



# *oppaga* Progress Report

May 2004

Report No. 04-33

## Prepaid College Program Fiscally Sound, Additional Changes May Be Appropriate

### *at a glance*

Despite a drop in its actuarial surplus over the past year, the Prepaid College Program continues to be financially sound. The program also has implemented several of the actions we recommended in our 2003 report. The Prepaid College Board 2003 actuarial adequacy report used a revised investment return assumption and a broader sensitivity analysis than prior reports. In addition, the Prepaid College Board commissioned a study to re-assess the asset allocation in the program's investment portfolio.

However, the Prepaid College Board should conduct an experience analysis of benefit deferrals and modify actuarial assumptions accordingly, and it should base projected stock returns on the most up-to-date actuarial assumptions. It also should consider changing its investment portfolio in accordance with the results of a recent asset allocation study. If the rate of growth in university tuition rises significantly beyond current expectations or universities are permitted greater tuition flexibility, the Legislature and the Prepaid College Board may need to consider changes to the program. Changes in state policies such as accelerated high school graduation and university enrollment caps also could affect the program's actuarial soundness or pricing in the future.

The newly opened College Investment Plan may offer families options for investment returns as high or higher than the Prepaid College Plan, but some of those options also carry more risk than prepaid contracts.

### Scope

In accordance with state law, this progress report informs the Legislature of the actions taken in response to the findings and recommendations included in our March 2003 review of the Prepaid College Program. As part of our follow-up, we contracted with actuarial consultants from Mellon Human Resources & Investor Solutions to review the methods, assumptions, and conclusions in the Prepaid College Board's actuarial and pricing reports. Mellon's findings comprise part of our analysis. (See Appendix B for the Mellon report.)

### Background

The Florida Prepaid College Program is one of many state and federal programs created to encourage families to save for future higher education expenses. It was established in 1987 to allow Florida residents to pay the cost of higher education in advance at a fixed level and with a statutory state guarantee.<sup>1</sup>

<sup>1</sup> Section 1009.97, F.S.

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The program allows the purchaser to establish an account for a beneficiary (the future college student) and to lock in the future cost of a two-year community college program, a four-year university program, or a combination of two years in each. Account holders may make lump sum or periodic payments, and they may purchase local fee and dormitory plans in addition to the tuition plans. Prices are based on the beneficiary's age and actuarial assumptions about rates of tuition, fee, and dormitory cost inflation and investment return. In the 2003-04 (November to January) enrollment period, a tuition contract paid in a lump sum for a newborn beneficiary costs \$9,567 for a university, \$2,827 for a community college, and \$7,615 for a "two plus two" plan.<sup>2</sup>

The Florida Prepaid College Program is the largest in the nation. As of August 2003, the program had 641,859 tuition contracts, 142,021 dormitory contracts, and 111,702 local fee contracts. The Fiscal Year 2002-03 enrollment period witnessed the largest sales volume in the program's 14-year history. In that period, the Prepaid College Program sold 158,980 total contracts, a 103% increase over 2001-02 (the year of its highest prior sales record) and 18% of all contracts sold since its inception.

The Florida Prepaid College Program is administered by the Florida Prepaid College Board, which also administers the new Florida College Investment Plan. The board is administratively housed in the State Board of Administration, which provides administrative and some investment services and approves the board's Comprehensive Investment Strategy. Otherwise, the Florida Prepaid College Board operates its programs independently.

## Prior Findings

Our February 2002 review of the Florida Prepaid College Program examined the program's financial soundness and explored options for maintaining that soundness in the face of potential tuition policy changes. That review found that the program is one of the most

solvent in the country, but the actuarial assumptions used to value it could be improved. It also found that large, sustained tuition increases could threaten the program's long-term viability.

**Actuarial Assumptions.** Our prior report recommended the Prepaid College Board consider modifying certain actuarial assumptions to better match historical experience.

- The board assumed a rate of return on stocks that was the same as that of U.S. Treasury bonds. However, long-term stock returns ranged from 2.6 to 5.3 percentage points higher than the U.S. Treasury bond return rate. We recommended that the board's return on assets assumption reflect the mix of stocks and bonds in its portfolio.
- The board assumed a high school graduation rate of 100%, with all beneficiaries graduating at the time initially expected, and a college dropout rate of zero, with all beneficiaries taking a full courseload. However actual graduation and dropout rates are not nearly this high, and many students take less than a full courseload. We recommended that the board use historical experience to develop these actuarial assumptions.

We also recommended that the board include in its valuation report the results of sensitivity studies on key assumptions.

**Options to address tuition growth.** In addition to changing actuarial assumptions, we recommended that the Prepaid College Board modify its long-term investment strategy to increase the likelihood of greater future returns. We also identified four options the board could consider if large, sustained tuition increases threatened its long-term financial outlook:

- modify the program's long-term investment strategy to increase the likelihood of greater future returns;
- raise contract prices;
- shift the risk from the state to universities and colleges or program participants; and
- suspend or eliminate the program.

<sup>2</sup> For the enrollment period ending January 31, 2004, a newborn is defined as a child born after September 1, 2003. These amounts are rounded to the nearest dollar.

## Current Status ---

### *Despite a drop in the actuarial surplus, the program continues to be financially sound*

The program's actuarial surplus dropped 55% from the actuarial projections of 2002 to those of 2003. This occurred for a number of reasons including an unanticipated surge in enrollment, a larger-than-expected tuition increase, relatively large expected (future) tuition increases, and declining interest rates.

However, the Florida Prepaid College Program's actuarial funding ratio is currently 103%, which means that its assets exceed its liabilities by 3%. The program is among the financially strongest of the 20 state prepaid programs. The program can sustain university tuition increases of 7.9% every year for 23 years, with assets sufficient to cover liabilities. However, the program would need to increase prices or earnings if tuition increased at a higher rate than 7.9% per year for two decades.<sup>3</sup>

### *The Prepaid College Board modified some of its actuarial assumptions*

The Prepaid College Board adopted some but not all of our recommendations for changing its actuarial assumptions.

Investments return assumption. Prepaid College Board actuaries assumed an investment return rate of 4.35%, a drop from 5.57% in the previous year. The drop was due to falling interest rates and the method used to value the program.<sup>4</sup> As we recommended, this revised investment return rate now considers assets other than U.S. Treasury bonds in the prepaid program portfolio, adding 0.28 percentage points for stocks and corporate bonds to an

estimated average return rate of 4.07% from U.S. Treasury bonds.<sup>5</sup>

However, the methodology used to calculate the additional return from stocks considered the previous year's U.S. Treasury rate of 5.57% rather than the current year's rate of 4.07%. Using the more recent number would raise the actuarial balance by \$27 million (0.5 percentage points) and the break-even rate of tuition increase to 8%. We recommend that future projections base the incremental gain from stock returns on the interest rates used in the most up-to-date actuarial assumptions.

Demographic assumptions. As we recommended, the Prepaid College Board actuaries conducted an informal study of high school graduation rates and college dropout rates and concluded that the assumed rates were reasonable. The current assumptions are in line with those of other states.

However, program actuarial projections continue to assume that all beneficiaries will use all of their benefits in a 4-year period, even though the program allows them to delay entry into college for up to 10 years, and college students often take longer than 4 years to obtain their degrees. Because tuition is expected to increase at a higher rate than interest rates, delays in benefit use decreases the program's actuarial value; over the last year, these delays resulted in an actuarial loss of \$2 million. To improve the accuracy of its actuarial valuations, the Prepaid College Board should develop a deferral assumption that reflects the program's experience.

Other actuarial changes. The Prepaid College Board changed its assumption about future tuition increases from a prior projection of 6.8% per year indefinitely to a current projection of 8.5% per year for 3 years and 6.8% thereafter (or a 23-year annual average of 7.23%). Other state prepaid programs have also assumed relatively

<sup>3</sup> In addition to tuition (also referred to as the matriculation fee), the prepaid tuition contract covers three other fees. In 2004-05, to reach 7.9% growth in all four fees the tuition contract covers required 8.89% growth in university tuition. Put another way, the 8.5% increase in tuition authorized in 2003-04 resulted in 7.88% growth in the fees covered by the prepaid tuition contract.

<sup>4</sup> The board changes the investment return assumption annually in response to changing U.S. Treasury interest rates. Although this is appropriate given the board's immunized investment portfolio, it is exceptional in comparison to other state prepaid programs, which do not regularly change their investment return assumptions.

<sup>5</sup> The Prepaid College Board has kept the investment return assumption used for pricing higher than that used for actuarial projections to limit growth and volatility in plan prices. However, for pricing purposes, the investment return assumption (5.1% on average) is lower than the assumed growth rates for tuition, fees, and dormitory costs. As a result, lump-sum prices exceed actual tuition and fees. Because the pricing assumes a higher investment return for longer-term contracts, prices are lower for younger than for older beneficiaries.

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high short-term tuition increases, and this appears to be a reasonable adjustment.

In addition, as we recommended, the Prepaid College Program improved the information presented in its actuarial report. The 2003 actuarial report included additional scenarios testing the sensitivity of its actuarial projections, and it added a page describing the effect of each scenario on contract prices.

### ***The Prepaid College Board is considering investment strategy changes that could improve its financial outlook***

The Prepaid College Board currently invests most of its assets in the bond market. The board neither re-balanced its portfolio according to its target asset allocation nor changed its comprehensive investment plan in the last year. However, the board's February 2004 asset allocation review recommended increasing the percentage of its portfolio in stocks to lower risk and increase expected returns.

The Prepaid College Board's conservative investment strategy paid off in recent years. The program realized unusually high returns on its bond-heavy portfolio as interest rates and the stock market declined. However, over the long term, the investment strategy increases the risk

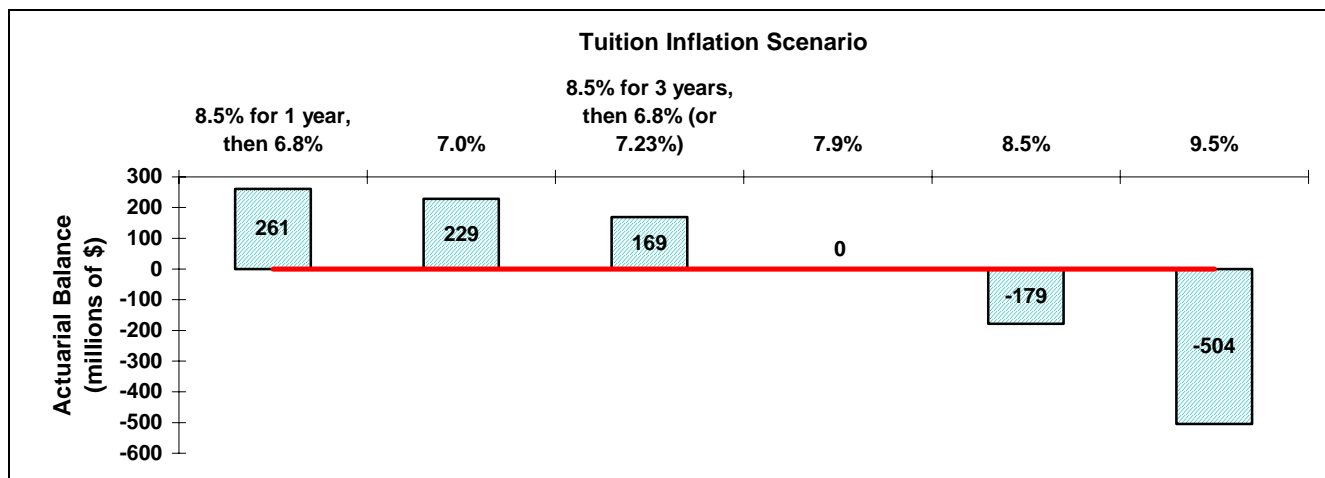
that the program will be unable to meet future obligations, given current low interest rates and expectations for high future tuition increases. We concur with the board's February 2004 asset allocation study recommendation that the board consider shifting more of its portfolio into equities, which will most likely earn higher rates of return than bonds over the coming decades and thus raise the program's actuarial surplus.

### ***Other policy changes are still possible if the program's financial outlook declines***

Our previous report presented numerous options the Prepaid College Board and the Legislature could consider if high or variable tuition growth rates were to jeopardize the Prepaid College Program's financial solvency. Tuition inflation has not reached a level that puts the program at risk. Currently, actuarial assumptions yield an actuarial surplus of \$169 million, and those assumptions lead to an actuarial surplus as long as tuition increases no more than 7.9% over two decades. However, tuition flexibility or other tuition policy changes may be considered in future legislative sessions. In that case, the program may face additional financial risk, and the board may need to consider contractual and pricing changes. Exhibit 1 shows the projected actuarial balance at various levels of tuition inflation over the next 23 years.

## Exhibit 1

### Prepaid College Program Can Sustain 7.9% Tuition Inflation for the Projected Life of Existing Contracts



Note: The actuarial balance represents the present value of projected assets and liabilities for all existing contracts for 23 years, after which all existing contractual obligations are assumed to be met.

Source: OPPAGA analysis of Ernst & Young data.

## Emerging Policy Questions

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Three recent developments may affect future valuation of or participation in the Prepaid College Program:

- accelerated high school graduation;
- possible college enrollment caps; and
- the newly opened College Investment Plan.

### *The long-term impact of the new early graduation policy is uncertain but probably small*

In 2003 the Legislature revised statutory high school graduation requirements to permit students to complete high school in three years (with 18 credits) rather than four.<sup>6</sup> This policy of accelerated graduation may have a long-term effect on the financial condition of the prepaid program depending on how many students opt to graduate in three years and whether those early graduates use their prepaid benefits.

The difference between the program's tuition inflation and investment return assumptions will determine the impact of accelerated graduation on the actuarial reserve. Currently, tuition is projected to rise, on average, 2.88 percentage points faster than the value of the program's investments. Based on these actuarial assumptions, the reserve will increase by \$71 for each student who enters college one year earlier than expected. To put this into perspective, for the accelerated graduation option to cause a 1% increase in the actuarial balance in the coming year, nearly 24,000 prepaid plan beneficiaries would need to graduate from high school and enter college early.

### *The long-term impact of enrollment caps is uncertain but probably small*

During the 2003 legislative session, some Florida higher education institutions proposed enrollment caps as a way to reduce budget constraints. The extent to which this would affect the program's financial condition depend on the extent to which enrollment caps cause

beneficiaries to delay entry to or graduation from college. Given current actuarial assumptions, actuarial reserves would decrease by \$66 for each student that entered college one year later than expected. To cause 1% decrease in the actuarial balance, almost 26,000 beneficiaries would need to delay entry into college by one year.

### *The College Investment Plan offers potentially higher-return alternatives with varying degrees of risk*

The long-term impact of the investment alternatives on the prepaid program is uncertain. The Prepaid College Program appeals to families because of its guarantee to pay tuition when the child attends college. However, in its absence, other college financing options of varying risk, return, and flexibility are available to prospective college students and their families, and the College Investment Plan is one such option.

The Prepaid College Board began offering college savings alternatives in fall 2002 through the Florida College Investment Plan. As of December 5, 2003, the investment plan had 9,325 participants and a market value of \$21.5 million.

The investment plan includes a number of investment choices of varying risk and return, many of which have higher expected returns than the prepaid plans. The investment plan options have the same tax-exempt benefits as the prepaid plans, but are similar to mutual funds in that there is generally no guarantee of a return.<sup>7</sup> However, investment plans may be used more flexibly for any qualified education expenses, such as supplies and graduate study, whereas prepaid plan holders are more limited in how they may spend their benefits.

Exhibit 2 shows both the higher returns that may be achieved by putting college savings into an investment plan and the additional risk that the investor takes on by doing so. The exhibit shows the return that a prepaid university tuition plan for a newborn beneficiary would earn if

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<sup>6</sup> Chapter 2003-391, *Laws of Florida*.

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<sup>7</sup> Our previous report, [OPPAGA Report No. 03-22](#), provides broader explanation of various state and federal college financing programs and of the 529 plans in particular, of which the Florida prepaid and investment plans are examples.

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- current program assumptions hold until the child starts college and
- the average tuition growth since the program's inception continues through the child's college years.

The exhibit compares prepaid plan returns under those two scenarios to what the same hypothetical beneficiary would earn with the various investment plans over the same time periods.

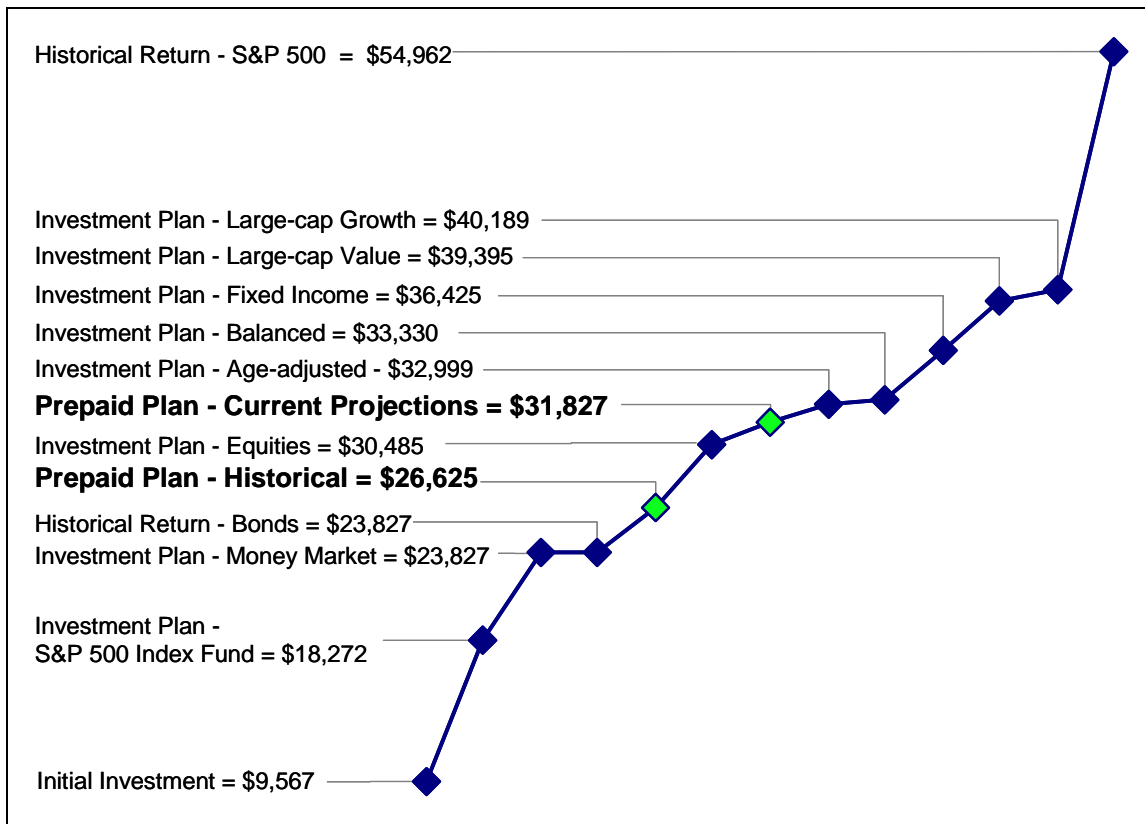
The exhibit shows that nearly all the investment plan options are expected to yield higher returns

than the prepaid plan.<sup>8</sup> However, the exhibit also shows the risk inherent in any of these plans. While historic S&P 500 returns (since the 1920s) would have far outpaced any other investment option, if future returns were similar to the last five year's average, then the S&P 500 would have underperformed all investments except the money market fund. Table A-1 in Appendix A provides additional detail on the value of each investment plan option relative to the two prepaid plan tuition inflation scenarios in the following exhibit.

<sup>8</sup> The exhibit assumes that the plan financed through an initial lump-sum payment. Due to the interest the board charges for financing the plan over time, the return for a program financed over time would be lower.

**Exhibit 2**

**College Investment Plan Offers Options with Potentially Higher Returns Than Prepaid College Plan, But These Options Pose More Risk to Investors Than a Prepaid Plan**



Notes: This assumes a prepaid university tuition plan purchased during the enrollment period starting in fall 2003. Investment plan returns are based on the average of the last five years. We considered this a conservative approach, since the last five years included a relatively long recession and downturn in the stock market. However, the S&P 500 investment plan for the last five years is an unusually low return, by historical comparison, and the fixed income fund had a very high return when compared with historical bond returns. Therefore, the exhibit also shows hypothetical investment values assuming long-term historical returns (since the 1920s) for those two investment types. All alternatives are inflated forward 18 years.

Source: OPPAGA analysis of Florida Prepaid College Program data.

## Recommendations ———

The board should base projected stock returns on the most up-to-date actuarial assumptions.

The board should conduct an experience study of delayed use of benefits and revise projections accordingly so that demographic assumptions match actual experience.

The board should consider shifting more of its portfolio into equities to raise its expected long-term asset return.<sup>9</sup>

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<sup>9</sup> If the Board's asset allocation study leads to a change in its investment policy, then its asset allocation should reflect the revised targets.

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**Florida Monitor:** <http://www.oppaga.state.fl.us/>

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Gary R. VanLandingham, OPPAGA Interim Director

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## Appendix A

# Comparison of Investment and Prepaid Plans

Table A-1 shows our comparison of the projected 18-year performance of the Prepaid College Plan under two tuition inflation scenarios with the projected performance of various College Investment Plan options. Our analysis assumes the investment options continue to earn their most recent five-year average rates of return. Note that these estimates are of average investment returns only and do not reflect differences in investment risk. The historical S&P 500 and bond returns may provide a more reasonable expected value of those investments over 18 years than do average returns over the last five years, but the difference between historical and five-year returns exemplifies the risks inherent in such investments.

The percentages in Table A-1 show how much higher or lower the investment options are than the two prepaid plan scenarios. For example, an investment in the 'Balanced' investment option would return 125% of a prepaid tuition plan's value (or 25% higher), assuming historical tuition inflation, and 105% of the prepaid plan (5% higher) under currently projected tuition increases.

**Table A-1**  
**College Investment Program Options Compared to Hypothetical Prepaid Program Returns**

Investment Option	Investment Option as a Percentage of the Prepaid Plan, Assuming Historical Tuition Inflation	Investment Option as a Percentage of the Prepaid Plan, Assuming Currently Projected Tuition Inflation
Investment Plan - S&P 500 Index Fund	69%	57%
Investment Plan - Money Market	89%	75%
Investment Plan - Equities	114%	96%
Investment Plan - Age-Adjusted	124%	104%
Investment Plan - Balanced	125%	105%
Investment Plan - Fixed Income	137%	114%
Investment Plan - Large-Cap Value	148%	124%
Investment Plan - Large-Cap Growth	151%	126%
<i>Historical Return - Bonds</i>	<i>89%</i>	<i>75%</i>
<i>Historical Return - S&amp;P 500</i>	<i>206%</i>	<i>173%</i>

Source: OPPAGA analysis of Florida Prepaid College Board data.

## Appendix B

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December 9, 2003

Mr. Gary VanLandingham  
Interim Director  
Office of Program Policy Analysis and Government Accountability  
Room 312  
111 West Madison Street  
Tallahassee, FL 32399-1475

Dear Mr. VanLandingham:

We have completed our review of the Florida Prepaid Program as of June 30, 2003. This letter and attachment represent our results of the review.

### Summary

The actuarial assumptions and methods used to value the program as of June 30, 2003 are conservative in some areas, aggressive in others, but reasonable in the aggregate. Changes that we believe should be considered are as follows:

- The valuation investment return assumption is tied mainly to the US Treasury Yield Curve, adjusted for the relatively small amounts in an equity fund and corporate bonds. At a weighted average of 4.35%, Florida has the lowest assumption of all states examined.
- There is no assumption for deferred college admission in the pricing and any unused tuition on the valuation date is assumed to be paid over the next 48 months. Since the investment return assumption is lower than the assumed tuition increases, deferrals create losses to the program and should be fully accounted for in both pricing and valuation. We recommend that an experience study be conducted on this issue.
- The low investment assumption used for pricing has the affect of increasing the prices for younger children versus older. The result is lump sum prices today that exceed current tuition and fee amounts. No other state program in our survey has this feature.

The program is currently over 100% funded and comfortably solvent. An alternative set of assumptions that reflected changes discussed in this report would result in a higher reserve. An increase in the assumed investment return would increase the reserve while a

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change in the deferred college admission assumption would decrease the reserve. The change in investment return assumption would have the greatest affect of the two.

### **Scope of Review**

We reviewed the actuarial assumptions and methods used to determine the assets and liabilities of the program for reasonableness and compliance with generally accepted methods and reporting. We also reviewed the actuarial assumptions and methods used to determine the pricing of contracts. To determine reasonableness of assumptions, we examined:

- Prepaid Tuition Plan actuarial valuations for Alabama, Michigan Plans B&C, Michigan Plan D, Mississippi, South Carolina, and Texas
- Current and historical Florida community college and university tuition, dormitory costs, and mandatory local fees
- Florida investment reports covering the period 1999-2003
- Florida actuarial reports from 1999-2003
- Florida pricing reports from 1999-2003
- Recent pricing reports from Alabama, Mississippi, South Carolina and Texas
- Gain and loss analyses performed by Ernst & Young actuaries, by source from 1999-2003 for Florida

### **Valuation Results and Assumptions**

Exhibit 1 is a comparison of Florida's program to the other surveyed states. These states have similar programs as Florida's and like Florida, have been in existence for a number of years. Other state prepaid tuition programs were excluded either by being too new, too small or too different in design. We felt that new programs and those with less than 5000 contracts did not offer a valid comparison.

We were able to obtain 2002 valuation reports for the comparison states. Most of the 2003 reports were not yet completed in time for this review. Therefore, we included Florida's 2002 valuation results in the exhibit for comparison purposes. We included the limited information for 2003 in Exhibit 2. Noteworthy from Exhibit 1 include:

- At 436,000 contracts for 2002, Florida has, by far, the largest program in the country. Texas is second at 140,000.
- Florida's funded ratio is second in this survey group behind Michigan's Plans B & C. This is consistent with fact that fixed income investments have done better than equities in the recent past. If the equity market achieves historic returns, programs that invest more heavily in equities, like Alabama, are expected to move back over 100% funded.
- Florida's investment return assumption is the lowest among this survey group.
- All states in the survey group have increased their assumed tuition increase assumption for valuation and pricing purposes. Florida's assumption is consistent with the other states.

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- Florida's valuation does not include a load for institution bias. All states' programs allow the student to select a school from a group of schools covered by the contract. Groups include 4-year universities, community and technical Colleges, etc. In many states the tuition and fees vary within a group. Experience has shown that students with fully paid contracts tend to select the more expensive schools within the available group, creating a bias. The tuition costs within a Florida group (e.g. 4 year university) are the same. Therefore, assuming no bias is a reasonable assumption.

From 7/1/1991 through 6/30/2003, the fund's geometric mean return has been 10.9%. The fixed income portion has returned 11.4% during the same period. This has resulted in substantial asset gains as the asset return assumption has been substantially lower. During the same period, the average US Treasury Yield Curve, weighted for Florida's duration, was about 6%. Clearly, the change in the investment return assumption for 2003 does not reflect historic returns by the assets. We also believe that the returns of the past 13 years are a very remote possibility in the next few given the current asset allocation, investment policy and the fact that interest rates are currently at historic lows.

Under normal circumstances an actuary selects the investment return assumption with one eye to the future and one to the past. Historic returns are not a guarantee of future outcomes. However, they are an excellent indicator for future returns. Therefore, the actuary must select the assumption based on the asset allocation, investment policy and history. For pension plans or other similarly invested assets, assumptions of 5.5% and 8% for corporate fixed income and equities, respectively, would be reasonable. Inclusion of these assets in the analysis would increase the expected asset return assumption into the 5% to 5.25% range.

However, the Florida program is operating and being valued differently than typical prepaid or pension plans. The normal assumption setting rules do not apply in the case of Florida. Although unique, it is not an unreasonable method for measuring the assets and liabilities of the program. Florida's actuary annually selects a discount rate for future benefit payments based on the current yield curve as provided by the financial consultants. Essentially, the assumption is set each year in a manner that guarantees that the accrued liability will be approximately equal to the assets. The actuary also includes an adjustment to the curve for the small portion of the assets held in equities.

For example, in the 2003 report the investment gain was \$458 million due to the decrease in interest rates. The same decrease in rates is reflected in the reduced discount rate assumption of 4.35%. This raised the liability by \$444 million, virtually canceling the investment gain. Increases in the interest rate will have the opposite affect – decreasing asset gains and lowering liabilities. Since the assumed investment return is 4.35% and the tuition increase is 8.5% for three years and 6.8% thereafter, the asset returns are not expected to keep up with Tuition inflation.

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The current valuation assumptions regarding deferral of college enrollment and the use of credits appear to be not reasonable. Many students defer the start of college and the Florida program permits up to 10 years of deferral. Bonds are purchased based on the duration until the student is expected to go to college. Therefore, at about high school graduation, the bond matures and is converted to cash. During the time between high school graduation and college enrollment, the assets of the program are expected to grow much slower than tuition. Investment returns are currently less than 5%, while tuition growth is at 8.5%. Recent unused tuition experience has created liability losses: \$81 and \$46 million during 2002 and 2003, respectively. It has also meant that the assets have been higher by about \$80 and \$45 million. The net effect is a reduction in the Reserve equal to the difference between the actual investment return and the tuition increases on the unused amounts. The unused tuition loss is determined as the present value of all unused tuition last year, adjusted for the coming year's expected payments, minus the unused tuition this year.

For example, if the asset return for 2003-2004 is 4.35% and tuition goes up 8.5%, than an unused tuition value of \$50 million would generate a net reduction in the reserve of \$2.1 million ( $\$50 \times (.085 - .0435)$ ). In the past, the difference between the investment return and the tuition assumptions was not as great. Therefore, gains and losses due to the assumption that students started college immediately would have a negligible effect. We do not have sufficient information to determine an appropriate assumption and therefore, recommend that Florida conduct an experience study.

All other assumptions such as mortality and withdrawal rates are reasonable and comparable to the other states examined.

### **Pricing**

Past actuarial valuations have consistently measured actuarial losses due to new contracts not being priced properly to reflect experience. The Board increased the 2003-04 contract prices via changes in the actuarial assumptions and to reflect the substantial increases in tuition, fees and dormitory expenses. The results are increases in excess of 20% over last year. Other states have had similar experiences and taken similar actions. Many states are now assuming that short term tuition increases will be significantly higher than long term. The Board's actions in this regard are prudent. The 2003 price increases have no bearing on the 2003 valuation since the actuary assumed no future sales in the valuation. If the 2003 prices are determined to be too low, actuarial losses will occur in 2004.

However, the pricing of contracts also includes the investment return assumption tied to the US Treasury yield rate. By changing this assumption from last year's rate, the cost of contracts increased substantially and had the affect of setting prices for most children above the current tuition costs. For an infant, the cost is virtually the same as today's tuition levels. This could be perceived as a disincentive to many parents. Future sales may need to depend on the guarantee aspect of the contracts. Parents who feel that they

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can generate a return greater than the increase in tuition will be more likely to invest in other products. On the other hand, the contract prices also reflect the assumption that kids go to college immediately. As pointed out earlier, this has not been the case and actuarial losses will occur when these beneficiaries delay college admission.

The Board has a difficult balance to maintain. Thus far they have minimized risk to the taxpayers by investing heavily in US Treasuries and some other fixed income assets in immunized funds. On a market value basis, this has worked well with the lone exception of deferred college enrollment. Although this policy has meant higher contract prices for parents, they are still purchasing in extraordinary numbers. An example of an alternative approach is Alabama. They are heavily invested in stocks and use a higher investment return assumption in the valuation and pricing. Prices decrease as you move from older to younger children, rather than increase.

This has meant significantly higher prices for future contracts. It has no bearing on current contracts since the actuary assumed no future sales in the valuation. The contract prices also reflect the assumption that kids go to college immediately. Perhaps I should add that to the section to point out that if they defer, actuarial losses are going to be created.

### **Conclusion**

The Florida program has been quite successful and is in good financial condition. Overall, the actuarial assumptions and methods are reasonable in the aggregate. We recommend further examination of the investment return assumptions and college deferrals. We will make ourselves available to discuss this report. If you have any questions, please feel free to contact me at 617-722-3571.

Sincerely,

/s/

Daniel W. Sherman, ASA, MAAA, EA  
Associate Principal and Consulting Actuary

Cc: Ed Macdonald  
Attachment

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Florida Prepaid College Program  
Valuation Comparison

Exhibit 1

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	<u>Florida</u>	<u>Florida</u>	<u>Alabama</u>	<u>Michigan B&amp;C</u>	<u>Michigan D</u>	<u>Mississippi</u>	<u>South Carolina</u>	<u>Texas</u>
Valuation Date	06/30/2003	06/30/2002	9/30/2002	9/30/3003	9/30/2002	6/30/2002	6/30/2002	8/31/2002
Contracts	543,000	436,000	55,000	38,000	12,000	13,000	5,000	140,000
Assets	\$5,274	\$3,935	\$571	\$725	\$193	\$113	\$75	\$1,344
Liabilities	\$5,105	\$3,556	\$636	\$641	\$206	\$150	\$87	\$1,500
Reserve	\$169	\$379	(\$65)	\$84	(\$13)	(\$37)	(\$12)	(\$156)
Funded Ratio	103.3%	110.7%	89.8%	113.1%	93.7%	75.3%	86.2%	89.6%
<u>Asset Mix</u>								
Equity	5%	6%	59%	0%	12%	45%	40%	48%
Fixed	95%	92%	37%	95%	88%	55%	60%	52%
Other	0%	2%	4%	5%	0%	0%	0%	0%
<u>Valuation Assumptions</u>								
Asset Return:	4.35%	5.57%	9.00%	5.27%	7.00%	7.80%	8.00%	8.25%
Tuition Increases	8.5% for 3 years, 6.8% thereafter	6.80%	7.10%	5.84% for 5 years, 7.30% thereafter	5.84% for 5 years, 7.30% thereafter	6.50%	8.5% for 1 year, 7.0% thereafter	8.1% for 3 years, 7.4% thereafter
Bias to Universities	0%	0%	5%	10%	10%	3%	3%	3%
Bias to CC's	0%	0%	0%	n/a	n/a	3%	3%	3%

\$ in Millions

*Progress Report*

Florida Prepaid College Program  
Valuation Comparison

Exhibit 2

	<u>Florida</u>	<u>Florida</u>	<u>Mississippi</u>	<u>Mississippi</u>	<u>South Carolina</u>	<u>South Carolina</u>
Valuation Date	06/30/2003	06/30/2002	06/30/2003	06/30/2002	06/30/2003	06/30/2002
Contracts	543,000	436,000	15,000	13,000	5,000	5,000
Assets	\$5,274	\$3,935	\$144	\$113	\$96	\$75
Liabilities	\$5,105	\$3,556	\$177	\$150	\$114	\$87
Reserve	\$169	\$379	(\$33)	(\$37)	(\$18)	(\$12)
Funded Ratio	103.3%	110.7%	81.4%	75.3%	83.9%	86.2%
<u>Asset Mix</u>						
Equity	5%	6%	45%	45%	40%	40%
Fixed	95%	92%	55%	55%	60%	60%
Other	0%	2%	0%	0%	0%	0%
<u>Valuation Assumptions</u>						
Asset Return:	4.35%	5.57%	7.80%	7.80%	6.8% for 2 years, 8% thereafter	8.00%
Tuition Increases	8.5% for 3 years, 6.8% thereafter	6.80%	6.50%	6.50%	8.5% for 2 years, 7.0% thereafter	8.5% for 1 year, 7.0% thereafter
Bias to Universities	0%	0%	3%	3%	3%	3%
Bias to CC's	0%	0%	3%	3%	3%	3%

\$ in Millions