



**WEST VIRGINIA
COLLEGE PREPAID TUITION AND SAVINGS
PROGRAM**

**Annual Actuarial Valuation of the West Virginia
Prepaid Tuition Trust Fund**

June 30, 2010

Prepared by
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September 15, 2010

Board of Trustees
West Virginia College Prepaid Tuition and Savings Program
Charleston, West Virginia

Ladies and Gentlemen:

We have completed our actuarial analysis of the West Virginia Prepaid Tuition Trust Fund ("the Fund") as of June 30, 2010. This report presents our findings with respect to the Fund's expected cash flows, the status of the Fund in light of assets in the Fund as required by West Virginia Code §18-30-6(h) and the status of the Fund in light of assets plus the Prepaid Tuition Trust Escrow Account as required by West Virginia Code §18-30-6(i)(3).

This analysis of the funding of the Fund was prepared for the Board in accordance with generally accepted actuarial principles and practices commonly applicable to similar types of arrangements.

Currently the expected value of all liabilities is \$104,751,148 and the value of assets is \$81,594,542, and the total deficit is \$23,156,606. Liabilities are currently 77.9% funded. When assets of the Prepaid Tuition Trust Escrow Account are also considered, the deficit and funding ratio are, respectively, \$10,392,162 and 90.1%. The level annual amount needed to eliminate this deficit by June 30, 2013 is \$4,190,311. These results are based on assumptions approved by personnel of the West Virginia State Treasurer's Office after consultation with us.

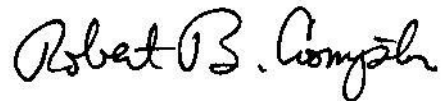
Based on the foregoing, as of the valuation date the West Virginia Prepaid Tuition Trust Fund does not have sufficient assets, including the value of future installment payments due under current contracts, to cover the actuarially estimated value of the tuition obligations under all current contracts (including any administrative costs associated with these contracts).

Based on our understanding of the requirements of West Virginia Code §18-30-6, we certify that the amount of \$1,000,000 needs to be transferred into the Escrow Account for Fiscal Year 2010.

* * * * *

We appreciate the opportunity to serve the State of West Virginia. Any questions about the report should be directed to me at (770) 752-5656.

Very truly yours,

A handwritten signature in black ink that reads "Robert B. Crompton". The signature is written in a cursive style with a large, stylized "R" and "C".

Robert B. Crompton, FSA, MAAA

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I. EXECUTIVE SUMMARY

The following are the key findings of our analysis.

Status of the Fund

As of June 30, 2010, the Fund's liabilities exceed its assets by \$23,156,606.

Item	Value as of June 30, 2010
Total Assets	\$81,594,542
Total Liabilities	\$104,751,148
Total Deficit ¹	(\$23,156,606)
Funding Ratio	77.9%
Level Annual Funding Required to Eliminate the Deficit by June 30, 2013	\$4,190,311

Key economic assumptions are listed below.

Key Assumptions	
Yield on Investments (Calendar Years)	
2010	7.20%
2011	7.10%
2012	6.90%
2013	6.80%
2014	6.70%
2015	6.50%
2016	6.40%
2017	6.30%
2018	6.10%
2019	6.00%
2020	5.80%
2021	5.70%
All Years Thereafter	5.50%

¹ There is an Escrow Account available to offset the deficit. The amount in this Escrow Account as of June 30, 2010 was \$12,764,444. If this amount were immediately available, the deficit would be (\$10,392,162).

Key Assumptions (Continued...)		
Tuition Inflation		
2011/12 – 2013/14		9.5%
All Years Thereafter		7.0%
Expenses		
Per Contract Expenses		\$12.35 per contract, inflating at 3% per year
Per Dollar of Invested Asset Expenses		10 basis points per year

A summary balance sheet as of June 30, 2010 is shown in the table below.

Value as of June 30, 2010	Assets and Liabilities
Assets	
Cash & Investments	\$79,421,253
Future Contract Payments	\$2,167,462
Receivables	<u>5,827</u>
Total Assets	<u>\$81,594,542</u>
Liabilities and Deficit	
Future Contract Benefits	\$103,769,947
Future Expenses	<u>968,165</u>
Tuition Contract Benefits & Expenses	\$104,738,112
Non-actuarial liabilities	<u>13,036</u>
Total Liabilities	104,751,148
Deficit	<u>(\$23,156,606)</u>
Total Liabilities and Deficit	<u>\$81,594,542</u>

II. RELIANCES & COMPLIANCE WITH ACTUARIAL STANDARDS OF PRACTICE

In making the projections on which this report is based, we relied on the following information supplied to us as indicated below.

- Weighted Average Tuition and Current Tuition Value at West Virginia colleges and universities as of June 30, 2010, supplied by the West Virginia State Treasurer's Office.
- Market value of assets of the Trust Fund, reported by the West Virginia Investment Management Board.
- Inventory of contracts by category, enrollment period, payment method and anticipated matriculation year, supplied by the Fund's records administrator, The Hartford.
- Information regarding likely future investment returns on the Trust Fund, supplied by the Fund's investment advisor.
- Assumptions regarding the Fund's anticipated asset allocation, supplied by the Fund's investment advisor.

There are no actuarial standards of practice that apply specifically to prepaid tuition plans. However, there are two general standards that we believe apply:

- Actuarial Standard of Practice #23 "Data Quality". This standard sets guidelines on review of data supplied by a third-party. We have performed reasonableness and consistency checks on the data supplied to us by the West Virginia State Treasurer's Office and by the records administrator, and are in compliance with this standard. Our review of the data was not an audit of the data.
- Actuarial Standard of Practice #41 "Actuarial Communications". This standard sets general guidelines for actuarial communications. This report is in compliance with this standard.

I. DESCRIPTION OF THE PROGRAM

The Program was created in 1997 by the West Virginia Legislature because

The Legislature hereby finds and determines that enhancing the accessibility and affordability of higher education for all citizens of West Virginia will promote a well-educated and financially secure population to the ultimate benefit of all citizens of West Virginia, and that assisting individuals and families in planning for future educational expenses by making the tax incentives in 26 U.S.C. §529 available to West Virginians are proper governmental functions and purposes of the state. – West Virginia Code §18-30-2

In addition, in 2003 the Legislature created a Prepaid Tuition Trust Escrow Account. Currently \$1,000,000 may be transferred annually into the Escrow Account from the West Virginia Unclaimed Property Trust Fund when there is an actuarial determination of a projected unfunded liability. Also in 2003, the Program was closed to new enrollments until the Legislature authorizes the Program to continue

Administration of the Program is performed by the West Virginia State Treasurer's Office for the Board.

Description of Benefits & Payment Options

The Program sold units of tuition where one unit provides for one semester's worth of undergraduate tuition plus mandatory fees. Participants who attend college outside of West Virginia, or who attend a private college, receive a benefit that is equal to the Current Tuition Value. In 2006, the Board revised the definition of the Current Tuition Value so that the Current Tuition Value is determined from average, weighted by enrollment, of all eligible West Virginia Public postsecondary institutions, but excluding those under the purview of the West Virginia Council for Community and Technical Education.

Each contract type has several types of payment options:

- Lump Sum Payment or
- Installment Payments, which come in several varieties:
 - Monthly payments over one year,
 - Monthly payments over two years,
 - Monthly payments over three years,
 - Monthly payments over four years,
 - Monthly payments over five years,
 - Monthly payments over six years,
 - Monthly payments over seven years,

- Monthly payments over eight years,
- Monthly payments over nine years,
- Monthly payments over ten years or
- Monthly payments until the beneficiaries projected year of enrollment

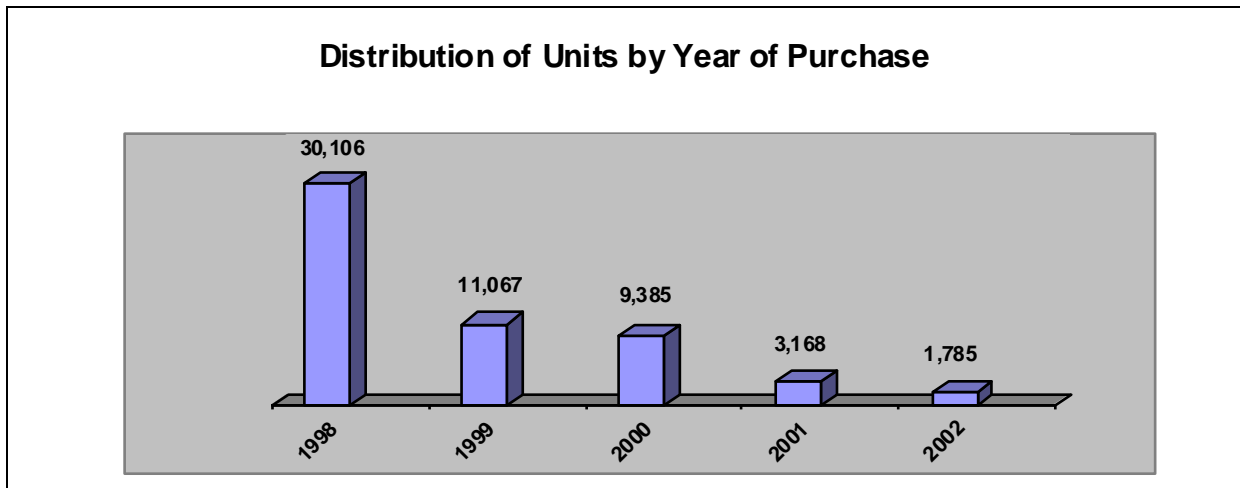
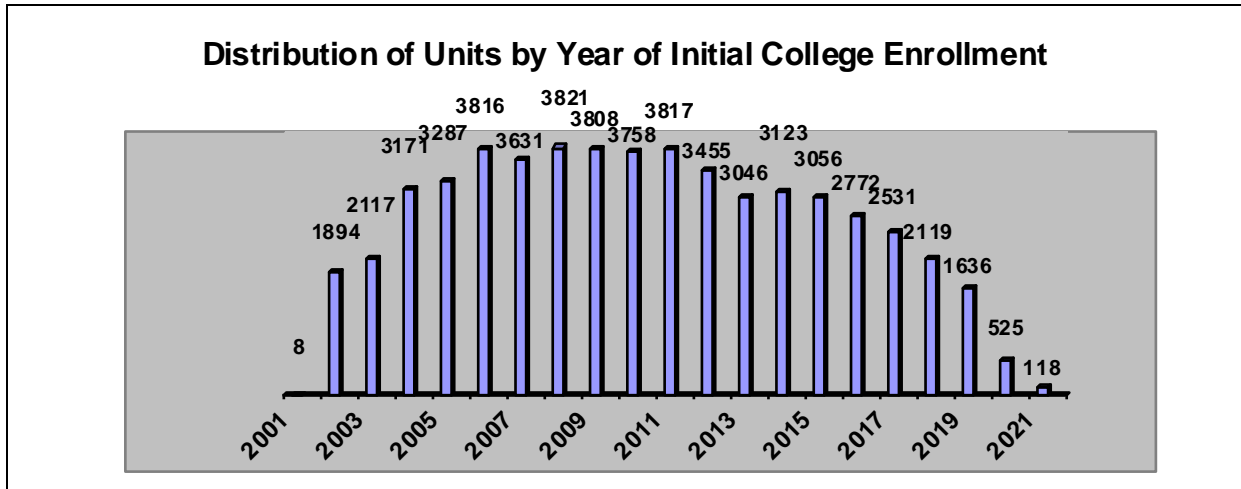
Refunds

For cancellations other than death, disability, or receipt of a scholarship, the purchaser receives a refund of payments accumulated at the lesser of 1.5% per year less administrative expenses, or the actual investment return of the Trust Fund less administrative expenses.

IV. SUMMARY OF PARTICIPANT DATA AND INVESTED ASSETS

Contract Data

Data on the number of outstanding units and payments was provided by the Fund's records administrator, The Hartford. The graphs below summarize the data provided concerning this.



Invested Assets

The assets currently held by the Fund are an important part of the determination of the status of the Fund. The investment strategy for those assets is also critical to the yield and to the vulnerability of the Fund's status to changes in the return earned on investments.

Fund Investments

The total market value of cash and invested assets held (exclusive of contract receivables) as of June 30, 2010 is \$79,421,253. The allocation of these assets is shown in the table below.

Market value of cash & invested assets held as of June 30, 2010		
	<u>Amount</u>	<u>% Of Total</u>
Cash & Equivalents held by Hartford	\$2,138,011	2.7%
Fixed Income	37,401,126	47.1%
U.S. Equities	25,311,425	31.9%
International Equities	<u>14,570,691</u>	<u>18.3%</u>
TOTAL	<u>\$79,421,253</u>	<u>100.0%</u>

Investment Strategy

The investment strategy is designed to achieve an investment return in excess of tuition inflation, which will allow the Fund to provide the contractual benefits to its beneficiaries at their anticipated initial year of college enrollment. The Fund's asset allocation strategy includes a mix of equities and fixed-income investments. However, because the Program is in wind-down, there is a planned phased transition to a smaller proportion in equities and a larger proportion in fixed-income. The target allocation for 2010 by asset category as follows:

- U.S. Stocks 36%
- Non-U.S. Stocks 19%
- Fixed Income 45%

V. ACTUARIAL METHODS AND ASSUMPTIONS

Methods

The actuarial method for the determination of the status of the Fund consists of projecting future tuition rates, future expenses based on the average anticipated number of units in place, and future utilization of these units. Future benefits and expenses are discounted using the assumed investment yield as the interest discount rate. The assumed discount rate is based on the current and anticipated mix of assets of the Fund.

For the projection of future benefits, the analysis proceeds as follows:

- Project future tuition rates for all years under consideration. Future tuition is based on the assumptions for tuition inflation.
- Determine the nominal cost of future use of units based on the assumptions regarding utilization of contracts and the length of time the average beneficiary will take to complete his college education.
- Determine the nominal value of administrative expenses.
- Determine the present value of future contract usage and future expenses based on the investment yield assumptions.
- Perform projections for all of the Fund's beneficiaries to determine if the Fund is adequate in the aggregate and make sufficient provision for overhead expenses.

Assumptions

Actuarial assumptions used to determine financial status of the Fund are of two general types: economic and demographic. Demographic assumptions determine the expected exposure to financial claims and generally answer the question “How and when will people use their contract?” Economic assumptions are concerned with the expected level of contract usage and answer the question “What is the expected value of contract usage?” The assumptions that we used were those that were approved by Personnel of the West Virginia State Treasurer’s Office, after consultation with us.

Economic Assumptions

Economic assumptions are used to estimate the annual tuition rates at two and four year colleges, increases in Fund expenses, and Fund earnings on assets invested. Because inflation is a major component of the rate of increase in tuition rates and of investment returns, we considered these rates together. We believe that the difference in these rates is more important than the absolute level of the rates. The following paragraphs describe the economic assumptions used in this study.

Income Tax

We assumed no Federal income tax or West Virginia state income tax on Trust Fund earnings.

Annual Tuition Rates

Tuition Inflation	
2011/12 - 2013/14	9.5%
All Years Thereafter	7.0%

Tuition Bias Load

Because purchasers have the opportunity to antiselect against the Fund by purchasing tuition at the weighted-average tuition level, and use the benefits at a school with higher-than-average tuition, we have included a bias load factor in our projections. This factor is shown in the table below.

Bias Load Factors	
Age at Purchase	Load Factor
All ages	9.0%

Fund Earnings Rate

Our assumption for investment returns is based on information supplied to us by the Fund's investment advisor.

Yield on Investments (Calendar Years)	
2010	7.20%
2011	7.10%
2012	6.90%
2013	6.80%
2014	6.70%
2015	6.50%
2016	6.40%
2017	6.30%
2018	6.10%
2019	6.00%
2020	5.80%
2021	5.70%
All Years Thereafter	5.50%

Annual Expenses

We are projecting future expenses to be as shown in the following table.

Expenses	
Annual Per Contract Expense	\$12.38
Inflation of Per Contract Expense	3.0%
Annual Percent of Invested Assets	0.1%

Demographic Assumptions

The demographic assumptions used in this report are based on our experience with similar types of liabilities. Our choice of assumptions is based on recent experience and our best estimates as to future events. These assumptions are as follows:

Contract Cancellations Due To Mortality and Disability

We assumed no contract terminations due to disability. We assumed that contracts would terminate due to deaths according to the 1980 U.S. Life Table. In the **Sensitivity Analysis** section of this report, we show the effects of not including deaths.

Other Contract Cancellations

We assumed that there would be no contract cancellations other than those discussed immediately above due to the death of the beneficiary. In the **Sensitivity Analysis** section of this report, we show the effects of including cancellations.

Matriculation Percent

All beneficiaries are assumed to matriculate at the matriculation date specified in the application, except for those who are projected to die.

Utilization of Benefits

Proportion Used Each Year Beginning with Projected Enrollment Year										
Years Purchased	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	.85	.10	.05							
2	.45	.30	.15	.05	.05					
3	.33	.25	.18	.12	.07	.03	.02			
4	.24	.24	.20	.18	.07	.03	.02	.01	.01	
5	.19	.19	.16	.14	.13	.07	.05	.03	.02	.02

In the **Sensitivity Analysis** section of this report, we show the effects of a shorter benefit usage pattern.

Dropout Rate

All beneficiaries are assumed to use 100% of their contractual benefits once they have enrolled in college.

Frequency of Beneficiary Replacement

Since all surviving beneficiaries are expected to matriculate and are expected to use their benefits until completion, the assumption is made that no replacement of beneficiaries will occur.

VI. STATUS OF THE FUND AS OF JUNE 30, 2010

In determining the status of the Fund, we estimated the future disbursements for higher education expenses of beneficiaries, expenses, and refunds for terminated contracts. We also projected the future assets based on current assets and expected earnings on assets. We believe these estimates are reasonable based on the information available and our past experience and judgment.

The estimates of the prospective assets and liabilities of the Fund are summarized in the table on the following page and demonstrate the financial position of the Fund. The value of all assets including future contract payments is \$81,594,542 while the expected value of all liabilities is \$104,751,148. The resulting actuarial deficit is \$23,156,606.

The actuarial deficit will change from year to year due to positive and negative cash flows and due to the change in the present value of future contract usage and expense payments because of the passage of time. The actuarial deficit will also change due to the variance of experience from the assumptions. These variances include tuition increases, investment income, and expenses. The changes for the year ending June 30, 2010 are summarized in the table below.

Change in Deficit	
Deficit at June 30, 2009	(\$27,147,480)
Gain From Favorable Tuition Inflation	6,068,504
Gain Due to Favorable Investment Experience	7,238,655
Gain Due to Change in Assumptions (see Page 17)	
Change in Investment Return	(2,478,392)
Change in Tuition Inflation	<u>(5,264,587)</u>
Total due to Change in Assumptions	(7,751,979)
Other ²	<u>(1,564,306)</u>
Deficit at June 30, 2010	<u><u>(\$23,156,606)</u></u>

In the following chart we show the value of expected future contract usage, expected future payments, current assets, and expected deficit as of the end of each future year for active contracts as of June 30, 2010.

² This includes change in the time value of future payouts. Additional items could not be easily quantified, but include payment of refunds, timing of cash flows and difference in projected vs. actual expenses.

PRESENT VALUE OF ASSETS AND LIABILITIES

Fiscal Year Ending	Invested Assets & Receivables	Present Value Of Future Revenues	Present Value of Future Liabilities And Expenses	Deficit
2010	79,427,080	2,167,462	104,751,148	(23,156,606)
2011	72,273,398	1,664,463	98,750,161	(24,812,300)
2012	64,823,225	1,223,814	92,596,189	(26,549,150)
2013	56,950,752	877,297	86,195,813	(28,367,763)
2014	48,431,106	611,278	79,324,968	(30,282,584)
2015	39,108,456	392,101	71,781,778	(32,281,221)
2016	28,764,227	225,023	63,352,605	(34,363,355)
2017	17,707,667	116,349	54,369,441	(36,545,425)
2018	5,696,105	49,691	44,557,019	(38,811,224)
2019	(6,691,868)	12,234	34,479,664	(41,159,298)
2020	(19,009,000)	- 0 -	24,578,677	(43,587,677)
2021	(29,806,316)	- 0 -	16,287,647	(46,093,964)
2022	(38,597,427)	- 0 -	10,077,777	(48,675,204)
2023	(45,556,538)	- 0 -	5,795,802	(51,352,340)
2024	(50,929,793)	- 0 -	3,246,926	(54,176,719)
2025	(55,387,459)	- 0 -	1,768,979	(57,156,438)
2026	(59,389,769)	- 0 -	910,273	(60,300,042)
2027	(63,200,577)	- 0 -	415,968	(63,616,545)
2028	(66,977,034)	- 0 -	138,421	(67,115,454)
2029	(70,766,811)	- 0 -	39,994	(70,806,804)
2030	(74,694,979)	- 0 -	6,200	(74,701,179)
2031	(78,809,744)	- 0 -	- 0 -	(78,809,744)

VII. SENSITIVITY TESTING

We believe that when there is a significant amount of uncertainty about conditions prevailing in the future it is important to test the status of the Fund under other possible assumptions.

We investigated the effect of variances in inflation, investment yield, cancellations and benefit usage from those anticipated by the reported assumptions. For these projections, we assumed no future unit sales. These scenarios are described below. These scenarios are based on level adjustments to the baseline assumptions discussed earlier in this report.

- 1) Tuition inflation lower than baseline assumptions by 0.25% every year.
- 2) Tuition inflation higher than baseline assumptions by 0.25% every year.
- 3) Investment yields higher than baseline assumptions by 0.25% every year.
- 4) Investment yields lower than baseline assumptions by 0.25% every year.
- 5) Tuition inflation higher and investment yields lower than baseline assumptions by 0.25% every year.
- 6) Include cancellations at 1.0% per year, until matriculation.
- 7) Use shortest possible benefit usage – for example, a beneficiary with four years of benefits, would use 25% of benefits each year.
- 8) Set assumptions for beneficiary deaths to zero.

The deficit for each of these scenarios is shown below.

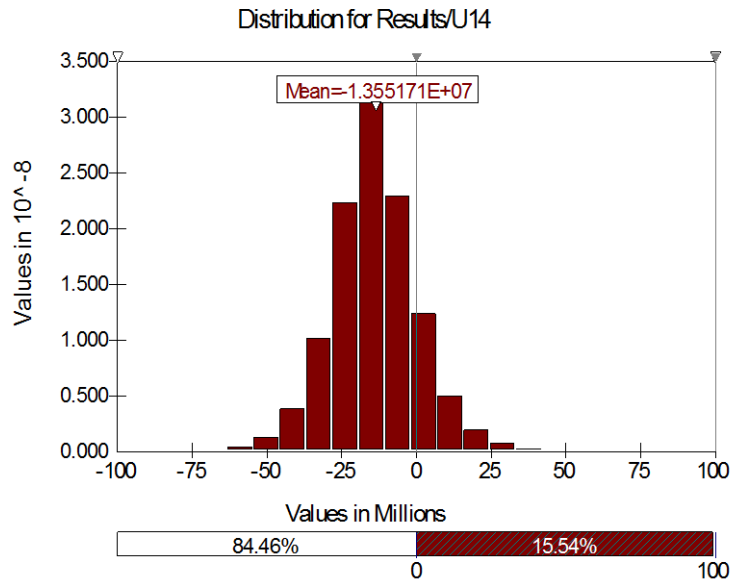
Sensitivity Testing Results		
<u>Scenario</u>	<u>Deficit</u>	<u>Change From Reported</u>
1	(\$21,988,073)	\$1,168,533
2	(\$24,333,255)	(\$1,176,649)
3	(\$21,925,817)	\$1,230,789
4	(\$24,413,231)	(\$1,256,625)
5	(\$25,612,049)	(\$2,455,443)
6	(\$21,212,891)	\$1,943,715
7	(\$22,273,438)	\$883,168
8	(\$23,238,797)	(\$82,191)

VIII. MONTE CARLO MODELING

We have retained the same model for stochastic projections as we used last year. We have updated the beginning values to reflect 2010 actual results, but otherwise have left the same structure and parameters in place.

As in prior years, we ran 10,000 scenarios with varying tuition inflation and investment returns. The results are summarized in the table below.

Proportion with positive Actuarial Reserve	15.54%
25% of results are better than:	(5,195,375)
50% of results are better than:	(13,960,819)
75% of results are better than:	(22,339,388)
Largest Actuarial Reserve	95,004,776
Smallest Actuarial Reserve	(98,285,056)
Mean Actuarial Reserve	(13,551,714)



The most important measures from the table immediately above are the Proportion with positive Actuarial Reserve and the 50% Results. The Proportion with positive Actuarial Reserve probability of 15.54% indicates that there is slightly better than a 3 in 20 likelihood that the Program will have a surplus.

The 50% Results measure is a “best-estimate” measure of results. If our assumptions are neither conservative (that is they understate results) nor aggressive (that is they overstate results) then the 50% Results measure should be close to our projected result

of (\$23,156,606). The table above indicates that our assumptions are conservative – mainly due to the historical tuition inflation averages being lower than our current assumption.

The Smallest Actuarial Reserve indicates what happens if economic events continue adversely for the lifetime of the current contracts –high tuition increases, coupled with negative returns in the equity market until the end of the projection horizon. On the other hand, the Largest Actuarial Reserve indicates what happens if economic conditions are favorable for the remaining lifetime of the current contracts.

IX. CHANGES IN ACTUARIAL ASSUMPTIONS

We have made two changes in assumptions for our projections this year – one to revise tuition inflation and the other to revise investment returns.

Change in Tuition Inflation

Last year our tuition inflation assumption was 6.0% for 2010/11 followed by 7.0% for all future years. The actual increase for 2010/11 was 0%. This year we changed the inflation assumption for 2011/12 – 2013/14 to 9.5%, but left all years thereafter at 7.0%. We made this change to reflect the likelihood of “catch-up” increases at West Virginia universities.

Change in Investment Return

We updated the investment return assumptions based on the Fund’s investment advisor’s most current view of capital markets. Current and prior assumptions are shown in the tables below.

Prior Investment Returns (Fiscal Years)	
2009/10	7.00%
2010/11 – 2013/14	7.50%
2014/15 – 2016/17	7.00%
All Years Thereafter	6.50%

Revised Investment Returns (Calendar Years)	
2010	7.20%
2011	7.10%
2012	6.90%
2013	6.80%
2014	6.70%
2015	6.50%
2016	6.40%
2017	6.30%
2018	6.10%
2019	6.00%
2020	5.80%
2021	5.70%
All Years Thereafter	5.50%

Dollar Effect of Change in Assumptions

If assumptions had been the same as last year, the Program's deficit would have been:

(\$15,404,627)

These changes worsened the deficit by \$7,751,979. The components of the change are:

- Change in investment return: \$2,487,392 worsening of results
- Change in tuition inflation \$5,264,587 worsening of results

X. PROJECTED CASH FLOWS

The projected cash flows, along with projected investment earnings and asset balances are shown in the table below.

Fiscal Year	Beginning Assets	Monthly Payments	Benefit Payments	Expenses	Investment Income	Ending Assets
2011	79,427,080	633,378	12,639,597	186,119	5,038,655	72,273,398
2012	72,273,398	536,829	12,272,877	163,765	4,449,640	64,823,225
2013	64,823,225	414,475	11,991,175	148,797	3,853,023	56,950,752
2014	56,950,752	313,666	11,959,348	137,136	3,263,172	48,431,106
2015	48,431,106	250,490	12,071,907	123,601	2,622,368	39,108,456
2016	39,108,456	185,728	12,366,114	108,280	1,944,437	28,764,227
2017	28,764,227	118,793	12,340,115	91,903	1,256,666	17,707,667
2018	17,707,667	71,316	12,541,351	74,238	532,711	5,696,105
2019	5,696,105	39,133	12,175,385	58,794	(192,926)	(6,691,868)
2020	(6,691,868)	12,463	11,393,414	51,456	(884,725)	(19,009,000)
2021	(19,009,000)	- 0 -	9,270,079	44,203	(1,483,034)	(29,806,316)
2022	(29,806,316)	- 0 -	6,806,301	37,419	(1,947,390)	(38,597,427)
2023	(38,597,427)	- 0 -	4,618,048	31,551	(2,309,512)	(45,556,538)
2024	(45,556,538)	- 0 -	2,731,549	25,512	(2,616,193)	(50,929,793)
2025	(50,929,793)	- 0 -	1,573,026	19,687	(2,864,954)	(55,387,459)
2026	(55,387,459)	- 0 -	905,095	14,110	(3,083,104)	(59,389,769)
2027	(59,389,769)	- 0 -	514,210	9,222	(3,287,376)	(63,200,577)
2028	(63,200,577)	- 0 -	283,818	5,045	(3,487,594)	(66,977,034)
2029	(66,977,034)	- 0 -	100,368	1,589	(3,687,820)	(70,766,811)
2030	(70,766,811)	- 0 -	34,175	431	(3,893,562)	(74,694,979)
2031	(74,694,979)	- 0 -	6,232	56	(4,108,476)	(78,809,744)