



2015 Actuarial Valuation Report

Guaranteed Education Tuition Program



Office of the State Actuary

"Securing tomorrow's pensions today."

December 2015



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Letter of Introduction **v**

Executive Summary **1**

 Intended Use 3

 Comments on 2015 Results 3

 Funded Status of Current Contracts 4

 Projection of Current Contracts 5

 Key Assumptions 6

 Contract Data 6

Background **7**

Plan Description **11**

Best Estimate Results **15**

 Status of Current Contracts 17

 Reconciliations 18

 Closed Program Cash Flows 20

Sensitivity of Best Estimate Results **21**

 Sensitivity to Economic Assumptions 24

 Terminated Program Cash Flows 25

Actuarial Certification Letter **27**

Appendices **31**

 Appendix A ♦ Assumptions, Methods, and Data 33

 Appendix B ♦ Assets 40

 Appendix C ♦ Contract Data 42

 Appendix D ♦ Price-Setting Guidelines 43



Office of the State Actuary

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Letter of Introduction Guaranteed Education Tuition Actuarial Valuation Report As of June 30, 2015

December 2015

This report documents the results of an actuarial valuation of the Guaranteed Education Tuition (GET) program. The primary purposes of this valuation are to:

- ❖ Calculate the funded status of the contracts sold as of the valuation date and explain how the funded status should be used.
- ❖ Show how the funded status changes when we change our assumptions.

This report also provides information regarding the assumptions and methods used in the valuation of the GET program and explains the change in the surplus/(deficit) from the last valuation.

This report is organized in the following sections:

- ❖ Executive Summary.
- ❖ Background.
- ❖ Plan Description.
- ❖ Best-Estimate Results.
- ❖ Sensitivity of Best-Estimate Results.
- ❖ Actuarial Certification Letter.
- ❖ Appendices.

The Executive Summary provides the key results for current contracts. The Background and Plan Description sections explain how this valuation complements annual GET communications, how the Office of the State Actuary supports GET,



and provide a general understanding of the GET program. The next two sections provide detailed actuarial asset, liability, and cash flow information over the next 25 years. The appendices describe the key assumptions and methods, assets, participant data, and additional information used to prepare this valuation.

We encourage you to submit any questions you might have concerning this report to our regular address or our e-mail address at state.actuary@leg.wa.gov. We also invite you to visit GET's website (<http://www.get.wa.gov/index.shtml>) for further information regarding Washington's GET program.

Sincerely,

Matthew M. Smith, FCA, EA, MAAA
State Actuary

Graham Dyer
Actuarial Analyst

Executive Summary



Intended Use

The purpose of this report is to:

- ❖ Provide an annual update of the financial status of the Guaranteed Education Tuition (GET) program.
- ❖ Provide a snapshot view of the present value of current contracts' obligations and assets as of the valuation date.
- ❖ Provide a best-estimate projection of the program assuming no future unit sales.
- ❖ Show how these results could vary if key assumptions are altered.

All of this information should be used together to understand the current status of the GET program.

This report is one of several key documents related to GET throughout a fiscal year. This report is not intended to replace program information supplied by GET or other analysis supplied by the Office of the State Actuary (OSA). Please replace this report when a more recent report becomes available.

Comments on 2015 Results

Many factors can influence how actuarial valuation results change from one measurement date to the next. Those factors include changes in the covered population; changes in program provisions, assumptions, and methods; and experience that varies from our expectations.

Significant factors for this year's valuation include the following:

- ❖ Updated assumptions from a recent experience study including a higher assumed rate of investment return (increased funded status);
- ❖ Lower assumed rate of tuition growth in response to the recently enacted 2015-17 budget for higher education (increased funded status);
- ❖ Below expected investment returns for the plan year ending June 30, 2015 (lowered funded status);
- ❖ Refund of amortization payments for unredeemed units purchased since the beginning of the 2011-12 enrollment period (lowered funded status); and
- ❖ The addition of a minimum payout value of \$117.82 per unredeemed unit for current contracts (lowered funded status).

The GET Committee, at their August 2015 meeting, authorized a refund of all past and future amortization payments made for unredeemed units. We have included the present value of this refund, measured at June 30, 2015, as a payable in this year's valuation results. The GET Committee is also considering other refund options that could materially change the results of future actuarial valuation reports if the committee authorizes those refund options.

If the program is permanently closed or terminated, the Washington State Investment Board (WSIB) may change the program's asset allocation. That in turn may lead to a lower assumed rate of investment return. A lower assumed rate of return would increase the present value of program obligations and lower the program's funded status. The sensitivity analysis section demonstrates how the closed and terminated program measurements change when we assume lower rates of return.

The results of the valuation **exclude the impacts of differential tuition**. If differential tuition were implemented and included in the GET unit payout value, the results of this valuation could materially change.

Funded Status of Current Contracts

The following table summarizes the key measures of the program's funded status as of the current and prior valuation dates. The present value of future obligations represents the expected value, as of the valuation date, of all future payments from the program for current contracts only. The future payments represent both unit payout values and expenses. The future payments are discounted to the present value as of the valuation date using the valuation discount rate. The present value of the fund represents both assets currently on hand and the present value of monthly contract receivables discounted to the valuation date using the discount rate. Please see the **Best-Estimate Results** section of this report for funded status gain/loss and fund value reconciliation tables.

The funded status helps readers evaluate the health of the GET program at a single point in time. A history of funded status measured consistently over a defined period helps readers evaluate a plan's long-term ability to accurately assess and react to experience. A plan more/less than 100 percent funded is not automatically considered over-funded/at-risk.

The reserve/(deficit) indicates the excess/shortfall of the fund assets on hand to cover the program's obligations at the valuation date. The reserve level can be interpreted similarly to the funded status.

A self-sustaining program that collects all cash inflows up front, like GET, may want to aim for a long-term reserve of approximately 15 percent (or 115 percent funded status) in order to protect against unexpected adverse outcomes over the life of the program.

| Funded Status Summary | | |
|-------------------------------------|---------|---------|
| (Dollars in Millions) | 2015 | 2014 |
| Present Value of Future Obligations | \$2,042 | \$2,767 |
| Present Value of Fund | \$2,862 | \$2,928 |
| Funded Status | 140.1% | 105.8% |
| Reserve/(Deficit) | \$820 | \$161 |

Please note that the program's funded status is highly sensitive to short-term changes in tuition growth. For example, under an alternate tuition growth scenario, we assume the recently enacted tuition policy changes hold for one year only. Under that scenario, the funded status, measured at June 30, 2015, would fall from 140 to 125 percent and the reserve would drop from \$820 to \$568 million. The program's funded status is also sensitive to changes to the long-term assumed rate of investment return and tuition growth.

As a result of this sensitivity, readers should exercise caution when interpreting and reaching conclusions based on a single, point-in-time, measurement.

Please see the **Sensitivity of Best-Estimate Results** section for how these results could change under different assumptions.

Projection of Current Contracts

The funded status of the current contracts only tells part of the full story of the GET program. Consideration of the full history of the funded status along with a projection of future funded status provides the reader with a more complete picture of the program's health.

At the August 2015 GET Committee meeting, the GET committee decided to suspend unit sales for up to two years. The next table shows a projection of future funded status assuming no future unit sales. Along with the funded status, the table shows the expected assets, net cash flows, and present value of obligations (so the reader can assess the size of the program).

We advise readers to exercise caution when using, distributing, or relying on the projection. As with any projection, this projection will only occur if all assumptions are realized. Furthermore, this projection represents current contracts only (no future unit sales) and assumes no future changes to current program provisions.

A large expected reserve develops under this projection because we assume the current reserve of \$820 million will continue to grow with the long-term expected return of 6 percent each year. However, as noted earlier, if the program is permanently closed or terminated, WSIB may change the program's asset allocation. That in turn may lead to a lower assumed rate of investment return. A lower assumed rate of return would increase the present value of program obligations and lower the program's reserve and funded status.

The GET Committee has also authorized additional optional refunds which could materially change the results of this projection. We will not know the impact of these optional refunds until the window to request these refunds closes in

| Projection of Current Contracts Only (If all Assumptions are Realized) | | | | |
|---|---------------|----------------|----------------------|---------------|
| <i>(Dollars in Millions); BOY = Beginning of Year</i> | | | | |
| Fiscal Year | Funded Status | BOY Fund Value | BOY Obligation Value | Net Cash Flow |
| 2015 | 140% | \$2,921 | \$2,042 | (\$56) |
| 2016 | 144% | 2,831 | 1,966 | (34) |
| 2017 | 149% | 2,766 | 1,855 | (5) |
| 2018 | 154% | 2,732 | 1,772 | 3 |
| 2019 | 160% | 2,709 | 1,696 | 4 |
| 2020 | 166% | 2,689 | 1,620 | (4) |
| 2021 | 173% | 2,664 | 1,537 | (16) |
| 2022 | 183% | 2,630 | 1,441 | (27) |
| 2023 | 194% | 2,587 | 1,333 | (34) |
| 2024 | 209% | 2,539 | 1,216 | (42) |
| 2025 | 228% | 2,486 | 1,090 | (49) |
| 2026 | 254% | 2,427 | 955 | (51) |
| 2027 | 291% | 2,369 | 815 | (49) |
| 2028 | 343% | 2,315 | 674 | (45) |
| 2029 | 424% | 2,266 | 534 | (31) |
| 2030 | 552% | 2,232 | 404 | (13) |
| 2031 | 771% | 2,217 | 288 | 12 |
| 2032 | * | 2,228 | 191 | 40 |
| 2033 | * | 2,268 | 117 | 69 |
| 2034 | * | 2,337 | 66 | 93 |
| 2035 | * | 2,430 | 31 | 115 |
| 2036 | * | \$2,545 | \$12 | \$133 |

*Funded Status exceeds 1,000% due to very small obligation value.

~ Executive Summary ~

December 2016 and the refunds are processed. Please contact GET Staff for further details on how these refunds are administered.

Please see the **Sensitivity of Best-Estimate Results** section for how these results could change under different assumptions and how the results change if the program were terminated.

Key Assumptions

The results of this valuation are based on a number of assumptions including future economic conditions and purchaser behavior. Assumptions concerning purchaser behavior only apply when the program sells future units. We summarize the key assumptions in the next table. Please see the **Assumptions, Methods, and Data** section in the Appendix for a detailed listing of the assumptions used in this valuation.

| Key Assumptions | | |
|--------------------------|----------|---------|
| Annual Investment Return | | 6.0% |
| Annual Tuition Growth | | |
| | 2015-16 | (5.0%) |
| | 2016-17 | (10.5%) |
| | 2017-18 | 6.5% |
| | 2018-19 | 6.5% |
| | 2019-20 | 6.0% |
| | 2020-21 | 5.0% |
| | 2021-22 | 5.0% |
| | 2022-23 | 5.0% |
| | 2023-24 | 5.0% |
| | 2024-25 | 5.0% |
| | 2025-26 | 5.0% |
| | 2026-27+ | 5.0% |

Consistent with Chapter 36, Laws of 2015, 3rd Special Legislative Session, we assumed negative tuition growth rates for the next two academic school years and applied a minimum future payout value of \$117.82 per unit for all unredeemed units at June 30, 2015.

Contract Data

The table below summarizes the current contract and unit data used in this valuation for the plan year ending June 30, 2015, as well as for the prior year. Please see the **Best-Estimate Results** section for a table reconciling outstanding GET units from last year to this year. Please also see the **Contract Data** section in the Appendix for detailed information about when units were bought and are expected to be used.

| Contract Summary | | |
|-----------------------------|------------|------------|
| | 2015 | 2014 |
| Number of Current Contracts | 130,260 | 131,511 |
| Number of Units Outstanding | 21,662,612 | 22,324,308 |



Background



The Washington State Legislature created the Guaranteed Education Tuition (GET) program in 1997. Until recently, the program has sold units annually since its inception. However, the GET Committee decided to suspend unit sales for up to two years starting July 1, 2015.

RCW 28B.95 outlines the purpose of the GET program along with general guidelines regarding how it is administered. The statute establishes the five-member Committee on Advanced Tuition Payment (GET Committee). The GET Committee meets regularly to discuss the goals and status of the program, make administrative decisions, and set the unit price for the following enrollment period.

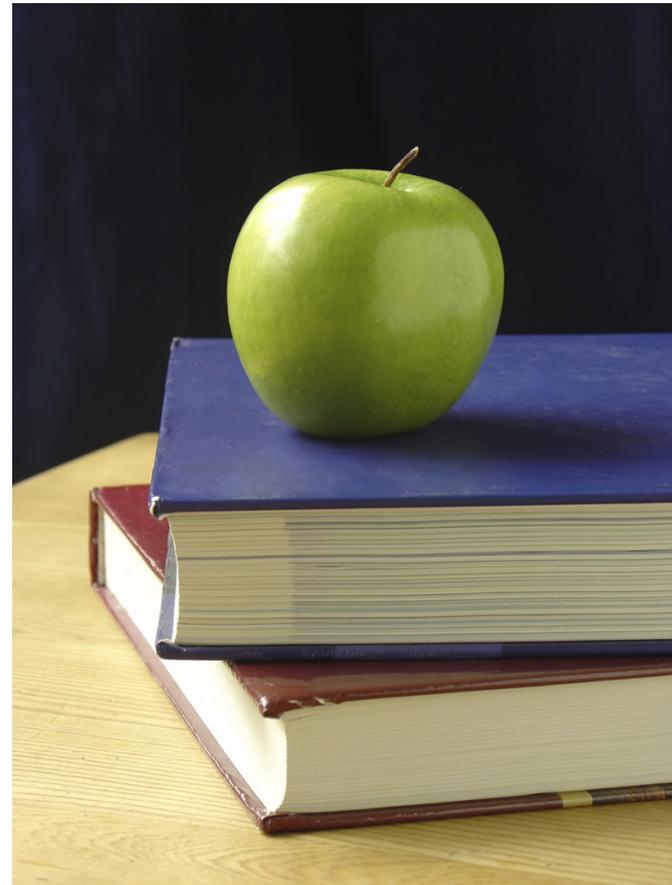
GET staff supports the functions of the program and the GET Committee by administering the program and staffing GET Committee meetings. GET staff also prepares studies and reports directed to the GET Committee by the Legislature. Communications from GET staff can be found on the [GET website](#).

Statute also defines the eight-member Legislative Advisory Committee (LAC). The LAC provides advice to the GET Committee and Office of the State Actuary (OSA) regarding the administration of the program.

OSA assists the GET Committee and the Legislature by providing actuarial services and consulting. OSA's three primary services for GET include:

- ❖ Prepare an annual actuarial valuation of GET (this document) for the GET Committee.
- ❖ Prepare unit price-setting analysis for the GET Committee.
- ❖ Consult, price, and communicate the effects of potential changes to the GET program for the GET Committee or the Legislature.

This valuation should not be used in isolation to understand the ongoing health of the GET program. Rather, this document should be used together with the annual report from GET staff, OSA's price-setting analysis (when performed), and any other studies or reports created by GET staff, OSA, or LAC.





Plan Description



A combination of RCW 28B.95 (determined by the Legislature) and the Guaranteed Education Tuition Program (GET) contract (determined by the GET Committee) make up the terms of the GET program. Statute provides general guidelines and certain rules for the GET Committee, whereas the GET contract states all specific details for the purchaser.

The main plan provisions are outlined below so the reader can get a sense for what cash flows occur, what parties

are involved, and what drives the results of the actuarial valuation. For a complete description of the plan provisions we direct you to GET's website, which includes both summarized plan provisions and the full GET contract.

The GET Committee decided to suspend unit sales for up to two years starting July 1, 2015. The graphic below illustrates the standard yearly process when unit sales are allowed.





Best Estimate Results



This section provides details of our best-estimate of the present value of obligations, assets, cash flow, and funded status information for the Guaranteed Education Tuition Program (GET). The first subsection shows the assets currently set aside for the contracts sold as of the valuation date, along with a history of the funded status. Also provided is a “gain/loss” table that illustrates how the funded status changed since last year, and a short series of tables that reconcile fund values and outstanding contracts from last year to this year. The last subsection illustrates how the program is expected to fare beyond the valuation date, assuming no future unit sales.

Please see the **Executive Summary** section for a description of this information and how it can be interpreted.

Status of Current Contracts

The next two tables display the program's current funded status, along with a funded status history.



| Funded Status Obligations | |
|--|---------|
| <i>(Dollars in Millions)</i> | |
| a) Present Value of Unit Redemptions | \$2,019 |
| b) Present Value of Administrative Expenses | \$23 |
| c) Present Value of Obligations (a+b) | \$2,042 |
| Fund Value | |
| <i>(Dollars in Millions)</i> | |
| d) Assets | \$2,664 |
| e) Present Value of Monthly Contract Receivables | \$256 |
| f) Present Value of Refunds Payable* | (\$59) |
| g) Present Value of Fund (d+e+f) | \$2,862 |
| Calculation of Funded Status | |
| <i>(Dollars in Millions)</i> | |
| h) Present Value of Fund (g) | \$2,862 |
| i) Present Value of Obligations (c) | \$2,042 |
| j) Ratio of Fund Value to Obligations (h/i) | 140.1% |
| k) Reserve / (Deficit) (h-i) | \$820 |

*A refund of \$60,147,401 with an assumed payment date of December 1, 2015.

Source: GET staff. Interest-only present value at June 30, 2015, with 6% annual interest.

| Funded Status History | |
|-----------------------|--------|
| Fiscal Year | Status |
| 2015 | 140.1% |
| 2014 | 105.8% |
| 2013 | 94.1% |
| 2012 | 78.5% |
| 2011 | 79.1% |
| 2010 | 86.2% |
| 2009 | 84.2% |
| 2008 | 109.5% |
| 2007 | 117.4% |
| 2006 | 108.8% |
| 2005 | 108.1% |
| 2004 | 104.5% |
| 2003 | 98.4% |
| 2002 | 89.6% |
| 2001 | 104.9% |
| 2000 | 113.4% |
| 1999 | 110.1% |

Reconciliations

The following table demonstrates actuarial gains and losses, expressed as funded status changes. We use gain/loss analysis to compare actual changes to assumed changes in the assets and obligations. We also use this analysis to determine:

- ❖ The accuracy of our valuation model and annual processing.
- ❖ Why funded status changed.
- ❖ The reasonableness of the actuarial assumptions.

Actuarial gains will increase funded status; actuarial losses will decrease funded status. Under a reasonable set of actuarial assumptions, actuarial gains and losses will offset over long-term experience periods.

| Gain/(Loss) Analysis Change in Funded Status by Source | |
|---|---------------|
| 2014 Funded Status | 105.8% |
| Changes in 2015 Funded Status | |
| Experience Study Assumption Changes | 4.7% |
| Expected Change in Funded Status | 0.8% |
| Program Obligations | |
| Tuition Payments | (1.0%) |
| Expenses | 0.1% |
| New Units Purchased | (3.0%) |
| Other | (0.3%) |
| Total Program Obligations Gains/Losses | (4.2%) |
| Program Assets | |
| Contributions | 5.5% |
| Distributions | 0.9% |
| Contract Receivables | (1.3%) |
| Investment Earnings | (5.0%) |
| Other | 0.0% |
| Total Program Assets Gains/Losses | 0.1% |
| Additional Changes | |
| Method Changes | 0.0% |
| Tuition Assumption Changes | 41.2% |
| Minimum Unit Payout Value | (4.3%) |
| Refund of Amortization Payments | (3.6%) |
| Total Additional Change Gains/Losses | 33.3% |
| Other Gains/Losses | (0.3%) |
| Total Change | 34.3% |
| 2015 Funded Status | 140.1% |

Note: Totals may not agree due to rounding.

The next three tables show reconciliations from last year to this year, for Market Value of Assets, Present Value (PV) of Monthly Contracts, and Outstanding Units.

| Change in Market Value of Assets | |
|---|----------------|
| <i>(Dollars in Millions)</i> | |
| 2014 Market Value of Assets | \$2,657 |
| Changes in Net Asset Value | |
| Interest and Other Investment Income | 44 |
| Capital Gains and Losses | 85 |
| Unrealized Gains and Losses | (107) |
| Expenses | (1) |
| Contributions | 146 |
| Distributions | (159) |
| Total Changes in Net Asset Value | 7 |
| 2015 Market Value of Assets | \$2,664 |

| Change in PV of Monthly Contract Receivables | |
|---|--------------|
| <i>(Dollars in Millions)</i> | |
| PV Monthly Contracts at June 30, 2014 | \$271 |
| Changes in PV Monthly Contracts | |
| Experience Study Assumption Changes | 18 |
| Advanced Payments | (5) |
| Actual Custom Monthly Payments Received in 2015 | (49) |
| Interest Adjustment | 16 |
| Account Downgrades | (2) |
| Account Conversion* | (2) |
| PV of Refunded Amortization Payments | (16) |
| PV of Monthly Contracts for New Units in 2015 | 31 |
| Other** | (7) |
| Total Changes in PV Monthly Contracts | (15) |
| PV Monthly Contracts at June 30, 2015 | \$256 |

*Conversion of Custom Monthly accounts to Lump-Sum accounts.

**Includes unexplained changes.

| Change in Number of Outstanding Units | |
|---|-------------------|
| Number of Outstanding Units at June 30, 2014 | 22,324,308 |
| New Units Purchased | 618,367 |
| Units Redeemed | (1,145,168) |
| Units Refunded | (70,117) |
| Units Defaulted | (27,424) |
| Units Downgraded* | (34,315) |
| Other | (3,039) |
| Number of Outstanding Units at June 30, 2015 | 21,662,612 |

*Customer-requested account changes.

Closed Program Cash Flows

The table below shows how the program is expected to fare beyond the valuation date, assuming no future unit sales. A closed program refers to the full benefits of the program being paid out to contracts sold before the valuation date, but no units being sold beyond the valuation date.

| Projection of Current Contracts Only (If all Assumptions are Realized) | | | | | | | | | | | |
|--|---------------|-------------------------|----------------------|-----------------------------|----------------------|---------------|-------------------|-------------------|---------------------|---------------|---------|
| <i>(Dollars in Millions); BOY = Beginning of Year</i> | | | | | | | | | | | |
| Fiscal Year | Funded Status | Unit Value ¹ | Number of Units Used | BOY Fund Value ² | BOY Obligation Value | Net Cash Flow | Cash Inflows | | | Cash Outflows | |
| | | | | | | | Monthly Contracts | Investment Return | State Contributions | Unit Use | Expense |
| 2015 ³ | 140% | \$118 | 1,624,608 | \$2,921 | \$2,042 | (\$56) | \$47 | \$154 | \$0 | (\$191) | (\$66) |
| 2016 | 144% | 118 | 1,869,851 | 2,831 | 1,966 | (34) | 43 | 151 | 0 | (220) | (8) |
| 2017 | 149% | 118 | 1,580,952 | 2,766 | 1,855 | (5) | 39 | 150 | 0 | (186) | (8) |
| 2018 | 154% | 118 | 1,478,659 | 2,732 | 1,772 | 3 | 35 | 150 | 0 | (174) | (8) |
| 2019 | 160% | 120 | 1,407,967 | 2,709 | 1,696 | 4 | 31 | 150 | 0 | (170) | (8) |
| 2020 | 166% | 126 | 1,366,518 | 2,689 | 1,620 | (4) | 27 | 150 | 0 | (173) | (8) |
| 2021 | 173% | 133 | 1,360,699 | 2,664 | 1,537 | (16) | 23 | 149 | 0 | (181) | (8) |
| 2022 | 183% | 139 | 1,340,700 | 2,630 | 1,441 | (27) | 20 | 148 | 0 | (187) | (8) |
| 2023 | 194% | 146 | 1,292,405 | 2,587 | 1,333 | (34) | 17 | 146 | 0 | (189) | (8) |
| 2024 | 209% | 154 | 1,243,541 | 2,539 | 1,216 | (42) | 14 | 144 | 0 | (191) | (8) |
| 2025 | 228% | 161 | 1,195,890 | 2,486 | 1,090 | (49) | 11 | 141 | 0 | (193) | (8) |
| 2026 | 254% | 169 | 1,117,657 | 2,427 | 955 | (51) | 8 | 139 | 0 | (189) | (8) |
| 2027 | 291% | 178 | 1,025,888 | 2,369 | 815 | (49) | 6 | 136 | 0 | (182) | (8) |
| 2028 | 343% | 187 | 930,292 | 2,315 | 674 | (45) | 5 | 133 | 0 | (174) | (9) |
| 2029 | 424% | 196 | 797,077 | 2,266 | 534 | (31) | 3 | 131 | 0 | (156) | (9) |
| 2030 | 552% | 206 | 658,022 | 2,232 | 404 | (13) | 2 | 129 | 0 | (136) | (9) |
| 2031 | 771% | 216 | 505,628 | 2,217 | 288 | 12 | 1 | 129 | 0 | (109) | (9) |
| 2032 | * | 227 | 363,124 | 2,228 | 191 | 40 | 0 | 131 | 0 | (82) | (9) |
| 2033 | * | 238 | 235,698 | 2,268 | 117 | 69 | 0 | 134 | 0 | (56) | (9) |
| 2034 | * | 250 | 147,006 | 2,337 | 66 | 93 | 0 | 139 | 0 | (37) | (9) |
| 2035 | * | 263 | 78,137 | 2,430 | 31 | 115 | 0 | 145 | 0 | (21) | (9) |
| 2036 | * | 276 | 32,993 | 2,545 | 12 | 133 | 0 | 152 | 0 | (9) | (10) |
| 2037 | * | 290 | 9,213 | 2,678 | 3 | 148 | 0 | 160 | 0 | (3) | (10) |
| 2038 | * | 304 | 72 | 2,826 | 0 | 159 | 0 | 169 | 0 | (0) | (10) |
| 2039 | * | 319 | 11 | 2,985 | 0 | 168 | 0 | 179 | 0 | (0) | (11) |
| 2040 | * | \$335 | 5 | \$3,153 | \$0 | \$178 | \$0 | \$189 | \$0 | (\$0) | (\$11) |

¹ Shown in dollars (not in millions).

² Fund Value includes present value of monthly contract receivables. Fund Value is used for Funded Status measurement since liabilities include monthly contract units.

³ 2015 Funded Status and net cash flow include present value of refunds payable; 2015 Fund Value excludes present value of refunds payable for this table display only.

*Funded Status exceeds 1,000% due to very small obligation value.

Sensitivity of Best Estimate Results



The best-estimate results are sensitive to the key assumptions used in the valuation. In this section, we calculated the results after varying the rate of investment return (as well as the discount rate) and tuition growth to illustrate the sensitivity of the results to these assumptions. The table in the first subsection shows these results assuming no further unit sales.

In the second subsection, we show the termination liability under RCW 28B.95.100 and the corresponding expected cash flows if the Guaranteed Education Tuition Program (GET) were to be terminated as of the valuation date. Program termination means anyone beyond four years of their first expected unit use year would be immediately paid out the current unit value. All participants within four years of unit use would continue to be able to use the program as is for up to ten years.



Sensitivity to Economic Assumptions

| Sensitivity of Results to Key Assumptions | | | | | | | | |
|---|-------------|----------|-------------|---------------|---------------|---------------|---------------|------|
| Closed Program* | | | | | | | | |
| (Dollars in Millions) | Best | | -2% | | -1% | | +1% | |
| | +1% Tuition | Estimate | -1% Tuition | Discount Rate | Discount Rate | Best Estimate | Discount Rate | |
| Present Value of Fund | \$2,862 | \$2,862 | \$2,862 | \$2,883 | \$2,872 | \$2,862 | \$2,852 | |
| Present Value of Obligations | \$2,170 | \$2,042 | \$1,929 | \$2,352 | \$2,189 | \$2,042 | \$1,911 | |
| Reserve / (Deficit) | \$692 | \$820 | \$933 | \$531 | \$684 | \$820 | \$941 | |
| Funded Status (as of June 30) | | | | | | | | |
| | 2015 | 132% | 140% | 148% | 123% | 131% | 140% | 149% |
| | 2016 | 135% | 144% | 153% | 124% | 134% | 144% | 154% |
| | 2017 | 138% | 149% | 160% | 127% | 138% | 149% | 161% |
| | 2018 | 142% | 154% | 167% | 129% | 141% | 154% | 168% |
| | 2019 | 146% | 160% | 174% | 131% | 145% | 160% | 175% |
| | 2020 | 150% | 166% | 183% | 134% | 149% | 166% | 184% |
| | 2021 | 156% | 173% | 193% | 137% | 154% | 173% | 194% |
| | 2022 | 162% | 183% | 205% | 141% | 161% | 183% | 206% |
| | 2023 | 170% | 194% | 220% | 147% | 169% | 194% | 222% |
| | 2024 | 181% | 209% | 240% | 153% | 179% | 209% | 242% |
| | 2025 | 194% | 228% | 266% | 161% | 192% | 228% | 268% |
| | 2026 | 213% | 254% | 301% | 173% | 210% | 254% | 304% |
| | 2027 | 239% | 291% | 350% | 188% | 235% | 291% | 354% |
| | 2028 | 275% | 343% | 422% | 211% | 271% | 343% | 426% |
| | 2029 | 332% | 424% | 531% | 245% | 326% | 424% | 538% |
| | 2030 | 421% | 552% | 706% | 298% | 413% | 552% | 716% |
| | 2031 | 572% | 771% | ** | 388% | 560% | 771% | ** |
| | 2032 | 844% | ** | ** | 549% | 823% | ** | ** |
| | 2033 | ** | ** | ** | 858% | ** | ** | ** |
| | 2034 | ** | ** | ** | ** | ** | ** | ** |

*Based on current contracts only, no future unit sales.

**Funded Status exceeds 1,000% due to very small obligation value.

~ Sensitivity of Best-Estimate Results ~

Terminated Program Cash Flows

If program termination were to occur, the present value of obligations as of the valuation date would be \$2.136 billion and the fund value would be \$2.628 billion (including refunds payable), which would result in a reserve of \$493 million and a funded status of 123 percent. This represents the funded status if the program were terminated at the valuation date and before the immediate payout occurs. The increase in

liability (compared to Closed Program projection) is due to paying out a portion of the units sooner than expected, resulting in lost assumed investment earnings. The decrease in fund value (compared to Closed Program projection) is due to a portion of the outstanding monthly contracts being cancelled, resulting in lower than expected contract receivables. The table below shows these results.

| Projection of Program Termination (If All Assumptions are Realized) | | | | | | | | | | | |
|---|---------------|-------------------------|----------------------|-----------------------------|----------------------|---------------|-------------------|-------------------|---------------------|---------------|---------|
| <i>(Dollars in Millions); BOY = Beginning of Year</i> | | | | | | | | | | | |
| Fiscal Year | Funded Status | Unit Value ¹ | Number of Units Used | BOY Fund Value ² | BOY Obligation Value | Net Cash Flow | Cash Inflows | | | Cash Outflows | |
| | | | | | | | Monthly Contracts | Investment Return | State Contributions | Unit Use | Expense |
| 2015 ³ | 123% | \$118 | 10,871,547 | \$2,687 | \$2,136 | (\$1,210) | \$11 | \$120 | \$0 | (\$1,281) | (\$60) |
| 2016 | 155% | 118 | 1,869,851 | 1,463 | 945 | (134) | 8 | 80 | 0 | (220) | (1) |
| 2017 | 170% | 118 | 1,580,952 | 1,317 | 774 | (110) | 5 | 73 | 0 | (186) | (1) |
| 2018 | 191% | 118 | 1,478,659 | 1,198 | 627 | (107) | 2 | 66 | 0 | (174) | (1) |
| 2019 | 224% | 120 | 1,407,967 | 1,084 | 484 | (111) | 0 | 60 | 0 | (170) | (1) |
| 2020 | 287% | 126 | 1,106,317 | 968 | 337 | (87) | 0 | 54 | 0 | (140) | (1) |
| 2021 | 412% | 133 | 826,069 | 876 | 213 | (61) | 0 | 49 | 0 | (110) | (1) |
| 2022 | 723% | 139 | 550,861 | 809 | 112 | (31) | 0 | 46 | 0 | (77) | (0) |
| 2023 | * | 146 | 270,248 | 772 | 39 | 5 | 0 | 45 | 0 | (40) | (0) |
| 2024 | * | \$154 | 0 | \$771 | \$0 | \$46 | \$0 | \$46 | \$0 | \$0 | \$0 |

¹ Shown in dollars (not in millions).

² Fund Value includes present value of monthly contract receivables. Fund Value is used for Funded Status measurement since liabilities include monthly contract units.

³ 2015 Funded Status and net cash flow include present value of refunds payable; 2015 Fund Value excludes present value of refunds payable for this table display only.

*Funded Status exceeds 1,000% due to very small obligation value.

~ Sensitivity of Best-Estimate Results ~

We also show how our best-estimate results under program termination change when assuming lower discount rates. If the program is terminated, the Washington State Investment Board (WSIB) may change the program's asset allocation. That in turn may lead to a lower assumed rate of investment return.

| Sensitivity of Results to Key Assumptions | | | | |
|--|------|-----------------|-----------------|-----------------|
| Terminated Program* | | | | |
| | | Best | -1% | -2% |
| | | Estimate | Discount | Discount |
| | | | Rate | Rate |
| <i>(Dollars in Millions)</i> | | | | |
| Present Value of Fund | | \$2,628 | \$2,629 | \$2,629 |
| Present Value of Obligations | | \$2,136 | \$2,175 | \$2,216 |
| Reserve / (Deficit) | | \$493 | \$454 | \$412 |
| Funded Status (as of June 30) | | | | |
| | 2015 | 123% | 121% | 119% |
| | 2016 | 155% | 149% | 143% |
| | 2017 | 170% | 162% | 154% |
| | 2018 | 191% | 180% | 169% |
| | 2019 | 224% | 208% | 192% |
| | 2020 | 287% | 261% | 237% |
| | 2021 | 412% | 366% | 324% |
| | 2022 | 723% | 629% | 541% |
| | 2023 | ** | ** | ** |
| | 2024 | ** | ** | ** |

*Program is terminated; all contracts with expected use year beyond 4 years immediately refunded.

**Funded Status exceeds 1,000% due to very small obligation value.

Actuarial Certification Letter





Office of the State Actuary

"Securing tomorrow's pensions today."

Actuarial Certification Letter Guaranteed Education Tuition Actuarial Valuation Report As of June 30, 2015

December 2015

This report documents the results of an actuarial valuation for the Washington Guaranteed Education Tuition (GET) Program defined under Chapter 28B.95 of the Revised Code of Washington. The primary purpose of this report is to update the annual financial status of the program through the calculation of the funded status for current contracts in combination with the projection of the expected funded status in future years. This report also provides information on the sensitivity of the valuation results to key assumptions and developments in the program since the last valuation. This report should not be used for other purposes. Please replace this report with a more recent report when available.

The results summarized in this report involve calculations that require assumptions about future economic and demographic events. We developed the assumptions used in this valuation during the *2015 GET Experience Study*. Copies of the *2015 GET Experience Study* are available upon request.

Standards of practice that specifically apply to prepaid tuition programs have not been defined within the actuarial profession. We used the standards of practice for pension systems where possible to guide the actuarial valuation of GET. In our opinion, the assumptions, methods, and calculations used in the valuation are reasonable and appropriate for the primary purpose as stated above, and are in conformity with generally accepted actuarial principles and standards of practice as of the date of this publication. The use of another set of assumptions and methods, however, could also be reasonable and could produce materially different results. Actual results may vary from our expectations.

The GET Committee authorized current contact holders the choice to remain in the program or refund their unredeemed units during a specified window, subject to the newly established minimum payout value of \$117.82 per unit. The window for optional refunds was authorized after the measurement date for this year's valuation and will not conclude until December, 2016. We will include the impact of these refunds in future actuarial valuation reports after the refunds are known.

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The results of the valuation also **exclude the impacts of differential tuition**. If differential tuition were implemented and included in the GET unit payout value, the results of this valuation could materially change. This analysis will need to be updated in the future if changes are made to the GET program or the Legislature enacts major reform to current tuition policy.

The GET Program staff provided the participant and historical data to us. We checked the data for reasonableness as appropriate based on the purpose of this valuation. The Washington State Investment Board provided financial and asset information. We relied on all the information provided as complete and accurate. In our opinion, this information is adequate and substantially complete for the purposes of this valuation.

No members of the GET Committee or their respective staff attempted to bias our work product. We are not aware of any matters that impacted the independence and objectivity of our work.

We intend this valuation to be used by the GET Committee during the 2016 Fiscal Year only. We advise readers of this valuation to seek professional guidance as to its content and interpretation, and not to rely upon this communication without such guidance. Please read the analysis shown in this valuation as a whole. Distribution of, or reliance on, only parts of this valuation could result in its misuse and may mislead others.

Consistent with the actuarial Code of Professional Conduct, I, Matthew Smith, must disclose any potential conflict of interest. I have purchased units in GET; however, this does not impair my ability to act fairly. I have performed all analysis without bias or influence. The GET Committee contracted with OSA to perform this valuation, and I supervised the actuarial analysis performed.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this report is intended to be complete, we are available to offer extra advice and explanations as needed.

Sincerely,

Matthew M. Smith, FCA, EA, MAAA
State Actuary

Lisa Won, ASA, FCA, MAAA
Deputy State Actuary

Appendix A ♦ Assumptions, Methods, and Data

The assumptions used in this report can be divided into three broad categories: economic, demographic, and behavioral. With the *2015 GET Experience Study*, we updated assumptions within each category. We discuss the assumptions used in this valuation throughout the next three subsections. However, for more detailed information on the updates to these assumptions, please see the **2015 GET Experience Study Letter**. This letter is available upon request.

Economic Assumptions

The two key economic assumptions are expected investment returns and expected tuition growth. The next table shows what we have assumed for this valuation.

| Key Economic Assumptions | | Expected investment returns are based on the Washington State Investment Board's (WSIB) Capital Market Assumptions (CMA) and current asset allocation over a fifteen-year period. We relied on the CMAs provided by WSIB as accurate and have reviewed them |
|---|----------------|---|
| Investment Returns | 6.00% per year | |
| Tuition Growth (<i>Excludes Differential Tuition</i>) | | |
| 2015-16 | (5.0%) | |
| 2016-17 | (10.5%) | |
| 2017-18 | 6.5% | |
| 2018-19 | 6.5% | |
| 2019-20 | 6.0% | |
| 2020-21 | 5.0% | |
| 2021-22 | 5.0% | |
| 2022-23 | 5.0% | |
| 2023-24 | 5.0% | |
| 2024-25 | 5.0% | |
| 2025-26 | 5.0% | |
| 2026-27+ | 5.0% | |

for reasonability. We've implicitly assumed the current 60 percent global equity / 40 percent fixed income portfolio will remain unchanged throughout the projection period. The expected investment returns are used as the discount rate for the liabilities and receivables as well as the investment returns in our closed group projections.

The tables below display the development of the tuition growth assumptions we used to prepare the valuation results. We updated our tuition growth model after the recent experience study. We use the tuition growth model, information from the most recently enacted state budget, and our professional judgment to set tuition growth rates. The tuition growth model has three main structural components.

1. **Long-Term Inflationary Growth** — Represents the increase in total dollars spent on instruction. Over the last twenty years, this has increased by about 4.5 percent per year. We assume it will grow by 5.0 percent in the future. In Step 1 of our model, we estimate the total dollars required for the Cost of Instruction (COI) for undergraduate programs at the University of Washington. Consistent with the results of our recent experience study, we then grow that amount by an assumed long-term inflationary growth factor of 5 percent per year.
2. **State Funding** — Represents the increase or decrease in the percent of total dollars assumed to come from the state versus tuition. Historically, it has decreased from approximately 80 percent

(in 1990) to 32 percent (in 2015). This has put upward pressure on tuition since tuition increased to replace lost state funding. We assume state funding will continue to decline to about 25 percent after the next biennium and level out. As a result, we project tuition will increase above long-term inflationary levels over the period where state funding is assumed to decrease. In Step 2, we assume every lost dollar of state support is replaced by an increased dollar from tuition. The resulting growth in tuition dollars derives the tuition growth rate after state funding.

| Tuition Growth Assumption Structure | | | | | | |
|-------------------------------------|---------------|---------------------|------------------------|---------------|-----------------|------------------------------------|
| (Dollars in Thousands) | | Step 1 – Inflation | Step 2 – State Funding | | | |
| School Year | Total Dollars | Inflationary Growth | Assumed State % | State Dollars | Tuition Dollars | Tuition Growth After State Funding |
| 2014-15 | \$810,786 | 11.8% | 31.3% | \$253,896 | \$556,890 | 7.9% |
| 2015-16 | 855,199 | 5.5% | 28.8% | 246,471 | 608,728 | 9.3% |
| 2016-17 | 917,389 | 7.3% | 31.8% | 291,886 | 625,503 | 2.8% |
| 2017-18 | 963,258 | 5.0% | 29.5% | 284,592 | 678,666 | 8.5% |
| 2018-19 | 1,011,421 | 5.0% | 27.3% | 275,838 | 735,583 | 8.4% |
| 2019-20 | 1,061,992 | 5.0% | 25.0% | 265,498 | 796,494 | 8.3% |
| 2020-21 | 1,115,092 | 5.0% | 25.0% | 278,773 | 836,319 | 5.0% |
| 2021-22 | 1,170,846 | 5.0% | 25.0% | 292,712 | 878,135 | 5.0% |
| 2022-23 | 1,229,388 | 5.0% | 25.0% | 307,347 | 922,041 | 5.0% |
| 2023-24 | 1,290,858 | 5.0% | 25.0% | 322,714 | 968,143 | 5.0% |
| 2024-25 | 1,355,401 | 5.0% | 25.0% | 338,850 | 1,016,551 | 5.0% |
| 2025-26+ | \$1,423,171 | 5.0% | 25.0% | \$355,793 | \$1,067,378 | 5.0% |

Historical data provided by the University of Washington.

Note: State and tuition dollars in a given year are used to develop tuition increase assumptions for the following year.

- Scaling Factor** — Represents an adjustment to the increase or decrease in assumed tuition in response to a corresponding decrease or increase in state funding. For every dollar decrease (increase) in state funding, we scale the assumed tuition increases (decreases) by a fraction of that dollar, because past experience indicates that not every dollar of state funding is replaced by an increased dollar of tuition growth. Our scaling factor assumption is 75 percent. In Step 3 of the model, we adjust the tuition growth rates after state funding by our scaling factor assumption, but not below our long-term assumption of 5 percent. Lastly, we set the first two years of tuition growth rates consistent with the recently enacted state budget for higher education and smooth the growth rates for years thereafter.

| Tuition Growth Assumption Structure | | | | |
|--|------------------------------------|---------------------------|-----------------------------|---------------------------|
| Step 3 – Set Tuition Growth Assumption | | | | |
| School Year | Tuition Growth After State Funding | Apply 75% Scaling Factor* | Tuition Growth in 2015-17** | Tuition Growth Assumption |
| 2015-16 | 9.3% | 7.0% | (5.0%) | (5.0%) |
| 2016-17 | 2.8% | 5.0% | (10.5%) | (10.5%) |
| 2017-18 | 8.5% | 6.4% | | 6.5% |
| 2018-19 | 8.4% | 6.3% | | 6.5% |
| 2019-20 | 8.3% | 6.2% | | 6.0% |
| 2020-21 | 5.0% | 5.0% | | 5.0% |
| 2021-22 | 5.0% | 5.0% | | 5.0% |
| 2022-23 | 5.0% | 5.0% | | 5.0% |
| 2023-24 | 5.0% | 5.0% | | 5.0% |
| 2024-25 | 5.0% | 5.0% | | 5.0% |
| 2025-26+ | 5.0% | 5.0% | | 5.0% |

*Set value equal to the greater of (a) 75% of tuition growth after state funding or (b) long-term growth assumption of 5%.

**Chapter 36, 2015 Laws 3rd Special Legislative Session.

Chapter 36, Laws of 2015, 3rd Special Legislative Session, also establishes a policy to limit resident, undergraduate tuition growth rates to no more than the annual growth rate in the median state wage. If future Legislatures continue this policy, we would expect future tuition growth rates closer to 3-4 percent. However, because the current Legislature cannot obligate a future Legislature, the sustainability of the current higher education budget is not certain, and because past history consistently demonstrates that higher education tuition policy changes remain for short-term periods only, we have assumed tuition growth rates after the next two years that we believe are more reflective of long-term practices and consistent with our expectations for the future.

The program's funded status is highly sensitive to short-term changes in tuition growth. For example, under an alternate tuition scenario (as shown in the table below), we assume the recently enacted tuition policy changes hold for only one year. Under that scenario, the funded status, measured at June 30, 2015, would fall from 140 percent to 125 percent and the reserve would drop from \$820 million to \$568 million.

| Tuition Growth Assumption - Alternate Growth Scenario | |
|--|----------------------------------|
| School Year | Annual Tuition Growth |
| 2015-16 | (5.0%) |
| 2016-17 | 8.0% |
| 2017-18 | 5.0% |
| 2018-19 | 5.0% |
| 2019-20 | 5.0% |
| 2020-21 | 5.0% |
| 2021-22 | 5.0% |
| 2022-23 | 5.0% |
| 2023-24 | 5.0% |
| 2024-25 | 5.0% |
| 2025-26+ | 5.0% |

The tuition growth assumption does not consider differential tuition. The impact from differential tuition could vary based on how it interacts with the current contracts. If the payout value is tied to the highest rate of differential tuition, the tuition growth assumption would likely increase. However, if the payout value were tied to the lowest rate of differential tuition, the tuition growth assumption could actually decrease, as base tuition may not need to increase as fast with higher differential tuition making up the difference.

We assumed expenses would grow at a rate of 3.50 percent per year. Consistent with the recent experience study and input from GET staff, we removed the distribution expense and monthly payment plan expense used in prior actuarial valuations. For the 2015 actuarial valuation, we assume maintenance expenses of \$20.06 per contract per year plus assumed growth for each year beyond the valuation date.

Demographic Assumptions

As discussed in the body of this report, the GET Committee suspended future enrollments into the program for up to two year beginning July 1, 2015. In prior valuations, we assumed new entrants (or future purchasers) would enroll in the program during subsequent years. Under the current enrollment suspension, we assume no new entrants. We include in this report the updated assumptions on future purchasers from the experience study for context and future reference only.

We based the new entrant cohort on an average of the previous three years' new sales data provided by GET staff, in this case 2012 through 2014. We assumed each future cohort would have this same makeup.

The table to the right shows the percent of the population in each of the 38 combinations. It also shows the number of units each combination purchases and the length of the monthly payment plan for those who select that payment option. For example, 1.9 percent of the people are assumed to purchase 80 lump sum units that are kept for six years before being used.

To illustrate how we use the table, for every one hundred purchasers, approximately:

- ❖ Sixty-nine select the lump-sum payment option and each buys, on average, 74 units.
- ❖ Thirty-one select the monthly payment plan option and each buys, on average, 115 units, and pay for these units over an average of 142 months.

| Future Purchaser Cohort Assumption | | | | | |
|------------------------------------|--------------|--------------------------|------------------------|--------------------------------------|---|
| Length in Program (Years) | % Lump Sum | Lump Sum Units Purchased | % Monthly Payment Plan | Monthly Payment Plan Units Purchased | Length of Monthly Payment Plan (Months) |
| 2 | 0.2% | 94 | 0.0% | 0 | 0 |
| 3 | 1.6% | 78 | 0.2% | 76 | 25 |
| 4 | 1.0% | 77 | 0.4% | 79 | 37 |
| 5 | 1.5% | 82 | 0.7% | 78 | 48 |
| 6 | 1.9% | 80 | 0.9% | 101 | 59 |
| 7 | 2.2% | 89 | 1.2% | 93 | 69 |
| 8 | 2.7% | 99 | 1.3% | 106 | 80 |
| 9 | 2.9% | 93 | 1.4% | 113 | 92 |
| 10 | 3.1% | 84 | 1.5% | 110 | 102 |
| 11 | 3.0% | 97 | 1.7% | 108 | 114 |
| 12 | 3.3% | 87 | 1.8% | 119 | 125 |
| 13 | 3.6% | 89 | 1.7% | 120 | 132 |
| 14 | 5.0% | 79 | 2.5% | 114 | 144 |
| 15 | 4.8% | 62 | 2.2% | 111 | 156 |
| 16 | 5.5% | 63 | 2.6% | 115 | 163 |
| 17 | 6.5% | 56 | 2.7% | 121 | 175 |
| 18 | 12.0% | 59 | 4.2% | 123 | 190 |
| 19 | 8.3% | 76 | 3.9% | 133 | 199 |
| 20 | 0.0% | 7 | 0.0% | 133 | 112 |
| Total | 69.1% | 74 | 31.8% | 115 | 142 |

Behavioral Assumptions

We've made the following assumptions for GET contract holders. As a result of the last experience study, we removed the **Rate of Monthly Payment Default** and **Rate of Refund** from our model. We found those assumptions unnecessary for the purposes of this measurement. However, those assumptions could be necessary for another measurement. Please see the **2015 GET Experience Study Letter** for further details.

- ❖ **Rate of Redemption** — The following shows what percent of a contract holder's total units we expect will be used upon reaching college (or their "use year").

In prior valuations, we projected future unit sales to model new unit purchases. For this valuation, we assumed no future purchasers will enter the program due to the suspension of future unit sales. The following projected unit sales description should be used for informational purposes only.

| Redemption | |
|------------|------|
| Year | Rate |
| 0 | 20% |
| 1 | 20% |
| 2 | 20% |
| 3 | 20% |
| 4+ | 20% |

During the experience study we updated our Projected Unit Sales model. This model projects unit sales based on an assumed number of units sold corresponding to an average premium, where premium is defined to be the unit price above the payout value of the unit. We adjusted expected future units based on the expected future premium. An increase/decrease in premium would result in a decrease/increase in expected unit sales. For more details, please see the experience study.

In prior valuations, we assumed the GET Committee would continue to follow their past price-setting guidelines

throughout the projection period. Please see **Appendix D** for details on the current price-setting guidelines.

We assumed the GET Committee would price future units in line with the expected investment returns and tuition growth discussed in the Economic Assumptions subsection.

We assumed that neither the Legislature nor the GET Committee will make changes to the program over the projection period.

We further assumed no significant changes will be made to tuition policy over the projection period.

Methods

We valued the current contract and asset values in GET by estimating the future tuition payments (cash outflow), administrative expenses (cash outflow), and monthly contract payments (cash inflow). The estimation of future cash flows required assumptions about:

- ❖ When the contract holder will redeem their units.
- ❖ Whether they will stop making payments on their monthly payment plan.
- ❖ What tuition will be in future years.
- ❖ What administrative expenses will be over time.

We discounted these cash flows to today's value in order to calculate the plan's funded status at the valuation date. Discounting the cash flows to today's value requires an assumption regarding how fast invested money will grow over time. The idea is that \$1 today is worth more next year

(\$1.06 in this case) due to investment earnings. Discounting moves the opposite way and states that \$1.06 a year from now will be worth \$1 today. Discounting all of the cash flows to one common year allows for an apples-to-apples comparison of all cash flows.

Due to the suspension of future unit purchases, we did not perform open group analysis with this valuation report. In prior valuations, we estimated the impact of future contract holders, however the following paragraphs detail our approach for valuing the open group.

Unlike the current contract holders, we did not have data on who will purchase GET units in the future. So, the first step we would take was to estimate the makeup of these future purchasers. We refer to the entire group of purchasers each year as a “cohort”. The cohort for each purchase year was made up of 38 different types of people. The 38 types of people represented a mixture of the entire population. We expected each of the 38 types of people to remain in the program between two to 20 years before starting to use their units, and were either lump sum or monthly payment plan purchasers. The 38 combinations were made up of the nineteen different contract lengths multiplied by the two different payment options. The percent of the population expected to be in each of the combinations is shown in the assumption section.

Next, we valued the 38 types of people in each cohort. We valued each cohort in the same way we valued the current contract holders in the actuarial valuation. We estimated the future tuition payments (cash outflow), administrative expenses (cash outflow), and monthly contract payments (cash inflow). The estimation of future cash flows required assumptions about when contract holders will redeem their units, whether they will stop making payments on their monthly payment plans, how tuition will change in future years, and what administrative expenses will be over time.

We then discounted these cash flows to the cohort’s entry year. We repeated this process for each year in our 25-year projection, since we expected a new cohort to enter each year.

We then created a projection of the GET program that measures every key element during each future year.

For example, we started with the program’s current status — present value of obligations, assets, funded status, and unit price/value. Throughout the next year, investment returns occur at our assumed rate, tuition grows at our assumed rate, people cash in tuition units at our assumed rate, and people buy new units at our assumed rate (discussed above in the assumption subsection). This particular projection moves the program forward assuming experience matches our assumptions exactly. We called this a deterministic projection because the current program and assumptions determine the future.

At the end of the first year, a valuation is performed and the new obligations, assets, and funded status are calculated. Based on the funded status from the valuation, we make an assumption for how the GET Committee will set a new price for the following year (according to their current price-setting guidelines).

Once the new price is set, we have projected one year. We repeat this process 25 times during our 25-year projection. At the end of the projection, we have developed our “expected” path that the GET program will follow. Of course, in reality, the future will be different than we assume. We believe there is a 50 percent chance the future will be better for the program, and a 50 percent chance the future will be worse for the program.

Data

We used the contract data file provided by GET staff. We relied on this data file as accurate and complete since we value each entry in the file. We did not perform an audit of this data, but believe it is reasonable for the purposes of our work. We used data entries such as:

- ❖ Program Year — The contract holder's entry year into the program.
- ❖ Use Year — When the contract holder expects to start using units for tuition.
- ❖ Payment Amount — The monthly amount the contract holder owes on their payment plan.
- ❖ Payments Due — The number of monthly payments left on their monthly payment plan.
- ❖ Units Outstanding — The number of units the contract holder currently owns (including units still being paid for in the monthly payment plan).

We currently employ a data-grouping process to reduce the amount of time it takes to run a valuation. This process groups similar individuals based upon the Payment Year, Use Year, and 12-month breakdowns for Payments Due. However, we plan to remove this grouping method from future actuarial valuations and other closed-group projections.

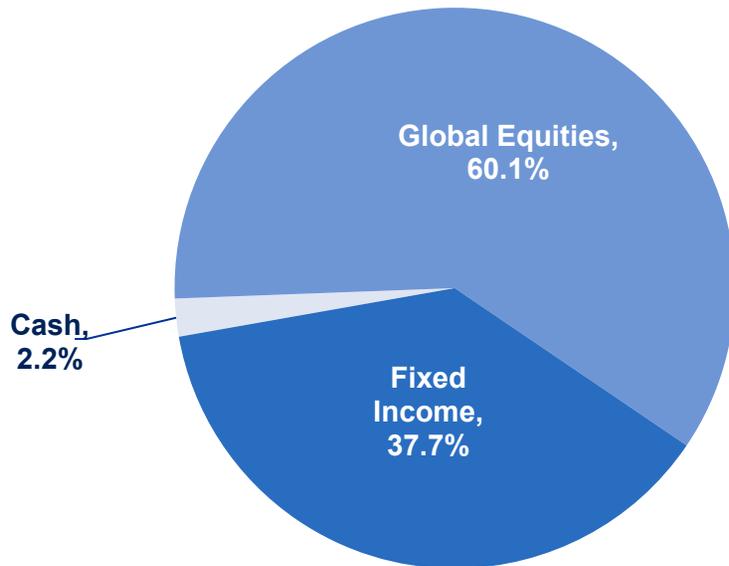
To set our tuition growth assumption we studied the historical tuition data in the table below. We also examined average tuition growth over different periods (see the bottom of the table).

| Year | Tuition Growth | Year | Tuition Growth |
|-----------------------------------|----------------|---------|----------------|
| 1982-83 | 11.0% | 1999-00 | 3.7% |
| 1983-84 | 11.2% | 2000-01 | 3.4% |
| 1984-85 | 0.0% | 2001-02 | 7.1% |
| 1985-86 | 22.7% | 2002-03 | 16.0% |
| 1986-87 | 0.0% | 2003-04 | 7.0% |
| 1987-88 | 7.9% | 2004-05 | 6.6% |
| 1988-89 | 3.8% | 2005-06 | 6.8% |
| 1989-90 | 1.7% | 2006-07 | 6.9% |
| 1990-91 | 6.9% | 2007-08 | 6.8% |
| 1991-92 | 11.5% | 2008-09 | 6.8% |
| 1992-93 | 3.4% | 2009-10 | 13.1% |
| 1993-94 | 12.4% | 2010-11 | 13.1% |
| 1994-95 | 14.8% | 2011-12 | 19.0% |
| 1995-96 | 3.9% | 2012-13 | 15.2% |
| 1996-97 | 4.0% | 2013-14 | 0.0% |
| 1997-98 | 3.9% | 2014-15 | 0.0% |
| 1998-99 | 4.0% | 2015-16 | (5.0%) |
| 5-Year Average | | | 5.4% |
| 10-Year Average | | | 7.4% |
| 20-Year Average | | | 6.8% |
| 34-Year Average | | | 7.2% |
| 34-Year Standard Deviation | | | 6.0% |

Appendix B ♦ Assets

The chart below shows how GET assets are currently invested. Below the chart are descriptions of those investment types, or asset classes.

2015 GET Fund Asset Allocation



Cash: Highly liquid, very safe investments that can be easily converted into cash, such as Treasury Bills and money-market funds.

Fixed Income: Securities representing debt obligations and usually having fixed payments and maturities. Different types of fixed income securities include government and corporate bonds, mortgage-backed securities, asset-backed securities, convertible issues, and may also include money-market instruments.

Global Equities: Shares of U.S. and non-U.S. corporations that trade on public exchanges or “over-the-counter.” The ownership of a corporation is represented by shares that are claimed on the corporation’s earnings and assets.

The current WSIB Capital Market Assumptions are shown in the table below. The average 6.84 percent portfolio return is a one-year arithmetic return. When compounded over a 15-year period, the arithmetic return decreases to a 6.36 percent geometric return.

2015 Capital Market Assumptions

| Asset | Return | Standard Deviation | Weight |
|--------------------|--------|--------------------|---------|
| Fixed Income | 3.90% | 5.25% | 40.00% |
| Global Equities | 8.80% | 18.85% | 60.00% |
| Portfolio | 6.84% | 11.90% | 100.00% |
| Correlation | | | |
| Fixed Income | 1.00 | | |
| Global Equities | 0.20 | 1.00 | |

The target asset allocation is currently 60 percent global equity and 40 percent fixed income.

The following table shows the GET Fund Value. The value of the fund includes the market value of assets held by the WSIB along with the present value of the monthly contract receivables.

| Fund Value | |
|---|----------------|
| Market Value of Assets | |
| <i>(Dollars in Millions)</i> | |
| Cash | \$58 |
| Global Equities | \$1,600 |
| Fixed Income | \$1,005 |
| Total Market Value of Assets | \$2,664 |
| Present Value of Monthly Contracts | \$256 |
| Present Value of Refunds | (\$59) |
| Total Fund Value | \$2,862 |



Appendix C ♦ Contract Data

| Number of Units Sold by Unit Price | | |
|------------------------------------|------------|------------|
| Enrollment Year | Unit Price | Units Sold |
| 1998-99 | \$35 | 1,374,095 |
| 1999-00 | 38 | 615,327 |
| 2000-01 | 41 | 523,702 |
| 2001-02 | 42 | 2,463,500 |
| 2002-03 | 52 | 2,099,531 |
| 2003-04 | 57 | 1,896,635 |
| 2004-05 | 61 | 2,108,360 |
| 2005-06 | 66 | 2,146,191 |
| 2006-07 | 70 | 2,339,431 |
| 2007-08 | 74 | 2,102,305 |
| 2008-09 | 76 | 3,177,699 |
| 2009-10 | 101 | 2,624,367 |
| 2010-11 | 117 | 2,697,696 |
| 2011-12* | 163 | 1,503,962 |
| 2012-13 | 172 | 1,038,773 |
| 2013-14 | 172 | 741,701 |
| 2014-15 | \$172 | 618,367 |

*Restated number of units sold.

| Number of Units Outstanding by Use Year | | |
|---|---------------------|---------------------------|
| Fiscal Year | Expected Unit Value | Units Starting to be Used |
| 2015* | \$118 | 6,577,326 |
| 2016 | 118 | 1,379,382 |
| 2017 | 118 | 1,397,451 |
| 2018 | 118 | 1,361,372 |
| 2019 | 120 | 1,288,291 |
| 2020 | 126 | 1,369,561 |
| 2021 | 133 | 1,287,430 |
| 2022 | 139 | 1,163,777 |
| 2023 | 146 | 1,116,199 |
| 2024 | 154 | 1,040,759 |
| 2025 | 161 | 987,206 |
| 2026 | 169 | 831,690 |
| 2027 | 178 | 681,209 |
| 2028 | 187 | 445,871 |
| 2029 | 196 | 344,376 |
| 2030 | 206 | 225,744 |
| 2031 | 216 | 118,901 |
| 2032 | 227 | 45,703 |
| 2033 | 238 | 305 |
| 2034+ | \$250 | 57 |

*Includes contracts that already started using units.

Appendix D ♦ Price-Setting Guidelines

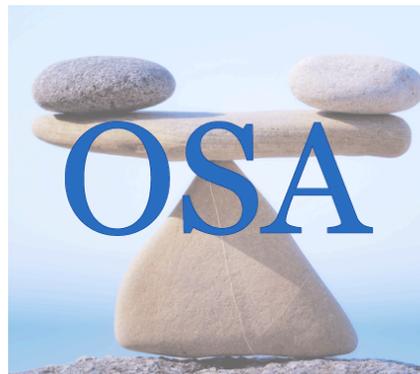
We used the following guidelines, for the applicable enrollment period, for price-setting analysis before the suspension of future unit sales. These guidelines should be used for informational and historical purposes only. Due to the suspension of future unit sales, we did not complete the price-setting exercise for the 2015-16 enrollment period and no price is currently set for future GET units. The GET Committee, at their August 2015 meeting, authorized a refund of all past and future amortization payments made for unredeemed units. If the suspension of future unit sales is lifted, future price-setting guidelines may not include an amortization fee.

In 2011, the GET Committee adopted new price-setting guidelines (how we price future units) to address the new tuition-setting policy established by the Legislature at that time and to return the program to a fully funded status. The price-setting guidelines adopted in 2011 include the following four parts:

- ❖ Expected Cost — Covers the expected cost of future tuition and certain administrative expenses.
- ❖ Expenses — Covers the GET program's annual operating expenses.
- ❖ Reserve — Covers unexpected future costs such as above-expected tuition growth or below-expected investment returns. The current price-setting guidelines call for a 15 percent reserve. This component can be increased or decreased to alter the probability that a unit will ever create an unfunded liability in the future.
- ❖ Amortization — An optional component that covers unexpected past costs from significant program or policy changes. In 2011, the committee established a one-time 30-year amortization of the unfunded liability measured at June 30, 2011.

| Prior GET Unit Price Information | |
|----------------------------------|--------------------|
| Category | 2014-15 Enrollment |
| Unit Price | |
| Expected Cost | \$124.74 |
| Expenses | 5.93 |
| Reserve | 20.51 |
| Amortization | 20.82 |
| Total Unit Price | \$172.00 |

Note: Totals may not agree due to rounding.



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