December 12, 2017

The Honorable Tom Brinkman
Chairman, Insurance Committee
Ohio House of Representatives
77 South High Street, 11th Floor
Columbus, Ohio 43215
Via Email: roanna.thawley@ohiohouse.gov

 RE: House Bill 269 Opposition

Dear Chairman Brinkman:

On behalf of the nearly 8,000 members of the Ohio Chamber of Commerce, I write to you in opposition House Bill 269. Simply put, any potential benefit to employers in the workers' compensation system contained in this bill is outweighed by the additional costs that would be borne by businesses and the system.

HB 269 would arbitrarily create new death benefits, in addition to current death benefits, that have absolutely no ties to the employee's earning capacity or work. This would be a fundamental departure from current law and would increase costs for employers. No testimony has been provided showing why the additional $35,000 death benefit is necessary or why this number was chosen.

The bill also increases costs for employers by instituting a scholarship in death claims of $5,000 per year for up to four years per dependent. This could increase costs by $20,000 per dependent. Once again, this provision has no tie to an employee's earning capacity and significantly increases costs without a justification as to why this is needed.

Lastly, while we have only focused on a few key issues, the BWC did an actuarial study on pieces of this bill, which is attached, and found that the two changes mentioned above would result in a $3.9 million increase in premiums to employers annually. While there is a total savings, considering other aspects of the bill, projected at $4.8 million annually, HB 269 would make

significant changes, generate administrative burden, increase costs for employers, and create uncertainty for a relatively small savings.

For these reason, we urge you to oppose HB 269. Please feel free to contact me if you have any questions regarding our opposition at dboyd@ohiochamber.com or (614) 629-0916.

Respectfully,

Don Boyd
Director, Labor & Legal Affairs
Ohio Chamber of Commerce

Ohio | **Bureau of Workers'**
Compensation
30 W. Spring St.
Columbus, OH 43215-2256

Governor **John R. Kasich**
Administrator/CEO **Sarah D. Morrison**
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To: Legislative Service Commission
        Senate Transportation, Commerce and Labor Committee
        House Insurance Committee

From: Nicholas W. Zuk, Chairman, BWC Board of Directors

Re: Actuarial Analysis of Legislation – House Bill 269

Date: August 25, 2017

Attached you will find an actuarial analysis of House Bill 269. This bill proposes to revise workers' compensation benefits as follows:

- To eliminate permanent total disability (PTD) and disabled workers relief fund (DWRF) payments at the full retirement age of the injured worker
- To create a new benefit type – extended benefits compensation (EBC) which would begin at the full retirement age of the injured worker. This wage replacement benefit would be based on the injured worker' PTD benefit with a possible reduction based on the time between the initial PTD award and the full retirement age. The EBC payment would be subject to an annual 2% increase.
- To provide a one-time payment of $35,000 to surviving dependants at the time current survivor benefits are initially paid following the death of an injured worker due to their work related injury.
- To provide an annual $5,000 scholarship for up to 4 years to eligible dependent children to attend an institution of higher education.

Based on the historical data and the assumptions in the attached reports, our Actuarial Committee believes the estimate that this bill may have a potential reduction in annual cost of $4.8 million is reasonable.

This overall estimate is developed from the following estimates:

- Assuming no change in claimant filing behavior, the combined impact of the PTD limitation and the EBC implementation is projected to reduce annual costs by $8.7 million for the private employer, public taxing districts and state agency programs combined.
- The increased survivor benefits are projected to increase annual payments by roughly $3.9 million on a discounted basis for the private employer, public taxing districts and state agency programs combined premiums.

We have assumed that there is no impact to the survivor benefits from the proposed changes to the PTD eligibility or the implementation of the EBC. If that assumption should prove to be incorrect, our estimates will not fully capture the impact of the proposed changes, possibly by a material amount.

As with any estimation of the future, there is some degree of uncertainty that should be recognized. Alternative assumptions would likely result in different estimates of annual costs; some estimates that would be higher and some estimates that would be lower. We feel the assumptions and resulting estimated costs of these analyses are reasonable.

Please feel free to contact our BWC staff if you have further questions.

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To: **Christopher S. Carlson**, FCAS, MAAA, Chief Actuarial Officer

From: **Daniel Myers**, FCAS, MAAA, Director of Actuarial Analysis

Date: August 21, 2017

Subject: Actuarial Report on House Bill 269: Changes to Permanent Total Disability Benefits

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Actuarial Findings:

As required by ORC 4121.125 (C) (6) and (7), any proposed legislation that has an expected measurable financial impact on the BWC should have an actuarial analysis prepared by or under the supervision of actuary. I have conducted an actuarial analysis of a portion of House Bill 269 (HB269) and I am issuing this actuarial report with its findings. The scope of this actuarial report is limited to the changes proposed in sections 4123.413 and 4123.58 of HB269. These two sections propose to transition employees who receive Permanent Total Disability compensation (PTD) and – if applicable – Disabled Workers' Relief Fund payments (DWRF) to a new coverage named Extended Benefits Compensation (EBC). Details of how these coverages would interact are explained further in the Proposed Legislation section below. The impact of these changes from HB269 is expected to result in indicated changes to rates as follows:

- Private Employers will see -0.1% decrease or approximately $1.2 million less premium
- Public Employer Taxing Districts will see -3.9% decrease or approximately $7.3 million less premium
- State Agencies will see -0.4% decrease or approximately $0.2 million less premium. It is worth noting that the immediate impact to State Agencies will be negligible since they are charged on a "pay as you go" basis. Any changes to costs from this proposed legislation would slowly manifest themselves over time as injuries mature into PTD claims and then eventually transition into EBC claims. The estimated decrease would be realized over multiple years as injured workers reach full retirement age and transition from PTD payments to EBC payments.

DWRF was not considered in this analysis since it is assessed on a "pay as you go" basis. Furthermore, this proposed legislation would only cause DWRF costs to decrease over time. Since it is currently adequately capitalized and assessments are at 0.00 for Private Employers and Public Employer Taxing Districts (for both DWRF I and DWRF II), any reduction in costs stemming from HB269 would only serve to further strengthen its financial position and lengthen the time that the 0.00 assessment would be in place.

Proposed Legislation:

Section 4123.58 of HB269 proposes to introduce a new coverage called Extended Benefit Compensation. EBC is only available to injured workers who receive PTD compensation and, like PTD, will continue to pay benefits for the remainder of life of the injured worker.

Under HB269, PTD would expire and EBC would begin at the same time; there would be no gap in coverage and no overlap in coverage between them. In most cases, that transition occurs when the injured worker reaches Full Retirement Age (FRA) for the position held at time of injury. The exception is if the injured worker's injury date is

within one year of FRA (including all instances where the injury occurs after FRA). In that case, the injured worker would continue to be eligible for PTD two years after FRA. FRA is defined in HB269 as

- If applicable, the age a worker is eligible for an unreduced retirement allowance or benefit due to age from one of the Ohio public retirement funds specifically enumerated in HB269
- In all other instances, the full retirement age as defined in the Social Security Act, which ranges between 65 and 67 depending on what year the employee was born

The initial EBC payment is determined from the PTD payment and the number of years the injured worker received PTD payments. The PTD payment is multiplied by the percentage in the following table to determine the initial EBC payment:

Length of PTD payments	EBC Adjustment
< 1 year	0%
1.0 years to 1.99 years	10%
2.0 years to 2.99 years	20%
3.0 years to 3.99 years	30%
4.0 years to 4.99 years	40%
5.0 years to 5.99 years	50%
6.0 years to 6.99 years	60%
7.0 years to 7.99 years	70%
8.0 years to 8.99 years	80%
9.0 years to 9.99 years	90%
10+ years	100%

HB269 also has a guaranteed 2% annual cost of living increase for EBC that begins one year after EBC payments begin. Since there is a guaranteed 2% cost of living adjustment built into EBC, HB269 proposes to change section 4123.413 to align DWRF with that by stipulating that an injured worker receiving EBC payments will not be eligible for DWRF payments.

Actuarial Analysis of Permanent Total Disability and Extended Benefit Compensation:

The actuarial analysis was conducted on claims with injuries occurring in 2004 through 2006 and evaluated as of December 31, 2016. By having this large gap between the injury dates and the evaluation date, we believe that all claims which would mature into PTD claims will likely have already done so. The data we gathered provided us with a data set of 1,584 Private Employer claims, 276 Public Employer Taxing District claims, and 73 State Agency claims.

The fundamental approach in our analysis was to estimate the future PTD payments under current statute and then adjust that estimate for the provisions outlined in the proposed legislation. Comparing these amounts allowed us to determine the estimated impact on rates from the proposed legislation.

The PTD reserve under current statute is the sum of all expected future PTD payments at present value. We use the weekly annuity factor based on the age of the injured worker when PTD payments were first made, which can be found in BWC's most recent mortality study, and multiply that factor by the weekly benefit that the injured worker receives. Because we did not have the weekly benefit readily available, we assumed that everyone received the same weekly wage. This assumption allowed us to only use the annuity factors in our analysis. For purposes of this analysis, this annuity factor can be thought of as the sum of two pieces: the expected payments prior to full retirement age and the expected payments after full retirement age, both discounted to the date that the injured worker first started receiving PTD payments.

We can split that "total" annuity factor into those pre-retirement and post-retirement pieces by calculating the expected payments after FRA and subtracting that from the total annuity factor. FRA is defined for us and so we determined the weekly annuity factor for FRA from the mortality study. This post-retirement annuity factor captured all payments between FRA and death but must be adjusted before it can be subtracted from the total annuity factor. Inherent in the post-retirement annuity factor is the assumption that everyone who received PTD payments will survive until FRA. We must adjust this for the portion of injured workers who do not survive from first PTD payment until FRA. It also is the annuity factor at the time of retirement, not at the time of first PTD payment. We must discount this post-retirement annuity factor back to the date of first PTD payment. We used these two adjustments to calculate the post-retirement annuity factor and then calculated the pre-retirement annuity factor by subtracting the post-retirement annuity factor from the total annuity factor.

It is worth noting that the post-retirement annuity factor is actually the present value of the EBC payments before the benefit reduction or the 2% cost of living increase. Accounting for the benefit reduction is fairly trivial. We multiplied the post-retirement annuity factor with the appropriate EBC Adjustment percentage from the table above, which was determined by the number of years between the first PTD payment and the full retirement age. The 2% cost of living increase will apply to EBC for each year after FRA until EBC payments end at death. The theoretically accurate way to calculate this is to sum up a series of 1-year annuities that are 2% larger than the prior year's 1-year annuity, adjusted by survival rates and brought forward to present value. However, system constraints wouldn't support that more rigorous approach. Alternatively, we estimated the number of years the average person will survive after FRA and used that to calculate the average cost of living increase across all years as $(1.02)^{years}$. We then multiplied this factor to the EBC payment and the EBC benefit reduction factor to arrive at the final estimated EBC annuity factor. Adding this to the pre-retirement annuity factor resulted in an estimated total annuity factor for the provisions of the proposed legislation. (We calculated this for a handful of claims to confirm this approximation was a reasonable estimate of the more accurate approach.)

The above process of identifying the appropriate annuity factor for current statutes and adjusting it for the proposed legislation was applied to each claim. We then summarized the annuity factors under current statutory provisions and the adjusted annuity factors for the proposed legislation. Dividing the proposed total annuity value by the current total annuity value gives us an estimated adjustment to future aggregate losses for the combination of PTD and EBC. This adjustment tells us how much the total future costs coming from the combination of PTD and EBC will increase or decrease. For Private Employers, this amount was -11.8%. For Public Employer Taxing Districts, it was -30.6%. For State Agencies, it was -12.9%.

To transform those percentages to an expected impact to rates, we must identify the proportion of total losses that PTD represents. For Private Employers, PTD accounts for about 15% of ultimate losses from a recent study of reserves and PTD is about 19% of ultimate losses for Public Employer Taxing Districts and State Agencies. The other coverages are not impacted by this proposed legislation and therefore have no impact to their losses. So the resulting impact to rates can be calculated by:
[(1 + PTD & EBC adjustment) * (PTD proportion)] + [(100% adjustment to other cov's) * (1 – PTD proportion)] – 1
This results in an impact of -1.8% to Private Employers, -5.8% to Public Employer Taxing Districts, and -2.5% to State Agencies.

One final adjustment was made to account for the change to claimant behavior that this legislation may create. Currently, injured workers may return to work and then file for PTD benefits as they age because their injury debilitates to the point that they no longer can work gainfully. With the adjustment in HB269 to reduce EBC payments for workers who begin receiving PTD within 10 years of FRA, some injured workers may seek PTD benefits earlier than current patterns would suggest. To address this, we collected a random sample of claims and determined the portion of them that would likely file for earlier PTD benefits and how many additional weeks of benefits they would receive. This adjustment largely offsets the decrease contemplated in the analysis above. The

final estimated impact to Private Employers after this adjustment is -0.1%. The estimated impact to Public Employer Taxing Districts is -3.9% and the estimated impact to State Agencies is -0.4%.

The following tables show results summarized by a handful of meaningful characteristics. Each table shows separately for Private Employers and Public Employer Taxing Districts the distribution of claims in our dataset and the expected change to combined PTD and EBC payments. Because of the limited number of claims in the State Agencies data set, we elected not to display these tables with State Agencies data.

Number of Years Injured Worker Received PTD Payments Prior to Retirement Age							
Private Employers				Public Employer Taxing Districts			
Years	Count	Percent	Impact	Years	Count	Percent	Impact
<1 yr	231	14.6%	-98.5%	<1 yr	89	32.2%	-98.9%
1-2 yrs	42	2.7%	-72.8%	1-2 yrs	10	3.6%	-73.7%
2-3 yrs	54	3.4%	-56.5%	2-3 yrs	12	4.3%	-57.4%
3-4 yrs	60	3.8%	-42.1%	3-4 yrs	20	7.2%	-42.4%
4-5 yrs	55	3.5%	-30.1%	4-5 yrs	6	2.2%	-30.0%
5-6 yrs	69	4.4%	-19.9%	5-6 yrs	19	6.9%	-18.6%
6-7 yrs	51	3.2%	-11.4%	6-7 yrs	11	4.0%	-9.0%
7-8 yrs	62	3.9%	-4.1%	7-8 yrs	11	4.0%	-0.9%
8-9 yrs	64	4.0%	2.1%	8-9 yrs	8	2.9%	6.2%
9-10 yrs	56	3.5%	7.4%	9-10 yrs	15	5.4%	12.3%
10+ yrs	840	53.0%	6.8%	10+ yrs	75	27.2%	12.3%
Total	1,584	100.0%	-11.8%	Total	276	100.0%	-30.6%

This table illustrates that the majority of injured workers in the Private Employer segment begin receiving PTD payments more than 10 years from retirement age while that percentage is significantly smaller in the Public Employer Taxing District segment. This table also illustrates that the average worker who begins receiving PTD payments within 1 year of full retirement age will receive almost nothing under the proposed legislation since that worker will only receive a few months of PTD payments and then nothing from EBC coverage. On the other end of the spectrum, an injured worker collecting PTD for more than 10 years prior to retirement age would actually receive an increase in benefit when transitioning to EBC since EBC has a guaranteed 2% annual increase while current PTD payments are fixed. The reader should keep in mind that this analysis does not account for any change in DWRF payments. Recognizing ceasing of DWRF payments would bring the percentage impacts down from the numbers displayed here, although the degree to which they would decrease is outside the scope of this analysis.

Age when Injured Worker Received First PTD Payment							
Private Employers				Public Employer Taxing Districts			
Age	Count	Percent	Impact	Age	Count	Percent	Impact
<30	16	1.0%	1.7%	<30	2	0.7%	3.8%
30's	75	4.7%	3.0%	30's	10	3.6%	7.1%
40's	314	19.8%	5.3%	40's	48	17.4%	12.5%
50's	664	41.9%	6.0%	50's	116	42.0%	-12.6%
60's	429	27.1%	-58.1%	60's	87	31.5%	-95.1%
70+	86	5.4%	-100.0%	70+	13	4.7%	-100.0%
Total	1,584	100.0%	-11.8%	Total	276	100.0%	-30.6%

Similarly, we see from this table that benefits are relatively unaffected for injured workers who begin collecting PTD payments in their 50's or earlier but are significantly reduced if workers begin collecting PTD in their 60's and 70's. The same DWRF concerns noted with the table above apply here in that recognizing DWRF payments would result in impacts that are more negative than shown here. Additionally, we observe that the estimated impacts are close to 0% for workers <30 and gradually increase for workers in their 30s and 40s. The gradual upward drift is due to the fact that workers in the <30 category will receive PTD benefits (which do not increase) for a large portion of the remainder of their lives and will receive EBC benefits (with an annual 2% increase) for a comparatively short amount of time. Conversely, those in their 40s have a larger portion of their total benefits coming from EBC payments and a smaller portion coming from PTD payments. This 2% annual increase drives the impact to be larger for the groups who receive the majority of their future payments from the increasing EBC benefits.

| Age of Worker on Day of Injury | | | | | | | |
| Private Employers | | | | Public Employer Taxing Districts | | | |
Age	Count	Percent	Impact	Age	Count	Percent	Impact
<30	47	3.0%	2.4%	<30	7	2.5%	6.2%
30's	220	13.9%	4.5%	30's	32	11.6%	10.7%
40's	587	37.1%	7.4%	40's	105	38.0%	-0.4%
50's	534	33.7%	-26.4%	50's	105	38.0%	-75.1%
60's	166	10.5%	-92.6%	60's	25	9.1%	-98.0%
70+	30	1.9%	-100.0%	70+	2	0.7%	-100.0%
Total	1,584	100.0%	-11.8%	Total	276	100.0%	-30.6%

We can see from this table that workers who are injured early in life are generally unaffected by HB269 since their EBC payments will likely be 100% or more of their PTD payments while workers injured later in life will see a significant reduction in overall benefit payments since they will be impacted by the EBC reduction adjustment.

Actuarial Analysis of Disabled Workers' Relief Fund:
While DWRF was not formally considered in this analysis, we can draw conclusions about how HB269 will affect it. In today's environment, DWRF payments are triggered when the sum of PTD payments and Social Security Disability payments are less than the DWRF Threshold, which stands at $372.53 for 2017 and increases each year in line with the change in the Consumer Price Index. If it is determined that DWRF payments should be made, the benefit amount is the difference between the DWRF Threshold and the larger of the PTD benefit or the Social Security Disability benefit.

Social Security Disability benefits and Social Security Retirement benefits are two separate payment classifications. Injured workers are most likely to begin receiving DWRF payments when they transition from disability to retirement because their Social Security income moves from the Disability category to the Retirement category, although their payouts are identical under both categories. This means their Disability income drops to $0 and their comparison to the DWRF Threshold only uses PTD benefits. So a sizable portion of the population who receive DWRF payments is comprised of retirees. Under HB269, retirees will transition from PTD to EBC and will not be eligible for DWRF benefits. DWRF would strictly apply to employees younger than full retirement age.

Our analysis of DWRF that we conducted in February 2017 showed that DWRF is sufficiently capitalized for the immediate future to not require any assessment to be levied on Private Employers and Public Employer Taxing Districts. We can see that HB269 would lower the future expected costs of DWRF which would further strengthen

its capital position. We currently do not project how many years into the future DWRF is estimated to be sufficiently capitalized and so we did not try to estimate that under the changes proposed in HB269.

Assumptions:

There are a number of assumptions built into this analysis. Any users of this report should recognize that while the actuarial analysis tries to contemplate reasonably foreseeable outcomes, the future may vary from these assumptions beyond what was contemplated in this actuarial analysis. The most notable assumptions are:

- Workers in the public sector retire at 62. This actuarial analysis of Public Employer Taxing Districts is highly dependent on this assumption. Because workers can begin working in the public sector at any age, they may earn full retirement benefits at a wide variety of ages. We do not have access to data that allows us to calculate the full retirement age for injured workers in the public sector and so we selected 62 as the age in which a typical public employee would reach full retirement benefits.
- Current rules regarding Social Security retirement ages will not change in the future.
- All workers receive the average weekly wage.
- No additional claims with injuries in 2004-2006 will develop into PTD claims.
- These changes will apply to any accidents occurring after the effective date of the proposed legislation. Any accidents occurring prior to the effective date will pay current statutorily prescribed PTD/DWRF benefits for the lifetime of the injured worker.

Qualifications:

This actuarial report is submitted by Daniel Myers, FCAS, MAA, Director of Actuarial Analysis of the Ohio Bureau of Workers' Compensation. Mr. Myers meets the continuing education requirements of the American Academy of Actuaries and the Casualty Actuarial Society to issue this actuarial report.

To: **Christopher Carlson**, FCAS, MAAA, Chief Actuarial Officer

From: **Jeana Holewinski**, FCAS, MAAA, AINS, Manager of Reserves and Research

Date: June 28, 2017

Subject: **Actuarial Report on House Bill 269: Addition of Survivor Benefits**

Actuarial Findings:

We performed an analysis into House Bill 269 Section 4123.59.A.5 and 4123.59.A.6 of the Revised Code. This change to the revised code creates two additional survivor benefits.

Section 4123.59.A.5 of the revised code creates an addition of a single, lump-sum payment of $35,000 to a dependant person or persons at the time of death. We estimate this benefit would increase annual payments by approximately $2.98 million (discounted) for Private Employers, Public Employers Taxing District, and Public Employers State Agencies combined. This increase equates to a +0.2% impact to rates for these funds.

Section 4123.59.A.6 of the revised code creates a yearly scholarship to an institute of higher learning of $5,000 to a dependant person under the age of 25 for a maximum of 4 years. This benefit would increase annual payments by approximately $0.89 million (discounted) for Private Employers, Public Employers Taxing District, and Public Employers State Agencies combined. This increase equates to a +0.1% impact to rates for these funds.

Combined, the additional survivor benefits would increase annual payments by approximately $3.87 million (discounted) for Private Employers, Public Employers Taxing District, and Public Employers State Agencies combined. This increase equates to a +0.3% impact to rates for these funds.

Proposed Legislation:

House Bill 269 Section 4123.59.A.5 of the Revised Code adds a one-time lump sum benefit to be paid at the time of death. A single lump sum payment of thirty-five thousand dollars shall be made if there are dependent persons at the time of the death. If there is more than one dependent person at the time of the death of the employee, the benefit will be allocated among the dependants.

House Bill 269 Section 4123.59.A.6 of the Revised Code adds a scholarship benefit for dependent persons at the time of the death. Each dependent person shall receive a scholarship in the amount of five thousand dollars per year for a maximum of four years, to be used for the payment of expenses of higher education.

Should the dependant reach the age of 25 or cease attending an institution of higher learning without enrolling in another, this benefit ceases to be paid. This benefit also requires that the dependant have graduated high school or is awarded a certificate of high school equivalence.

These are additional benefits, and are not replacing or modifying any existing benefits.

<u>Actuarial Analysis:</u>

This analysis has been completed to comply with the Ohio Revised Code 4121.125.C.6.

<u>Section 4123.59.A.5 Lump Sum Survivor Benefit:</u>

We gathered cumulative historical reported death claim count data for the past 24 years and their development. The data was as of 12/31/16 and included accident years 2016 and earlier. The employer types within the State Insurance Fund included in this revised benefit program would be Private Employers (PA), Public Employers Taxing District (PEC), and Public Employers State Agencies (PES). Combined historical death claim count development from PA, PEC, and PES was used in the analysis as it was our opinion that PES and PEC data was insufficiently credible on their own to estimate the number of future death claims.

The historical counts were used to determine how death claim counts emerge over time. While an accident may have occurred in one year, it can be several years to over a decade after the accident occurred before a death claim would be awarded. The development of historical claim counts was calculated over the 24 years for each development period. We used average of last 3 years development as the future reported death claim development factor for each development period. Using these estimated development factors, we were able to estimate the number of future death claim counts that would be awarded each year. This process is called the Chain Ladder Method, and is commonly used by actuaries in estimating future liabilities.

To estimate the number of death claims awarded in the initial year of insured, we took a 5 year average of the previous accident years (2012-2016) first development year reported death claim count. It was estimated that 26 death claims would be awarded in the first year after an accident. Developing the death claim counts using the estimated development factors led to an estimated ultimate reported count of 97 death claims after 55 years of development.

The benefit of thirty-five thousand dollars per death claim was multiplied by the number of estimated awarded death claims in each development period to get the estimated nominal benefit cost of $3.40 million per injury year. The proposed benefits were then discounted at 4.0% to get the estimated discounted benefit cost of $2.98 million per injury year. Discounting is done in order to take investment income into account. Exhibit 1 shows the estimated number of awarded death claims by year, along with the estimated nominal and discounted benefit cost by year.

As there is $1.5 billion in expected annual premium for PA, PEC, and PES, the $2.98 million benefit cost is 0.2% of total expected premium. To cover the cost with future premium, we would need to raise the rates for PA, PEC, and PES by approximately 0.2%.

<u>Section 4123.59.A.6 Scholarship Survivor Benefit:</u>

We gathered detailed historical death claim data, including ages of dependants at the time of death. The data was as of 3/06/17 and included accident years 2004 to 2006. Older accident years were used as it can take several years for death claims to be awarded after a worker is injured. The employer types within the State Insurance Fund included in this revised benefit program would be Private Employers (PA), Public Employers Taxing District (PEC), and Public Employers State Agencies (PES). Combined PES and PA data was used due to the lack of credibility of PES data own its own to estimate future death claim characteristics. PES and PA data was combined also due to their similar fiscal year

policy effective date. PEC data was sufficiently credible on its own to estimate future death claim characteristics.

For each dependant under the age of 18 at the time of death on these historical claims, we calculated the probability of that dependant surviving until they turn 18 years old. For the dependants who are between 18 and 25 years old at the time of death, this probability is 1.00, as they have already passed that age mark. We used the Orphan mortality values found in the 2015 Oliver Wyman Mortality Study. The scholarship benefit would only be provided to the dependants between the ages of 18 and 25 years old, therefore it is a requirement that the dependant reaches at least age 18 before obtaining this scholarship benefit.

Using the higher education termination values found in the 2015 Oliver Wyman Mortality Study, we are able to calculate the expected value of a four payment annuity. As the benefit only continues if the dependant continues at an institute of higher learning, it was important to take rate of withdrawal from school into consideration. The expected value of the $5,000 four year payment ends up being significantly less than $20,000 (4 x $5,000) due to the high probability of termination of higher education. We multiply the expected value of a four payment annuity by the probability of the dependant surviving until they turn 18 to get the expected value of a four payment annuity with taking the probability of a dependant not reaching the age of 18 into account.

The scholarship payments have significant lag, as the dependants are often young children at the time of death and will not receive the scholarship for several years. Therefore, the discount rate plays a significant role in the calculation of the discounted benefit cost. Discounting is done in order to take investment income over the many years into account. The scholarship payments are discounted at 4.0%. On average across all three employer types, there are an estimated 109 dependants per accident year that may, either immediately after death or years after, qualify for this scholarship benefit. I averaged the three years discounted expected scholarship benefits to get the projected policy year benefit costs.

Exhibit 2 shows the number of qualifying dependants, the nominal benefit cost, the cost with education termination rates taken into account, and the discounted benefit cost by awarded death claim with accident year in 2004-2006. The nominal benefit is the number of years of scholarship, maximum of 4 per dependant, multiplied by $5,000. The nominal benefit with termination calculated the undiscounted benefit once the mortality rate and rate of education termination is taken into account for each dependant. The discounted benefit is the nominal benefit with termination discounted back to the policy effective date to take investment income into account. Exhibit 2 is summarized in Exhibit 3. Exhibit 3 shows the number of qualifying dependants, the nominal benefit cost, the cost with education termination rates taken into account, and the discounted benefit cost by policy effective date in 2004-2006. These three years are averaged to get our estimated scholarship benefit cost.

The expected scholarship annual benefit cost is $0.89 million discounted: $0.8 million from PA and PES employers and less than $0.1 million from PEC. As there is $1.5 billion in expected annual premium for PA, PEC, and PES, the $0.89 million annual benefit cost is less than 0.1% of total expected premium. To cover the cost with future premium, we would need to raise the rates for PA, PEC, and PES by approximately 0.1%. The small impact is driven by small number of estimated dependants under the age of 25 and the high termination rate of students attending an institution of higher learning. Also, due to the significant payout lag, investment income drives the estimated impact down even more.

Assumptions:

Throughout the analysis into the cost of House Bill 269 Section 4123.59.A.5 and 4123.59.A.6, several assumptions had to be made. We feel these assumptions are reasonable. Should these assumptions prove materially different from the actual experience, the cost of these benefit programs could differ from the amounts stated in this Actuarial Analysis.

Section 4123.59.A.5 Lump Sum Survivor Benefit:

- Death claim emergence is reasonably similar among PA, PEC, and PES.
- Death claims will continue to emerge as they have historically in the past 3 years.
- Each awarded death claim will have a dependant that qualifies for this lump sum benefit.
- The benefit will be in effect for future accident years, and will not apply retroactively to the dependants of workers who were injured in accident years prior to the effective date of this legislation, even if their death claim is awarded subsequent to this legislation passing.

Section 4123.59.A.6 Scholarship Survivor Benefit:

- Mortality and higher education termination rates consistent with 2015 Oliver Wyman mortality study.
- Future dependant characteristics will be consistent with dependant characteristics from accident year 2004-2006 death claims.
- Dependants would not attend an institution of higher learning prior to the age of 18. (The difference in the benefit cost estimate would be negligible if the assumption isn't valid.)
- All dependants have completed a high school education or equivalent at the age of 18 or before receiving benefits.
- The benefit will be in effect for future accident years, and will not apply retroactively to the dependants of workers who were injured in accident years prior to the effective date of this legislation, even if their death claim is awarded subsequent to this legislation passing.

Qualifications:

This report has been prepared by Jeana Holewinski, FCAS, MAAA, AINS. Mrs. Holewinski is an actuary employed by the Ohio Bureau of Workers' Compensation and meets the qualification standards of the American Academy of Actuaries to issue this report. This report adheres to all applicable Actuarial Standards of Practice.

Exhibit 1

Ohio Bureau of Workers Compensation
Estimated Impact of One-Time Benefit Award of $35,000 to Surviving Dependants

Year	Estimated Number of Awarded Death Claims	Nominal Benefit	Discount Factor	Discounted Benefit
AY	26	910,000	1.000	910,000
AY+1	25	875,000	0.962	841,346
AY+2	14	490,000	0.925	453,033
AY+3	11	385,000	0.889	342,264
AY+4	2	70,000	0.855	59,836
AY+5	3	105,000	0.822	86,302
AY+6	1	35,000	0.790	27,661
AY+7	2	70,000	0.760	53,194
AY+8	0	-	0.731	-
AY+9	1	35,000	0.703	24,591
AY+10	1	35,000	0.676	23,645
AY+11	0	-	0.650	-
AY+12	1	35,000	0.625	21,861
AY+13	0	-	0.601	-
AY+14	1	35,000	0.577	20,212
AY+15	1	35,000	0.555	19,434
AY+16	0	-	0.534	-
AY+17	1	35,000	0.513	17,968
AY+18	0	-	0.494	-
AY+19	1	35,000	0.475	16,612
AY+20	1	35,000	0.456	15,974
AY+21	0	-	0.439	-
AY+22	0	-	0.422	-
AY+23	0	-	0.406	-
AY+24	1	35,000	0.390	13,654
AY+25	0	-	0.375	-
AY+26	0	-	0.361	-
AY+27	1	35,000	0.347	12,139
AY+28	0	-	0.333	-
AY+29	0	-	0.321	-
AY+30	0	-	0.308	-
AY+31	0	-	0.296	-
AY+32	0	-	0.285	-
AY+33	0	-	0.274	-
AY+34	1	35,000	0.264	9,224
AY+35	0	-	0.253	-
...	0	-	...	
AY+43	0	-	0.185	-
AY+44	1	35,000	0.178	6,232
AY+45	0	-	0.171	-
AY+46	0	-	0.165	-
AY+47	0	-	0.158	-
AY+48	0	-	0.152	-
AY+49	0	-	0.146	-
AY+50	1	35,000	0.141	4,925
Total	97	$3,395,000		$2,980,106

Exhibit 2

Ohio Bureau of Workers Compensation
Estimated Impact of Scholarship to Surviving Dependants
Public Taxing Districts

Claim	Policy start date	# of dependants < 25 at time of death	Nominal Benefit	Nominal Benefit with Termination	Discounted Benefit with Termination
A.1	1/1/2004	3	60,000	35,833	21,478
A.2	1/1/2004	4	80,000	47,788	23,556
A.3	1/1/2004	2	40,000	23,876	12,064
A.4	1/1/2004	1	20,000	11,948	7,391
A.5	1/1/2004	2	40,000	23,878	12,104
A.6	1/1/2004	1	20,000	13,840	11,759
A.7	1/1/2004	2	40,000	23,897	15,384
A.8	1/1/2004	4	80,000	47,818	34,927
B.1	1/1/2005	3	60,000	35,869	27,720
B.2	1/1/2005	1	20,000	11,932	5,704
B.3	1/1/2005	1	20,000	11,963	10,146
B.4	1/1/2005	2	40,000	23,914	18,259
C.1	1/1/2006	2	40,000	23,881	12,774
C.2	1/1/2006	1	20,000	11,967	10,333
C.3	1/1/2006	1	20,000	11,932	5,641
C.4	1/1/2006	3	60,000	35,846	23,763

Exhibit 2

Ohio Bureau of Workers Compensation
Estimated Impact of Scholarship to Surviving Dependants
Private Employers and State Agencies

Claim	Policy start date	# of dependants < 25 at time of death	Nominal Benefit	Nominal Benefit with Termination	Discounted Benefit with Termination
A.9	7/1/2004	2	40,000	23,877	11,772
A.10	7/1/2004	1	20,000	11,959	9,942
A.11	7/1/2004	1	20,000	11,959	10,011
A.12	7/1/2004	1	20,000	11,936	5,869
A.13	7/1/2004	1	20,000	11,957	9,273
A.14	7/1/2004	1	20,000	11,963	10,053
A.15	7/1/2004	1	20,000	11,940	6,337
A.16	7/1/2004	2	40,000	23,896	15,016
A.17	7/1/2004	2	40,000	23,926	20,751
A.18	7/1/2004	4	65,000	38,768	22,651
A.19	7/1/2004	1	20,000	11,963	10,116
A.20	7/1/2004	2	40,000	23,903	16,814
A.21	7/1/2004	1	20,000	11,963	10,115
A.22	7/1/2004	1	20,000	11,932	5,594
A.23	7/1/2004	1	20,000	11,970	11,300
A.24	7/1/2004	2	40,000	23,914	16,641
A.25	7/1/2004	1	20,000	11,970	11,009
A.26	7/1/2004	2	40,000	23,934	21,991
A.27	7/1/2004	2	40,000	23,938	22,486
A.28	7/1/2004	1	20,000	11,963	10,139
A.29	7/1/2004	3	60,000	35,833	22,382
A.30	7/1/2004	3	60,000	35,874	23,981
A.31	7/1/2004	1	20,000	13,840	13,069
A.32	7/1/2004	3	60,000	35,844	22,464
A.33	7/1/2004	1	20,000	11,943	6,541
A.34	7/1/2004	3	60,000	35,866	27,500
A.35	7/1/2004	1	20,000	11,945	6,958
A.36	7/1/2004	2	40,000	23,899	15,719
A.37	7/1/2004	3	60,000	35,832	20,767
A.38	7/1/2004	2	40,000	23,908	17,613
A.39	7/1/2004	2	40,000	23,934	21,776
A.40	7/1/2004	1	20,000	11,949	6,884
A.41	7/1/2004	1	20,000	11,945	6,601
A.42	7/1/2004	1	20,000	11,959	9,771
A.43	7/1/2004	3	60,000	35,851	24,831
A.44	7/1/2004	3	60,000	38,597	33,873
A.45	7/1/2004	1	20,000	11,963	9,831
A.46	7/1/2004	1	20,000	11,957	6,868
A.47	7/1/2004	1	20,000	11,950	7,878
A.48	7/1/2004	2	40,000	25,810	23,617
A.49	7/1/2004	4	80,000	47,777	28,370
A.50	7/1/2004	2	40,000	23,868	11,114
A.51	7/1/2004	2	40,000	26,636	23,848
A.52	7/1/2004	2	40,000	23,912	18,183
A.53	7/1/2004	1	20,000	11,967	10,296
A.54	7/1/2004	2	40,000	23,919	18,959
A.55	7/1/2004	2	40,000	23,902	16,124
A.56	7/1/2004	3	60,000	35,870	26,820
A.57	7/1/2004	3	60,000	35,825	20,461
A.58	7/1/2004	2	40,000	23,888	13,515

Exhibit 2

Ohio Bureau of Workers Compensation
Estimated Impact of Scholarship to Surviving Dependants
Private Employers and State Agencies

Claim	Policy start date	# of dependants < 25 at time of death	Nominal Benefit	Nominal Benefit with Termination	Discounted Benefit with Termination
A.59	7/1/2004	2	40,000	23,888	13,175
A.60	7/1/2004	1	20,000	11,959	9,525
A.61	7/1/2004	2	40,000	23,883	12,628
A.62	7/1/2004	1	20,000	11,968	11,101
A.63	7/1/2004	3	60,000	35,844	22,578
A.64	7/1/2004	2	40,000	23,991	22,512
B.5	7/1/2005	3	60,000	37,764	33,352
B.6	7/1/2005	1	20,000	11,951	8,439
B.7	7/1/2005	3	60,000	35,857	25,323
B.8	7/1/2005	1	20,000	11,963	10,144
B.9	7/1/2005	1	20,000	11,955	9,000
B.10	7/1/2005	3	60,000	35,846	23,528
B.11	7/1/2005	2	40,000	23,900	16,198
B.12	7/1/2005	2	40,000	23,921	19,841
B.13	7/1/2005	4	80,000	47,760	26,818
B.14	7/1/2005	2	40,000	26,628	23,187
B.15	7/1/2005	1	20,000	11,959	9,957
B.16	7/1/2005	3	60,000	35,862	26,237
B.17	7/1/2005	1	20,000	11,968	11,402
B.18	7/1/2005	1	15,000	6,403	6,243
B.19	7/1/2005	1	20,000	11,932	5,553
B.20	7/1/2005	2	25,000	12,984	12,372
B.21	7/1/2005	2	40,000	23,890	13,698
B.22	7/1/2005	2	40,000	23,887	13,597
B.23	7/1/2005	3	60,000	35,813	18,440
B.24	7/1/2005	1	20,000	11,938	5,986
B.25	7/1/2005	3	60,000	35,834	22,038
B.26	7/1/2005	1	20,000	11,950	8,106
B.27	7/1/2005	3	60,000	37,748	30,360
B.28	7/1/2005	2	35,000	21,076	14,279
B.29	7/1/2005	2	40,000	23,870	11,677
B.30	7/1/2005	1	20,000	11,950	8,205
B.31	7/1/2005	2	40,000	23,921	19,346
B.32	7/1/2005	3	60,000	35,810	18,233
B.33	7/1/2005	1	20,000	11,967	10,530
B.34	7/1/2005	4	80,000	47,793	24,151
B.35	7/1/2005	1	20,000	11,949	7,655
B.36	7/1/2005	1	20,000	11,963	9,921
B.37	7/1/2005	3	60,000	38,584	31,475
B.38	7/1/2005	2	40,000	23,893	14,892
B.39	7/1/2005	1	20,000	11,967	10,213
B.40	7/1/2005	3	60,000	35,806	17,298
B.41	7/1/2005	1	20,000	11,943	5,379
B.42	7/1/2005	2	40,000	23,900	16,202
B.43	7/1/2005	2	40,000	23,893	14,255
B.44	7/1/2005	3	60,000	35,833	21,766
B.45	7/1/2005	3	60,000	35,850	23,684
B.46	7/1/2005	1	20,000	11,963	10,215
B.47	7/1/2005	2	40,000	23,872	11,673
B.48	7/1/2005	3	60,000	38,587	31,862

Exhibit 2

Ohio Bureau of Workers Compensation
Estimated Impact of Scholarship to Surviving Dependants
Private Employers and State Agencies

Claim	Policy start date	# of dependants < 25 at time of death	Nominal Benefit	Nominal Benefit with Termination	Discounted Benefit with Termination
B.49	7/1/2005	2	35,000	18,373	16,726
B.50	7/1/2005	1	20,000	11,940	6,258
B.51	7/1/2005	1	20,000	11,932	5,418
B.52	7/1/2005	2	40,000	23,924	17,277
B.53	7/1/2005	2	40,000	23,909	17,678
C.5	7/1/2006	3	60,000	35,846	23,359
C.6	7/1/2006	3	60,000	35,869	28,254
C.7	7/1/2006	1	20,000	11,932	5,009
C.8	7/1/2006	2	35,000	20,242	19,187
C.9	7/1/2006	1	20,000	9,318	8,895
C.10	7/1/2006	1	20,000	11,943	5,422
C.11	7/1/2006	1	20,000	11,970	11,058
C.12	7/1/2006	2	40,000	23,886	13,242
C.13	7/1/2006	1	20,000	11,959	9,877
C.14	7/1/2006	3	60,000	35,845	22,872
C.15	7/1/2006	5	100,000	59,769	43,968
C.16	7/1/2006	2	40,000	23,912	18,282
C.17	7/1/2006	2	40,000	23,906	17,495
C.18	7/1/2006	1	20,000	11,932	5,551
C.19	7/1/2006	3	60,000	35,853	24,996
C.20	7/1/2006	2	40,000	23,893	14,303
C.21	7/1/2006	2	40,000	23,933	21,038
C.22	7/1/2006	2	40,000	23,876	12,241
C.23	7/1/2006	3	60,000	35,832	20,641
C.24	7/1/2006	2	40,000	23,878	12,571
C.25	7/1/2006	2	40,000	23,871	11,554
C.26	7/1/2006	1	20,000	11,950	7,847
C.27	7/1/2006	3	60,000	35,876	28,035
C.28	7/1/2006	2	25,000	14,856	14,173
C.29	7/1/2006	4	70,000	37,035	32,107
C.30	7/1/2006	3	60,000	35,837	18,816
C.31	7/1/2006	3	60,000	35,846	23,194
C.32	7/1/2006	2	40,000	23,927	20,254
C.33	7/1/2006	2	40,000	23,918	13,709
C.34	7/1/2006	2	40,000	23,923	19,717
C.35	7/1/2006	2	40,000	23,890	13,883
C.36	7/1/2006	5	95,000	51,604	44,615
C.37	7/1/2006	2	40,000	23,933	20,743
C.38	7/1/2006	2	30,000	15,769	14,391
C.39	7/1/2006	1	20,000	11,957	9,393
C.40	7/1/2006	1	20,000	11,932	5,606
C.41	7/1/2006	4	80,000	47,767	26,425
C.42	7/1/2006	1	20,000	11,940	6,175
C.43	7/1/2006	1	20,000	11,952	8,582
C.44	7/1/2006	2	40,000	23,930	20,182
C.45	7/1/2006	4	80,000	47,833	36,996
C.46	7/1/2006	3	60,000	35,902	32,648

Exhibit 3

Ohio Bureau of Workers Compensation
Estimated Impact of Scholarship to Surviving Dependants

PA/PES Policies:

Policy start date	# of dependants < 25 at time of death	Nominal Benefit	Nominal Benefit with Termination	Discounted Benefit with Termination
7/1/2004	102	2,025,000	1,219,428	866,014
7/1/2005	97	1,910,000	1,146,177	776,086
7/1/2006	94	1,835,000	1,081,043	767,307
Average	98	$1,923,333	$1,148,883	$803,136

PEC Policies:

Policy start date	# of dependants < 25 at time of death	Nominal Benefit	Nominal Benefit with Termination	Discounted Benefit with Termination
1/1/2004	19	380,000	228,877	138,664
1/1/2005	7	140,000	83,678	61,829
1/1/2006	7	140,000	83,626	52,512
Average	11	$220,000	$132,060	$84,335

| **Combined** | 109 | $2,143,333 | $1,280,943 | $887,471 |