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**West Virginia
Deputy Sheriff Retirement System**

**Actuarial Valuation Report
for the
Plan 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 a July 1, 2010 Actuarial Valuation of the West Virginia Deputy Sheriff Retirement System (DSRS). 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 the Plan's long term funding policy.


As of the July 1, 2010 Actuarial Valuation date, the Actuarial Accrued Liability (AAL) attributable to past years of employment totaled \$139,638,000. Trust Fund assets available to fund the AAL had a market value of \$92,692,000. The resulting Unfunded Actuarial Accrued Liability (UAAL) was \$46,946,000. The funded percentage for DSRS is 66.4% on the valuation date.

The long term funding policy for DSRS is to contribute at least the annual Normal Cost plus the amount necessary to fund the UAAL by the end of FY2029. Funding payments are calculated based on employer contributions as a level percentage of expected total DSRS payroll plus expected level fee deposits under Section 7-14E-2. The required employer contribution under the funding policy for FY2011 is \$5,876,000. Total expected employer contributions at the current 10.5% of payroll contribution rate plus fee deposits of \$550,000 total \$4,866,000, or 11.84% of payroll. A shortfall of \$1,010,000 is projected from meeting the long term funding policy. To meet the funding policy, an additional 2.46% of payroll is required.

The valuation includes experience gains or losses for the year. Trust Fund assets returned 15.6% for the year, some 8.1% above the actuarially assumed rate of 7.5%. The resulting gain from investments was approximately \$6,400,000. Fee contributions continued near prior levels for FY2010. The expected fee assumption was held level at \$550,000 to reflect the current experience in collections.

The Board Actuary hereby certifies that this Actuarial Valuation Report was completed in compliance with actuarial standards applicable to the purposes of the actuarial valuation. The Board 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:



Harry W. Mandel
Board Actuary
Member, American Academy of Actuaries
Member Society of Pension Actuaries
Enrolled Actuary #08-2527

Summary of the Valuation

This July 1, 2010 Actuarial Valuation Report for DSRS presents an actuarial analysis of the financial position of the Plan. 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. That information is applied to prepare disclosure for the Plan under GASB 25 & 27. It further determines if current member and employer contribution rates are expected to be sufficient to meet the current long term funding policy for DSRS.

The July 1, 2010 Actuarial Valuation for DSRS was completed in-house by the actuarial staff of the West Virginia Consolidated Public Retirement Board (CPRB). The valuation is completed using ProVal actuarial software leased from Winklevoss Technologies. Programming was peer reviewed by Buck Consultants who use ProVal to complete their valuations.

The Actuarial Valuation applied assumptions adopted by the CPRB Board to be effective July 1, 2009 and thereafter until changed. There were no changes applied as of July 1, 2010. DSRS fee contribution deposits are analyzed and adjusted annually based on amounts actually received. For FY2010 a total of \$547,000 in fees were received, consistent with the assumptions of \$550,000 for FY2010. The assumption of \$550,000 was continued for future years.

The interest rate assumption is reviewed annually by the CPRB Board. The Board approved a continuation of the Actuarial Interest Rate at 7.5% for July 1, 2010 valuations.

There were no changes in benefits provided in DSRS that are being first recognized in this July 1, 2010 Actuarial Valuation.

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 July 1, 2010 actuarially determined financial position along with comparative results for last year. The AAL attributable to prior years of employment totaled \$139,638,000. The market value of Trust Fund assets funded \$92,692,000 of the AAL for a funding percentage of 66.4%. The funding percentage increased from 60.5% in 2009 due largely to asset gains above the 7.5% assumed rate. The resulting UAAL of \$46,946,000 is significantly lower than the UAAL of \$50,984,000 reported last year. For FY2010, the investment return was 15.6% representing an actuarial gain for the year of 8.1%.

The employer Normal Cost percentage increased from 5.52% to 6.02%. The increase reflects the experience on plan membership for the year. Based on the current funding policy of Normal Cost plus amortization of the UAAL on a level percentage of payroll bases through FY 2029, the FY 2011 contribution requirement is \$5,876,000, or 14.29% of payroll. This amount exceeds the expected contributions plus fees of \$4,866,000 by \$1,010,000, or 2.46% of payroll. This demonstrates that the current contribution rate must be increased by 2.5% to meet the current funding policy.

Table 2, Projection of Unfunded Actuarial Accrued Liability Amortization – This table projects the funding progress of the UAAL under the current level percentage of payroll funding policy through FY 2029. The Scheduled UAAL Amortization Payments increase annually at 5.0%, the expected annual payroll increase adopted as of July 1, 2009. The contributions are based on the funding policy which exceeds the current 10.5% of payroll employer contributions plus additional level fee deposits at \$550,000 per year. The employer contribution rate would need to be increased by 2.46% to generate the Total Employer Contributions shown in the Table. The table shows that required employer contributions will increase significantly as a dollar amount in future years due to the assumed payroll growth rate of 5.0%. The UAAL is expected to remain at the \$47 million level through FY2013 and then decrease at an increasing rate annually through 2029. All member contributions are applied to fund their portion of the annual Normal Cost for benefits earned each year.

Table 3, Estimated Progress of Pension Plan from Fiscal Year 2011 through Fiscal Year 2029 – The table details the expected cash flow for DSRS through the end of the FY2029 amortization period. Contributions include 8.5% member and current 10.5% employer contributions as well as fee deposits of a level \$550,000 each year. Projected benefit payouts are based on the current membership with projections under the actuarial assumptions through FY2029. This tends to understate benefit payments somewhat 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.

Table 4, GASB-25 and GASB-27 Supplementary Disclosure Information as of June 30, 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 includes a history of the funded position for DSRS along with a summary of key inflationary assumptions employed in the Actuarial Valuation. It should be noted that the 2010 funded percentage of 66.4% is significantly higher than last year's 60.5%. It represents a 5.9% increase from last year's funded percentage. Most of the increase is due to the investment return on assets of 15.6%, some 8.1% more than the 7.5% actuarial assumption for FY2010.

Table 5, Valuation Assets as of June 30, 2010 – 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, except for member loans which are administered by the CPRB. Assets increased from \$78,220,000 for 2009 to \$92,692,000 due to investment gains of approximately \$6,400,000 and new contributions for the year.

Table 6, Statement of Changes in Net Assets for Benefits For Year Ended June 30, 2010 – The reconciliation of Trust Fund assets is taken from the financial report for the DSRS Trust Fund. It is prepared as part of the CPRB annual financial statements and is based on asset values and transaction amounts reported by the IMB. The return on assets reported for the DSRS Trust Fund by the IMB for FY2010 was 15.98% and is based on actual weighted cash flow for DSRS after investment expenses but prior to administrative expenses. The actuarial net rate of return of 15.60% is based on investment averaging during the year and investment return net of all expenses. Usually the actuarial return is slightly lower due to the expense adjustment. The gain on assets resulted in a return some 8.1% more than the actuarial assumed rate of return of 7.5%. This resulted in an experience gain on assets for the year of approximately \$6.4 million.

Table 7, Reconciliation of Plan Members as of July 1, 2010 – Plan membership for actuarial valuation purposes is taken as a “snap shot” on each actuarial valuation date. The membership for 2010 is reconciled to the membership reported for 2009. Although active membership only increased by a net of 32 members from 926 to 958, in actuality there were 88 new hires and 17 prior terminated members who returned to work. Active membership was reduced by 11 retirements, 2 deaths and 60 terminations of employment. The table provides a similar reconciliation for each terminated or retired group. The reconciliation process helps assure that any data issues are analyzed and accounted for prior to the completion of the Actuarial Valuation.

Table 8, Number and Total Annual Compensation of Active Members for Year Ending July 1, 2010 – This table provides an age and service distribution for the 958 active members. The annual compensation for each age/service cell in the table is shown along with the number of members in each cell. This table can be useful in visually analyzing the active membership groups for items such as vesting and retirement eligibility. Compensation shown is for the year ending June 30, 2010, with those hired during the year being included on an annualized basis.

July 1, 2010 Actuarial Valuation – DSRS

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 DSRS. Type of retirement is broken down between 219 regular retirees and beneficiaries of deceased members receiving benefits as well as 41 disability retirees. The table also shows the average annual benefits for each group. Annual retirement payments as of the valuation date totaled \$5,624,509. The average annual benefit being paid is \$21,633.

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 65 terminated members eligible for deferred vested benefits when they reach retirement age 62 or age 50 if they have 20 or more years of service. Members may optionally request a refund of their member contributions with interest in place of the deferred retirement benefit.

Following the tables are three summary sections. The first section provides an overview of the DSRS benefits provisions that were taken into account in the Actuarial Valuation. This provides a quick reference of the benefit provisions as included but is not intended to be a comprehensive summary of all DSRS benefit provisions. Actual DSRS 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 unchanged from the prior year. The third section describes the actuarial assumptions applied in projecting the future behavior of DSRS members and expected benefit payments. These are the actuarial assumptions adopted for the July 1, 2009 Actuarial Valuation by the CPRB Board and continue unchanged for 2010. An annual review of the Actuarial Interest Rate assumption is completed by the Board. The current 7.5% annual return rate was extended by the Board for the July 1, 2010 Actuarial Valuations.

Table 1
Development of Valuation Results

	<u>July 1, 2010</u>	<u>July 1, 2009</u>
1. Member Counts		
a. Actives	958	926
b. Regular and Disability Retirees	260	248
c. Vested Terminated	65	64
d. Non-Vested Withdrawals Pending	127	116
e. Total Members	<u>1410</u>	<u>1354</u>
2. Present Value of Future Benefits		
a. Actives	\$132,384,000	\$120,130,000
b. Regular Retirees	\$50,436,000	\$48,443,000
c. Disabled Retirees	\$9,688,000	\$8,946,000
d. Vested Terminated	\$1,425,000	\$1,841,000
e. Non-Vested Withdrawals Pending	\$341,000	\$304,000
f. Total PV Future Benefits	<u>\$194,274,000</u>	<u>\$179,664,000</u>
3. Actuarial Accrued Liability	\$139,638,000	\$129,204,000
4. Assets (Market Value)	<u>\$92,692,000</u>	<u>\$78,220,000</u>
5. Unfunded Actuarial Accrued Liability	\$46,946,000	\$50,984,000
6. Annual Normal Cost Percentage Rate		
a. Present Value of Future Normal Cost	\$54,636,000	\$50,460,000
b. Present Value of Future Compensation	\$376,352,000	\$359,905,000
c. Plan Normal Cost Percentage Rate	14.52%	14.02%
d. Member Contribution Rate	8.50%	8.50%
e. Employer Normal Cost Rate	6.02%	5.52%
f. Valuation Compensation FY2011(2010)	\$41,109,000	\$39,067,000
7. Calculated Employer Cost FY2011(2010)		
a. Amortization Payment on UAAL MOY	\$3,310,000	\$3,453,000
b. Employer Normal Cost MOY	\$2,566,000	\$2,236,000
c. Total Employer Cost MOY	<u>\$5,876,000 *</u>	<u>\$5,689,000</u>
d. Employer Cost as Percent of Compensation	14.29%	14.56%
8. Expected Employer Contributions FY2011(2010)		
a. Employer Contribution Rate	10.50%	10.50%
b. Employer Contribution MOY	\$4,316,000	\$4,102,000
c. Fee Deposits 7-14E-2	\$550,000	\$550,000
d. Total Employer Contributions	<u>\$4,866,000</u>	<u>\$4,652,000</u>
e. Employer Percent of Compensation	11.84%	11.91%

* Employer Cost for FY2011 increases to \$7,112,000 (17.30%) if level dollar funding is applied.

i - All contributions are payable monthly and shown as single middle of year payment.

ii - UAAL amortization is a level percentage of payroll plus fees thru FY 2029.

iii - Fees are estimated each year based on prior years actual amounts deposited.

Table 2
Projection of Unfunded Actuarial Accrued Liability Amortization

FY	Unfunded Actuarial Liability (BOY)	Employer Normal Cost (MOY)	Scheduled UAAL Amortization Payments (MOY)	Total Employer Contributions (MOY)	Unfunded Actuarial Liability (EOY)
2011	\$46,946,000	\$2,566,000	\$3,310,000	\$5,876,000	\$47,035,000
2012	\$47,035,000	\$2,694,000	\$3,448,000	\$6,142,000	\$46,988,000
2013	\$46,988,000	\$2,829,000	\$3,593,000	\$6,422,000	\$46,787,000
2014	\$46,787,000	\$2,970,000	\$3,745,000	\$6,715,000	\$46,413,000
2015	\$46,413,000	\$3,119,000	\$3,905,000	\$7,024,000	\$45,845,000
2016	\$45,845,000	\$3,275,000	\$4,073,000	\$7,348,000	\$45,060,000
2017	\$45,060,000	\$3,439,000	\$4,249,000	\$7,688,000	\$44,034,000
2018	\$44,034,000	\$3,611,000	\$4,434,000	\$8,045,000	\$42,739,000
2019	\$42,739,000	\$3,792,000	\$4,628,000	\$8,420,000	\$41,146,000
2020	\$41,146,000	\$3,982,000	\$4,832,000	\$8,814,000	\$39,222,000
2021	\$39,222,000	\$4,181,000	\$5,046,000	\$9,227,000	\$36,932,000
2022	\$36,932,000	\$4,390,000	\$5,271,000	\$9,661,000	\$34,237,000
2023	\$34,237,000	\$4,610,000	\$5,507,000	\$10,117,000	\$31,095,000
2024	\$31,095,000	\$4,841,000	\$5,755,000	\$10,596,000	\$27,460,000
2025	\$27,460,000	\$5,083,000	\$6,015,000	\$11,098,000	\$23,283,000
2026	\$23,283,000	\$5,337,000	\$6,288,000	\$11,625,000	\$18,510,000
2027	\$18,510,000	\$5,604,000	\$6,575,000	\$12,179,000	\$13,081,000
2028	\$13,081,000	\$5,884,000	\$6,876,000	\$12,760,000	\$6,933,000
2029	\$6,933,000	\$6,178,000	\$7,192,000	\$13,370,000	\$0

1 - Employer percent of pay contributions increase at 5.0% annually to fully fund the UAAL by June 30, 2029.

2 - Total amortization payments include level annual estimated fees of \$550,000 for FY2011 and after.

Table 3
Estimated Progress of Pension Plan from Fiscal Year 2011 through Fiscal Year 2029

FY	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	\$92,692,000	\$8,359,905	\$6,083,000	\$7,036,000	\$102,004,905
2012	\$102,004,905	\$8,750,000	\$6,640,000	\$7,728,000	\$111,842,905
2013	\$111,842,905	\$9,160,000	\$7,180,000	\$8,461,000	\$122,283,905
2014	\$122,283,905	\$9,591,000	\$7,748,000	\$9,239,000	\$133,365,905
2015	\$133,365,905	\$10,043,000	\$8,298,000	\$10,067,000	\$145,177,905
2016	\$145,177,905	\$10,518,000	\$8,972,000	\$10,945,000	\$157,668,905
2017	\$157,668,905	\$11,016,000	\$9,617,000	\$11,877,000	\$170,944,905
2018	\$170,944,905	\$11,539,000	\$10,245,000	\$12,869,000	\$185,107,905
2019	\$185,107,905	\$12,088,000	\$10,997,000	\$13,923,000	\$200,121,905
2020	\$200,121,905	\$12,665,000	\$11,854,000	\$15,039,000	\$215,971,905
2021	\$215,971,905	\$13,271,000	\$12,723,000	\$16,218,000	\$232,737,905
2022	\$232,737,905	\$13,907,000	\$13,677,000	\$17,464,000	\$250,431,905
2023	\$250,431,905	\$14,575,000	\$14,690,000	\$18,778,000	\$269,094,905
2024	\$269,094,905	\$15,276,000	\$15,733,000	\$20,165,000	\$288,802,905
2025	\$288,802,905	\$16,012,000	\$16,798,000	\$21,631,000	\$309,647,905
2026	\$309,647,905	\$16,785,000	\$17,887,000	\$23,183,000	\$331,728,905
2027	\$331,728,905	\$17,597,000	\$19,022,000	\$24,827,000	\$355,130,905
2028	\$355,130,905	\$18,449,000	\$20,184,000	\$26,571,000	\$379,966,905
2029	\$379,966,905	\$19,344,000	\$21,314,000	\$28,425,000	\$406,421,905

- 1 - Assumes Member contribution rate of 8.5% and Employer contribution rate of 10.5% throughout projection period.
- 2 - Member and Employer contributions are assumed to increase at 5.0% annually, net of Fee deposits.
- 3 - Fee deposits of \$550,000 are assumed to remain level throughout the projection period.
- 4 - Benefit related payments include all retirement, disability, survivor, death and withdrawal payments for members as of the July 1, 2010 actuarial valuation. They do not anticipate new membership first entering after that date.

Table 4
GASB-25 and GASB-27 Supplementary Disclosure Information as of June 30, 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 June 30, 2010 and June 30, 2009.

Group	6/30/2010	6/30/2009
a. Regular and disabled retirees and beneficiaries currently receiving benefits	260	248
b. Terminated employees entitled to benefits but not yet receiving payments	65	64
c. Terminated employees entitled to a return of employee contributions	127	116
d. Active members vested in Plan benefits	586	557
e. Active members not vested in Plan benefits	372	369
f. Total Plan membership	<u>1410</u>	<u>1354</u>

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)
6/30/99	\$32,801,140	\$49,237,316	\$16,436,176	66.6%	\$19,581,154	83.9%
6/30/00	\$39,679,000	\$57,480,622	\$17,801,622	69.0%	\$21,055,550	84.5%
6/30/01	\$42,919,000	\$64,869,270	\$21,950,270	66.2%	\$22,589,854	97.2%
6/30/02	\$44,371,000	\$72,701,961	\$28,330,961	61.0%	\$24,292,160	116.6%
6/30/03	\$49,364,000	\$78,870,860	\$29,506,860	62.6%	\$26,094,112	113.1%
6/30/04	\$59,715,000	\$87,759,000	\$28,044,000	68.0%	\$28,326,000	99.0%
6/30/05	\$68,914,000	\$98,081,000	\$29,167,000	70.3%	\$29,837,000	97.8%
6/30/06	\$77,899,000	\$103,748,000	\$25,849,000	75.1%	\$31,967,000	80.9%
6/30/07	\$93,983,000	\$109,726,000	\$15,743,000	85.7%	\$34,605,000	45.5%
6/30/08	\$89,852,000	\$119,738,000	\$29,886,000	75.0%	\$37,366,000	80.0%
6/30/09	\$78,220,000	\$129,204,000	\$50,984,000	60.5%	\$39,067,000	130.5%
6/30/10	\$92,692,000	\$139,638,000	\$46,946,000	66.4%	\$41,109,000	114.2%

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 Cost - Aggregate Level Percent of Payroll
Amortization method	Level Percent of Open Group Payroll plus fee deposits
Remaining amortization period	19 Years
Actuarial assumptions:	
Investment rate of return	7.5% annual effective rate
Projected salary increases	6.5% for first 2 years, 6.0% next 3, 5.5% next 5 and 5.0% thereafter
Inflation rate	3.0% annual underlying inflation

Table 5
Valuation Assets as of June 30, 2010

	June 30, 2010	June 30, 2009
Assets		
Cash	\$0	\$4,000
Investments at Fair Value	\$91,548,000	\$77,050,000
Contributions Receivable	\$613,000	\$660,000
Participant Loans Receivable	\$476,000	\$462,000
Miscellaneous Revenue Receivable	\$55,000	\$55,000
Prepaid Expenses	\$0	\$0
Total Assets	\$92,692,000	\$78,231,000
Liabilities		
Accrued Expenses and Payables	\$0	\$11,000
Net Assets for Pension Benefits	\$92,692,000	\$78,220,000
Audit Adjustment		
Post Valuation Audit Adjustment	\$0	\$0
Net Audited Assets for Pension Benefits	\$92,692,000	\$78,220,000

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

Net Assets Beginning of Year		\$78,220,000
Additions		
Contributions		
Member	\$3,323,000	
Employer	\$4,035,000	
Member Repay and Purchase	\$29,000	
7-14E-2 Report Fees	\$547,000	
Subtotal	<u> </u>	\$7,934,000
Investment Income		
Net Appreciation Fair Value	\$12,370,000	
Interest incl. Member Loans	\$77,000	
Subtotal	<u> </u>	\$12,447,000
Other Income		\$2,000
Annuity Payable		\$0
Total Additions		<u> </u> \$20,383,000
Deductions and Transfers		
Benefit Expense	\$5,327,000	
Refunds of Contributions	\$503,000	
Administrative Expenses	\$81,000	
Transfers (to)/from Plan	\$0	
Total	<u> </u>	\$5,911,000
Net Increase		<u> </u> \$14,472,000
Net Assets for Pension Benefits - EOY		\$92,692,000
Actuarial Net Rate of Return		15.60%
Return Rate per IMB		15.98%

Table 7

Reconciliation of Plan Members as of July 1, 2010

	Actives	Non Vested Terminations	Vested Terminations	Retirees Disabilities Beneficiaries	Total Members
Census as of July 1, 2009	926	116	64	248	1354
New Entrants	88				88
Return to Active Status	17	-10	-6	-1	0
Retired	-11			11	0
Died	-2		-1		-3
Terminated - Vested	-11		11		0
Terminated - Non Vested	-25	25			0
Terminated - Withdrawn	-24	-4	-3		-31
New Beneficiaries				2	2
QDRO's					0
Adjustments					0
Census as of July 1, 2009	958	127	65	260	1410

Table 8

Number and Total Annual Compensation for Active Members for Year Ending 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	Totals		Totals			
	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	Number & Total Pay	Number & Total Pay	Number & Total Pay		
Under 25	15 \$397,887	48 \$1,639,642														63 \$2,037,529
25 to 29	24 \$710,632	97 \$3,507,706	36 \$1,528,714													157 \$5,747,052
30 to 34	12 \$405,806	60 \$2,198,300	95 \$3,958,859	16 \$703,695	1 \$46,680											184 \$7,313,340
35 to 39	12 \$395,755	50 \$1,863,769	62 \$2,506,699	52 \$2,465,249	13 \$618,760	1 \$53,259										190 \$7,903,491
40 to 44	4 \$137,608	28 \$1,037,507	40 \$1,648,570	49 \$2,080,184	27 \$1,248,569	11 \$590,786	2 \$99,794									161 \$6,843,018
45 to 49	2 \$62,322	7 \$260,832	19 \$766,083	14 \$642,703	18 \$816,580	26 \$1,248,677	14 \$674,516									100 \$4,471,713
50 to 54		7 \$299,915	6 \$227,884	5 \$218,010	9 \$426,821	14 \$623,300	11 \$532,015	6 \$322,948								58 \$2,650,893
55 to 59		3 \$99,895	5 \$210,100	3 \$134,393	5 \$272,214	5 \$214,037	2 \$103,029	6 \$290,363	1 \$74,235							30 \$1,398,266
60 to 64		2 \$68,818		1 \$47,923	2 \$94,488	3 \$116,482	2 \$94,285	3 \$139,581	1 \$59,820							14 \$621,397
65 & Over		1 \$29,660														1 \$29,660
Totals	69 \$2,110,010	303 \$11,006,044	263 \$10,846,909	140 \$6,292,157	75 \$3,524,112	60 \$2,846,541	31 \$1,503,639	15 \$752,892	2 \$134,055	0 \$0						958 \$39,016,359

Note: Members hired during the year are included on an annualized basis.

Table 9

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

Current Age	Regular Retirees and Beneficiaries			Disabled Retirees			Total Receiving Retiree Benefits		
	Number	Average Age	Average Annual Benefit	Number	Average Age	Average Annual Benefit	Number	Average Age	Average Annual Benefit
Under 30									
30 to 34				1	34	\$12,008	1	34	\$12,008
35 to 39	1	37	\$13,050	3	38	\$12,847	4	38	\$12,898
40 to 44				2	42	\$16,301	2	42	\$16,301
45 to 49	2	48	\$11,719	6	47	\$28,956	8	47	\$24,647
50 to 54	32	53	\$22,933	6	53	\$31,578	38	53	\$24,298
55 to 59	65	57	\$23,353	9	58	\$23,655	74	57	\$23,390
60 to 64	72	63	\$20,931	9	62	\$21,881	81	63	\$21,037
65 to 69	30	67	\$19,533	5	66	\$19,382	35	67	\$19,511
70 to 74	13	73	\$16,133				13	73	\$16,133
75 to 79	4	75	\$18,246						
80 to 84									
85 to 89									
90 to 94									
95 & Over									
Totals	219	61	\$21,297	41	55	\$23,426	260	60	\$21,633
Total Annual Benefits			\$4,664,043			\$960,466			\$5,624,509

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	2	28	\$4,208
30 to 34	12	33	\$5,294
35 to 39	13	37	\$6,487
40 to 44	19	42	\$9,031
45 to 49	5	47	\$10,563
50 to 54	9	52	\$7,589
55 to 59	3	57	\$13,990
60 to 64	2	60	\$3,814
65 to 69			
70 to 74			
75 to 79			
80 to 84			
85 to 89			
90 to 94			
95 & Over			
Totals	65	42	\$7,671
Total Annual Benefits			\$498,615

Summary of the Benefit Provisions of the Plan

Definitions

1. **Plan:** West Virginia Deputy Sheriff Retirement System as set forth under West Virginia Code section 7-14D originally effective July 1, 1998 as amended from time to time.
2. **Membership:** A deputy sheriff first employed by any county on or after the effective date of the Plan shall be eligible for membership in this Plan only. Any deputy sheriff who was employed by any county before the effective date of this Plan had the right to transfer from the Public Employees Retirement System (PERS) during an election period following the effective date of DSRS.
3. **Average Compensation:** Average of the highest five consecutive plan years of compensation received for deputy sheriff employment during the last ten years.
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 they worked at least one hour. In all complete 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 hours. For members transferring from PERS to DSRS, employment while a PERS member shall be included in determining DSRS service credits.
5. **Disability Service:** For members who have their benefit recalculated at age 60 following partial disability or non-duty full 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. **Annual or Sick Leave Service Credit:** A retiring member may convert any unused annual leave or sick leave to additional retirement benefit service credits. Leave credits are doubled and converted to service credits at the rate of one-twelfth of a year for each twenty days of credit, rounded to the nearest month. Annual or sick leave converted to service credits may not be additionally used for any other purpose, including conversion to health insurance coverage.
7. **Military Service:** A retiring member may claim up to five years of military service occurring either prior to or during DSRS covered employment. Such military service may not be credited under any other governmental or military plan.

8. **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 within sixty months of being rehired.

Contributions

1. **Member Contributions:** Members contribute 8.5% of their gross deputy sheriff compensation to DSRS 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%.
2. **Employer Contributions:** Each local employer contributes 10.5% of members' gross deputy sheriff compensation to DSRS each payroll period. The employer contribution percentage was increased from 9.5% effective July 1, 2004 as allowed under legislation in effect on such date. The employer contribution rate may not be increased above 10.5% without legislation being passed by the Legislature allowing such increase.
3. **Section 7-14E-2 Fee Deposits:** A portion of report fees collected by local sheriff offices are deposited to DSRS as additional contributions as provided for under West Virginia Code.

Normal Retirement Benefits

1. **Eligibility for Normal Retirement:** A member may retire with unreduced benefits under DSRS 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 5 or more years of service.
 - c. After termination from employment prior to retirement eligibility, upon attainment of age 62 having 5 or more years of service at employment termination and leaving member contributions on deposit.
2. **Normal Retirement Benefit:** A monthly benefit equal to one-twelfth of 2.25% of the member's Average Compensation times the members years of service at retirement.

3. **Normal Form of Benefit:** A monthly benefit for the life of the member. If the member dies prior to receiving his full member contribution account balance at retirement, the remainder of the member contribution account balance shall be payable as a death benefit. A member who is married at retirement will automatically receive a reduced benefit, equivalent to the lifetime benefit to the member, providing for a 66.67% continuation to the member's spouse if living following the member's death.

4. **Optional Benefit Forms:** A member may elect to receive benefits under one of the optional forms available under DSRS. All optional forms are calculated so that the payments under the optional form have the same actuarial 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 while both the member and beneficiary are living. Upon the death of either the member or beneficiary, the survivor receives a continuation percentage of the original benefit. The continuation percentage to the survivor of 50%, 66.67%, 75% or 100% is selected by the member at retirement and is payable for the life of the survivor.
 - c. Upon the death of a beneficiary prior to the member under any continuation option under a. or b. above, a new beneficiary and continuation option may be selected by the member. If within 18 months of the death of the beneficiary, the new option shall be the actuarial equivalent of the remaining benefit payable to the member. If after 18 months of the death of the beneficiary, the new option shall be 90% of the actuarial equivalent of the remaining benefit payable to the member.
 - d. 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 the member.
 - e. An increased monthly benefit payable to the member from retirement through the age at which Social Security PIA benefits may commence on an unreduced basis, with reduced DSRS benefits payable thereafter. The increased benefit shall be calculated so that the increased payment is equal to the reduced payment plus estimated Social Security PIA benefit payment based on the Social Security law and provisions in effect on the date of retirement of the member.

Early Retirement Benefits

1. **Eligibility for Early Retirement:** A member who terminates employment after attaining age 40 but prior to attainment of age 50 and who completes 20 or more years of service is eligible for Early Retirement.
2. **Early Retirement Benefit:** A member who retires under Early Retirement is eligible for the Normal Retirement Benefit accrued as of termination of employment with a deferred starting date of age 50. The member may elect an immediate commencement of benefits which shall cause the Normal Retirement Benefit to be actuarially reduced from age 50 to the benefit commencement age.

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 or Early 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. Any early retirement commencement shall be subject to an actuarial reduction in the benefit from age 62.

Disability Benefits

1. **Eligibility for Disability Benefit:** A member who becomes unable to perform the duties of a deputy sheriff shall be considered disabled upon the concurrence of a medical review. If the member is unable to perform any gainful employment, the member shall be eligible for Total Disability Retirement benefits. If the member is able to perform gainful employment, the member shall be eligible for Partial Disability Retirement benefits.
2. **Duty Related Disability Benefits:** A member who becomes disabled due to injuries sustained in the line of duty as a deputy sheriff shall be eligible for a Duty Related Disability Benefit.
 - a. **Total Duty Disability Benefit:** A monthly disability benefit equal to 90% of the last 12 months average compensation prior to disability payable for life. Prior Total Duty Disability retirees who turned age 65 prior to July 1, 2007 were subject to a benefit recalculation at age 65 under the Normal Retirement Benefit provisions taking into account service prior to disability plus half time disability service credits while receiving disability benefits prior to age 65. This recalculation was eliminated effective July 1, 2007.

3. **Non-duty Death Benefit:** Payable if the death benefit eligibility is not duty related.
 - a. **Spouse at Death:** 50% of last 12 months average pay plus \$100 per month for each dependent child. If eligible for 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 Spouse, then each dependent child receives 25% of what the death benefit to the Spouse would have been.
 - c. **Parents at Death:** If no Spouse or Dependent Children, then each dependent parent receives 50% of what the death benefit to the Spouse would have been.

4. **Burial Benefit:** Upon death for any service related illness or injury, a \$5,000 lump sum payment to the spouse. If not married then the \$5,000 shall be payable to the estate for funeral expenses. If no other death benefits are payable, a minimum of the member contribution account shall be payable to the estate.

Summary of the Valuation Actuarial Methods

Actuarial Valuation Date

The actuarial valuation is completed as of the first day of the plan year. Actuarial calculations verify the adequacy of the expected funding for the fiscal year corresponding to the Plan year. The valuation is completed for the July 1 through June 30 plan year.

Actuarial Cost Method

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

Under the method, the Actuarial Accrued Liability is determined on an individual basis as a level percentage of payroll 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 as of the actuarial valuation date. The market value includes accrued amounts as reflected in the annual accounting for the Trust Fund.

Amortization Method for Funding

The funding target for DSRS is that the Unfunded Actuarial Accrued Liabilities are fully amortized by the end of fiscal year 2029. Amortization payments are calculated in the aggregate to remain a level percentage of future expected DSRS payroll determined on an open group projected payroll basis.

Summary of the Valuation Actuarial Assumptions

Interest Return and Discount Rate

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

Healthy Life Mortality Rates

Active members mortality is the RP2000 Healthy Annuitant Mortality Table with mortality improvements projected to 2005 with separate rates for males and females. The projection year reflects additional job related mortality risks.

Retired members and their beneficiaries mortality is the RP2000 Healthy Annuitant Mortality Table with mortality improvements projected to 2010 with separate rates for males and females.

Disability Retirees Mortality Rates

Member receiving disability retirement benefits mortality is the RP2000 Disabled Annuitants Mortality Table with separate rates for males and females.

Salary Scale

An annual salary increase rate of 6.5% in each of the first two years of service, decreasing to 6.0% for years three through five, 5.5% for years six through ten years and 5.0% for all years of service in excess of the first ten years.

Payroll Growth Rate

The total annual payroll for the active membership is assumed to increase at 3.5% per year for salary increase growth plus 1.5% per year for membership growth resulting in a total annual growth of 5.0%. This open group growth rate is applied in determining the percentage of payroll amortization requirements under the targeted DSRS funding of the UAAL by the end of Fiscal Year 2029. This growth rate includes projected newly hired deputy sheriffs and is an open group payroll projection rate.

Withdrawal Rates

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

Age	Rate	Age	Rate	Age	Rate	Age	Rate
20	.1120	30	.0800	40	.0480	50	.0160
21	.1088	31	.0768	41	.0448	51	.0128
22	.1056	32	.0736	42	.0416	52	.0096
23	.1024	33	.0704	43	.0384	53	.0064
24	.0992	34	.0672	44	.0352	54	.0032
25	.0960	35	.0640	45	.0320	55	.0000
26	.0928	36	.0608	46	.0288		
27	.0896	37	.0576	47	.0256		
28	.0864	38	.0544	48	.0224		
29	.0832	39	.0512	49	.0192		

Disability Rates

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

Age	Rate	Age	Rate	Age	Rate	Age	Rate
20	.0005	30	.0020	40	.0060	50	.0040
21	.0005	31	.0024	41	.0060	51	.0040
22	.0005	32	.0028	42	.0060	52	.0040
23	.0005	33	.0032	43	.0060	53	.0040
24	.0005	34	.0036	44	.0060	54	.0040
25	.0005	35	.0040	45	.0060	55	.0040
26	.0008	36	.0048	46	.0056	56	.0040
27	.0011	37	.0052	47	.0052	57	.0040
28	.0014	38	.0056	48	.0048	58	.0040
29	.0017	39	.0060	49	.0044	59+	.0040

Disability Rates – Type of Disability

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 type of disability. Disability retirements are assumed to break down in the following types:

Duty Related Full Disability –	25%
Duty Related Partial Disability –	50%
Non-Duty Full Disability –	20%
Non-Duty Partial Disability –	5%

Marriage Rate and Composition

In determining the value of pre-retirement spousal death benefits, it is assumed that 90% of all members will be married at death. Males are assumed to be three years older than their female spouse.

Accrual of Future Service

Employment as a deputy sheriff 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 and Unused Leave at Retirement

At Normal or Early retirement, a member is assumed to be granted 1.25 additional years of service for benefits due to allowable military service, plus 1.25 additional years for unused annual leave and/or unused sick leave for a total of 2.5 additional years.

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 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.

Fee Contributions under Section 7-14E-2

A portion of fees generated by each sheriff department for reports are contributed to the DSRS Trust Fund. Fees are deposited throughout the year. For interest calculation purposes they are treated as being deposited on an average of half way through the Plan year.

Fees are estimated based upon historical amounts contributed to the Trust Fund. Total deposits for last year were \$547,000 with annual deposits during the last five years ranging from a low of \$530,000 to a high of \$550,000, averaging \$544,000. Fee collections have not demonstrated any significant trend toward increasing each year and generally has fluctuated both up and down. For the purposes of analyzing the adequacy of total funding for DSRS in meeting the DSRS funding target, an average annual fee income of \$550,000 has been assumed to continue in this and all future years.