return and Discount Rate

The interest rate assumption is a return rate of 7.50% annually, net of investment and administrative expenses. This rate is applied for both the net interest return expected to be earned on Trust Fund assets and the discount rate on expected future benefit payments.

Healthy Life Mortality Rates

Active, regular retiree and beneficiary members' mortality is the 1983 Group Annuity Mortality Table with separate rates for males and females.

Disability Retirees Mortality Rates

Members receiving disability retirement benefits mortality is the 1983 Group Annuity Mortality Table with separate rates for males and females, set forward eight years in recognition of increased mortality due to disability.

Salary Scale

Annual salary increase factors are assumed by age on a unisex basis as follows:

Age	Rate	Age	Rate	Age	Rate	Age	Rate
Under 31	1.0500						
31	1.0490	41	1.0420	51	1.0395	61	1.0370
32	1.0480	42	1.0415	52	1.0390	62	1.0365
33	1.0470	43	1.0410	53	1.0385	63	1.0360
34	1.0460	44	1.0405	54	1.0380	64	1.0355
35	1.0450	45	1.0400	55	1.0375	65	1.0350
36	1.0445	46	1.0400	56	1.0375	Over 65	1.0350
37	1.0440	47	1.0400	57	1.0375		
38	1.0435	48	1.0400	58	1.0375		
39	1.0430	49	1.0400	59	1.0375		
40	1.0425	50	1.0400	60	1.0375		

Payroll Growth Rate

Total annual payroll for the active membership is assumed to increase at 3.0% annually. This growth rate is applied in certain projections contained in the actuarial valuation report tables. The rate does not impact MPFRS liabilities nor the ARC. The growth rate was set based on current limited employer participation in MPFRS. The growth rate will need to be increased if additional employers begin participating in MPFRS.

Withdrawal Rates

Withdrawal rates predict termination of employment prior to unreduced retirement eligibility. The unisex rates by age are:

Age	Rate	Age	Rate	Age	Rate	Age	Rate
20	.1500	30	.1050	40	.0750	50	.0500
21	.1500	31	.1000	41	.0725	51	.0475
22	.1450	32	.0950	42	.0700	52	.0450
23	.1400	33	.0900	43	.0675	53	.0425
24	.1350	34	.0850	44	.0650	54	.0400
25	.1300	35	.0800	45	.0625	55	.0000
26	.1250	36	.0790	46	.0600		
27	.1200	37	.0780	47	.0575		
28	.1150	38	.0770	48	.0550		
29	.1100	39	.0760	49	.0525		

Disability Rates

Disability rates predict an active member becoming disabled prior to unreduced retirement eligibility. The rates by age and sex are:

Age	Males	Females	Age	Males	Females
20	0.00010	0.00010			
21	0.00012	0.00018	36	0.00078	0.00110
22	0.00014	0.00026	37	0.00096	0.00120
23	0.00016	0.00034	38	0.00114	0.00130
24	0.00018	0.00042	39	0.00132	0.00140
25	0.00020	0.00050	40	0.00150	0.00150

Disability Rates - continued

Age	Males	Females	Age	Males	Females
26	0.00024	0.00056	41	0.00190	0.00160
27	0.00028	0.00062	42	0.00230	0.00170
28	0.00032	0.00068	43	0.00270	0.00180
29	0.00036	0.00074	44	0.00310	0.00190
30	0.00040	0.00080	45	0.00350	0.00200
31	0.00044	0.00084	46	0.00410	0.00220
32	0.00048	0.00088	47	0.00470	0.00240
33	0.00052	0.00092	48	0.00530	0.00260
34	0.00056	0.00096	49	0.00590	0.00280
35	0.00060	0.00100	50	0.00650	0.00300
			51+	0.00850	0.00650

It is assumed that members eligible for unreduced retirement will elect retirement prior to becoming disabled. It is also assumed that retired members will not become disabled following retirement due to duty related causes incurred prior to retirement.

Disability retirement benefits vary by duty and non-duty causes. Disability retirements are assumed to occur in the following percentages:

Duty Related Disability –	50%
Non-Duty Disability –	50%

Marriage Rate and Composition

In determining the value of pre-retirement spousal death benefits, it is assumed that 80% of all members will be married at death. Males are assumed to be three years older than their female spouse.

Causes of Death for Death Benefits

Deaths from active employment are assumed to be from duty related causes 25% of the time with non-duty causes accounting for the remaining 75%.

Accrual of Future Service

MPFRS employment is considered a full time professional position. All active members are assumed to complete sufficient hours to accrue one year of service in each future year of employment.

Noncontributory Service Credits for Military Service

At Normal retirement, qualifying members are assumed to claim up to 2 allowable military service years as additional retirement service credits. It is assumed that male members will be credited with an additional 2% of their contributory service credits and female members will be credited with an additional 0.5% of their contributory service credits.

Retirement Rates

Members who become eligible for unreduced retirement benefits prior to age 65 are assumed to have a 30% probability of retiring in the year they first become eligible. For years following the year of first eligibility and prior to attaining age 65, an additional 20% are assumed to retire each year. At 65, 100% of remaining members are assumed to retire.

Members who first become eligible for unreduced retirement benefits on or after the attainment of age 65 are assumed to retire in the year they first become eligible.

Plan Contributions

Member and employer contributions are calculated as a percentage of total members' payroll. Amounts are deposited to the Trust Fund on a monthly basis. For interest calculation purposes, all amounts are treated as being deposited on an average of half way through the Plan year.