



## Office of the State Actuary

*"Securing tomorrow's pensions today."*

September 28, 2012

Senator Rodney Tom  
Chair  
GET Legislative Advisory Committee  
PO Box 40448  
Olympia, WA 98504-0448

### **RE: ACTUARIAL ANALYSIS OF DIFFERENTIAL TUITION – OPTION B\***

At your request, we performed preliminary actuarial analysis on the potential impacts on the Guaranteed Education Tuition (GET) program from "differential tuition." We understand that no state institution of higher education is currently allowed to charge differential tuition, but may adopt such policies next fall if the suspension under current law ends.

Our most recent analysis of GET excluded the impact of differential tuition. The current GET unit price of \$172 also does not include a premium for differential tuition.

The purpose of this analysis is to demonstrate the potential impacts to GET from differential tuition under the same scenarios outlined in Option A (provided in a separate letter) with the following modification.

- ❖ Exempt charges above base tuition at Washington State public colleges and universities for all GET participants.

For example, if base tuition were \$10,000 and differential tuition were \$1,000, under this option all GET participants would receive \$11,000 in GET unit value (for 100 units), but the GET program would only pay out \$10,000 for GET participants attending in-state public schools (with the institution absorbing the cost of the \$1,000 in differential tuition). If 75 percent of all GET units are used at in-state public schools, then that would mean the GET program would only pay the \$11,000 for 25 percent of all units.

The results of our analysis are highly sensitive to assumed future purchaser behavior and future tuition growth. We did not have sufficient time to complete a comprehensive review of how differential tuition policies may affect our current assumptions. For these reasons, this analysis demonstrates potential impacts under four defined scenarios only and does not represent our best-estimate analysis.

*\* For purposes of this analysis, differential tuition refers to a tuition-setting policy where rates of resident, undergraduate tuition vary by an institution's programs, campuses, courses, or students.*



### Summary of Results\*

(Dollars in Millions - Except GET Unit Price)	Without Differential Tuition	With Differential Tuition 5% Increase	With Differential Tuition 10% Increase
Current GET Unit Price	\$172	\$175	\$178
Unfunded Liability	\$631	\$667	\$704

\*Estimate at June 30, 2012. Please see the Appendix for more information on how we estimated the impacts.

### Summary of Results\*

(Dollars in Millions - Except GET Unit Price)	Without Differential Tuition	With Differential Tuition 20% Increase	With Differential Tuition 50% Increase
Current GET Unit Price	\$172	\$186	\$211
Unfunded Liability	\$631	\$778	\$999

\*Estimate at June 30, 2012. Please see the Appendix for more information on how we estimated the impacts.

Please see the rest of this letter for further details and supporting information.

### Impact On GET Program Status

When we update the current status of the GET program to apply the one-time increases defined above, the expected cost of every unredeemed GET unit that has already been sold immediately increases (for the assumed 25 percent of GET units impacted). However, the assets collected from past purchasers, plus the associated investment returns, remain unchanged.

The following table displays the estimated impacts on GET's current liability, assets, unfunded liability, and funded status from the scenarios defined above (for the assumed 25 percent of GET units impacted).

### Impact on GET Program Status\*

(Dollars in Millions)	Without Differential Tuition	With Differential Tuition 5% Increase	With Differential Tuition 10% Increase
Present Value of all GET Contracts	\$2,942	\$2,978	\$3,015
Market Value of Assets	2,311	2,311	2,311
Unfunded Liability	\$631	\$667	\$704
Funded Status	79%	78%	77%

\*Estimate at June 30, 2012. Please see the Appendix for more information on how we estimated the impacts.



Impact on GET Program Status*			
(Dollars in Millions)	Without Differential Tuition	With Differential Tuition 20% Increase	With Differential Tuition 50% Increase
Present Value of all GET Contracts	\$2,942	\$3,089	\$3,310
Market Value of Assets	2,311	2,311	2,311
Unfunded Liability	\$631	\$778	\$999
Funded Status	79%	75%	70%

\*Estimate at June 30, 2012. Please see the Appendix for more information on how we estimated the impacts.

### Current GET Price-Setting Guidelines

The GET Committee adopts price-setting guidelines (how we price future units) to manage the risks of the program. The current GET unit price includes the following four components:

- ❖ **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 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. It is important to collect amortization payments for the entire planned period. Ending the amortization sooner could effectively result in the use of reserve dollars (dedicated for future unexpected costs) for past unexpected losses.

### Impact On GET Unit Price

When we update the current status of the GET program to apply the one-time differential tuition increases defined above (for the assumed 25 percent of GET units impacted) and apply the current price-setting guidelines, we observe the following changes to the GET unit price.



Impact on GET Unit Price*			
Category	Without Differential Tuition	With Differential Tuition 5% Increase	With Differential Tuition 10% Increase
<b>Unit Price</b>			
Expected Cost	\$127.66	\$129.26	\$130.85
Expenses	5.33	5.42	5.55
Reserve	19.95	20.20	20.45
Amortization	19.73	21.12	22.08
<b>Total Unit Price</b>	<b>\$172.00</b>	<b>\$175.00</b>	<b>\$178.00</b>

Note: Total unit price rounded down.

\*Estimate at June 30, 2012. Please see the Appendix for more information on how we estimated the impacts.

Impact on GET Unit Price*			
Category	Without Differential Tuition	With Differential Tuition 20% Increase	With Differential Tuition 50% Increase
<b>Unit Price</b>			
Expected Cost	\$127.66	\$134.04	\$143.62
Expenses	5.33	6.02	6.55
Reserve	19.95	20.95	22.44
Amortization	19.73	25.77	38.66
<b>Total Unit Price</b>	<b>\$172.00</b>	<b>\$186.00</b>	<b>\$211.00</b>

Note: Total unit price rounded down.

\*Estimate at June 30, 2012. Please see the Appendix for more information on how we estimated the impacts.

The expenses and amortization components both increase by less than the percent increases in the defined scenarios because the increases apply to only the assumed 25 percent of GET units impacted. However, these components increase by more than 25 percent of the increases in the defined scenarios. This occurs because both components are collected over assumed future purchases. As the price premium increases (total unit price ÷ unit value of \$117.82), we expect fewer future purchases. Therefore, the price of the expense and amortization components must increase to collect the same total dollars over fewer assumed future purchases. The amortization component also increases by the percent increase in unfunded liability displayed earlier under Impact On GET Program Status.

### Impact On Program Risk

We did not have sufficient time and available resources to analyze the impacts to the program's risks at this preliminary stage in the analysis. The impacts on program risk



under this option would vary from the impacts identified under Option A. Should the Committee decide to pursue this option further, we suggest additional actuarial analysis to separately identify the risk impacts under this option.

### **Actuarial Certification**

We prepared this preliminary analysis to assist the Legislature in evaluating the potential impacts of differential tuition on the GET program under four defined scenarios. Please do not use this analysis for other purposes.

This analysis involves calculations that require assumptions about future economic and demographic events. Actuarial Standards of Practice (ASOP) for prepaid tuition programs have not been defined within the actuarial profession. We used the ASOPs for pensions where possible to guide our analysis of GET. We believe that the assumptions, methods, and calculations used in this analysis 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 letter. The use of another set of assumptions and methods, however, could also be reasonable and could produce materially different results.

Since the analysis is based on assumptions about future events, actual results will differ to the extent that future experience differs from those assumptions. Significant differences between the actual and assumed future enrollments will impact the results. This analysis will need to be updated in the future if the Legislature enacts either major reform to current tuition policy or other changes to GET.

The GET Program staff provided the participant, asset, and historical data to us. The Washington State Investment Board (WSIB) also provided recent asset data to us. We checked the data for reasonableness as appropriate based on the purpose of this analysis. An audit of the data was not performed. 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 analysis.

We advise readers of this analysis 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 communication as a whole. Distribution of, or reliance on, only parts of this analysis could result in its misuse and may mislead others.

The analysis in this letter will become outdated very quickly. Please replace this analysis with any future actuarial analysis.

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 actuarial analysis for the GET Legislative Advisory Committee, 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 and are available to provide extra guidance and explanations as needed.

Sincerely,

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

Troy Dempsey, ASA, EA, MAAA  
Actuary

cc: Betty Lochner, Director  
Guaranteed Education Tuition  
Larry Lee, Deputy Director  
Guaranteed Education Tuition

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## Appendix – Data, Assumptions and Methods

### Data We Used

We relied on data provided from GET staff to develop an assumption about how many GET units would be redeemed at Washington State public colleges and universities. An audit of the data was not performed. We relied on the data provided as complete and accurate. In our opinion, this data is reasonable for the purposes of this preliminary analysis. The following table shows the data collected.

GET Units Redeemed by Year and Institution Type				
School Year	2009-10	2010-11	2011-12	Total
<b>Institution</b>				
University of Washington	3,710	3,981	4,521	12,212
Washington State University	1,323	1,521	1,817	4,661
Western Washington University	1,837	2,218	2,646	6,701
Central Washington University	641	815	954	2,410
Eastern Washington University	329	399	511	1,239
The Evergreen State College	243	293	313	849
Community and Technical Colleges	1,844	1,920	2,484	6,248
Out-of-State Colleges and Universities	1,690	2,309	2,385	6,384
Private Colleges and Universities	833	1,020	1,208	3,061
<b>Public Washington Institutions</b>	<b>9,927</b>	<b>11,147</b>	<b>13,246</b>	<b>34,320</b>
<b>All Institutions</b>	<b>12,450</b>	<b>14,476</b>	<b>16,839</b>	<b>43,765</b>
<b>Redeemed at Public Washington Institutions</b>	<b>80%</b>	<b>77%</b>	<b>79%</b>	<b>78%</b>

Otherwise, the data and assets we used are consistent with the data and assets disclosed in the *June 30, 2012, GET Actuarial Valuation Report (GAVR)*.

### Assumptions We Made

After analyzing data collected from GET staff, we assume that 75 percent of GET units will be redeemed at Washington State public colleges and universities.

For purposes of this preliminary pricing, we assumed that Washington State public colleges and universities include all public community and technical colleges. If community and technical colleges were excluded, the 75 percent assumption would be lower and the cost of this proposal, in terms of present value of all GET contracts, would be higher.

We assumed the GET Committee would follow their current price-setting guidelines over the 50-year projection period. The guidelines (“current guidelines”) require a 15 percent reserve. The guidelines also include a one-time, closed 30-year amortization to address the unfunded liability created by the new tuition-setting policy established in the 2011 Session.

We further assumed the GET Committee would respond to the presence of differential tuition by changing the current price of a GET unit.



We increased the 2013 tuition growth rate of 12 percent by 125, 250, 500, or 1,250 basis points to reflect the assumed one-time increase in GET payout value defined by the given differential tuition scenario. These increases are equivalent to those used in Option A, except they show the assumed 75 percent offset for this proposal.

Otherwise, the assumption we made are consistent with the assumptions disclosed in the GAVR.

### **Methods We Used (How We Applied The Assumptions)**

To estimate the change in liabilities for each given scenario, we changed the 2013 tuition growth rates as described above and calculated a new present value of all GET contracts.

To estimate the change in a GET unit price we made the following changes:

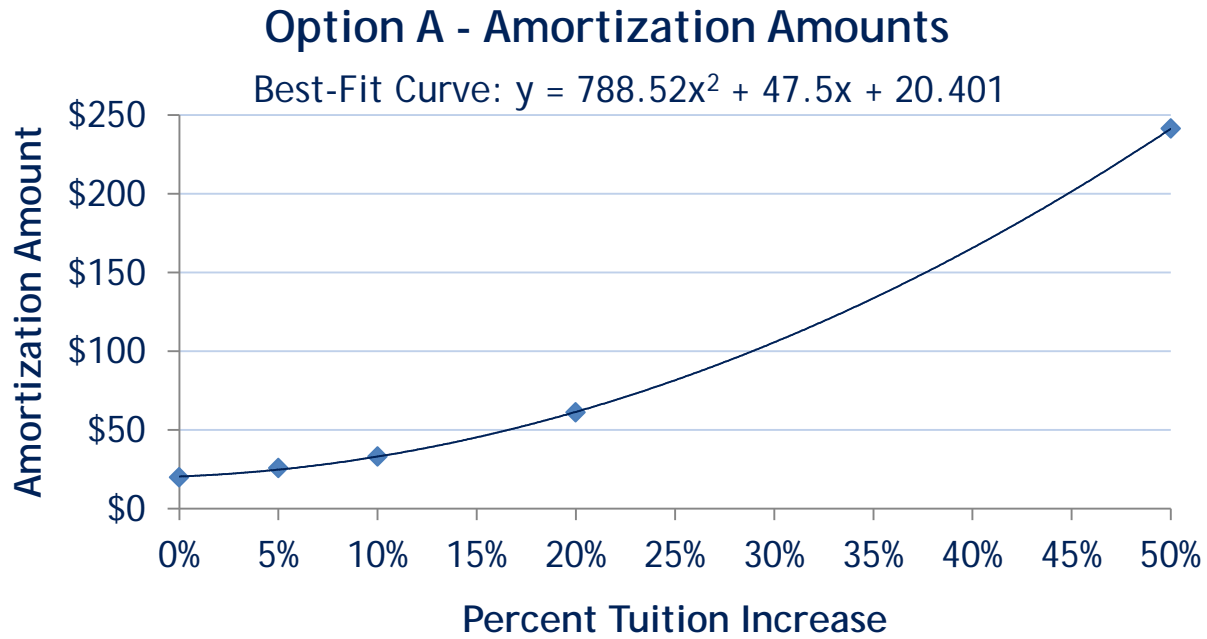
We increased the expected cost components by the 2013 tuition growth rates above. In other words, if we increased tuition by 5 percent in the first year, we estimated the expected cost would be 5 percent higher as well.

We estimated that the expected decrease in unit sales due to differential tuition would be a linear proration of 25 percent of the corresponding Option A scenarios. We then spread the total required expense cost over the lower expected unit sales to derive the expense component cost.

The reserve component is 15 percent of the sum of expected cost and expense components.

To estimate the change to the amortization component, we plotted the amortization components from each of the Option A scenarios on a chart, found a best-fit curve, and used that best-fit curve to estimate amortization amounts for each of the Option B scenarios. The chart appears below.





Otherwise, the methods we use are consistent with the methods disclosed in the GAVR.

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