



# Actuarial Review of the Self-Insured Workers' Compensation Program

*Outstanding Liabilities as of June 30, 2017  
Forecast for Fiscal Year 2017-18*

***Presented to***

**Municipal Pooling Authority**

July 2017



Friday, July 14, 2017

Ms. Linda M. Cox  
Chief Administrative Officer  
Municipal Pooling Authority  
1911 San Miguel Drive, Suite 100  
Walnut Creek, CA 94596

Re: Actuarial Review of the Self-Insured Workers' Compensation Program

Dear Ms. Cox:

As you requested, we have completed our review of Municipal Pooling Authority's (MPA's) self-insured workers' compensation program. Assuming an SIR of \$500,000 per occurrence, we estimate the ultimate cost of claims and expenses for claims incurred during the 2017-18 program years to be \$7,364,000. This amount includes allocated loss adjustment expenses (ALAE), unallocated loss adjustment expenses (ULAE), and a discount for anticipated investment income. ALAE is the direct cost associated with the defense of individual claims (e.g. legal fees, investigation fees, court charges). ULAE is the cost to administer all claims to final settlement, which may be years into the future (e.g. claims adjusters' salaries, taxes). The discount for investment income is calculated based on the likely payout pattern of MPA's claims, assuming a 2.5% return on investments per year. For budgeting purposes, the expected costs of 2017-18 claims translate to rates of \$2.71 per \$100 of payroll.

In addition, we estimate the program's liability for outstanding claims to be \$28,715,000 as of June 30, 2017, again including ALAE and ULAE, and discounted for anticipated investment income. Given estimated program assets of \$34,543,000 as of June 30, 2017, the program will be funded between the 85% and 90% confidence levels.

The \$28,715,000 estimate is the minimum liability to be booked by MPA at June 30, 2017 for its workers' compensation program, in accordance with Governmental Accounting Standards Board (GASB) Statement #10. GASB #10 requires MPA to accrue a liability on its financial statements for the ultimate cost of claims and expenses associated with all reported and unreported claims, including ALAE and ULAE. GASB #10 does not prohibit the discounting of losses to recognize investment income.

Our conclusions regarding MPA's liability for unpaid loss and loss adjustment expenses (LAE) at June 30, 2017 are summarized in the table below.

Municipal Pooling Authority  
Self-Insured Workers' Compensation Program  
Estimated Liability for Unpaid Loss and LAE  
at June 30, 2017

	Expected	Marginally Acceptable 70% CL	Recommended Range			Conservative 90% CL
			Low 75% CL	Target 80% CL	High 85% CL	
Loss and ALAE	\$31,698,000	\$34,329,000	\$35,343,000	\$36,548,000	\$38,006,000	\$39,939,000
ULAE	1,664,000	1,802,000	1,855,000	1,918,000	1,995,000	2,097,000
Investment Income Offset	<u>(4,647,000)</u>	<u>(5,033,000)</u>	<u>(5,181,000)</u>	<u>(5,358,000)</u>	<u>(5,572,000)</u>	<u>(5,855,000)</u>
Discounted Loss and LAE	\$28,715,000	\$31,098,000	\$32,017,000	\$33,108,000	\$34,429,000	\$36,181,000
Available Funding	<u>34,543,000</u>	<u>34,543,000</u>	<u>34,543,000</u>	<u>34,543,000</u>	<u>34,543,000</u>	<u>34,543,000</u>
Surplus or (Deficit)	\$5,828,000	\$3,445,000	\$2,526,000	\$1,435,000	\$114,000	(\$1,638,000)

GASB #10 does not address an actual funding requirement for the program, but only speaks to the liability to be recorded on MPA's financial statements.

Because actuarial estimates of claims costs are subject to some uncertainty, we recommend that an amount in addition to the discounted expected loss costs be set aside as a risk margin for contingencies. Generally, the amount should be sufficient to fund assets to the 75% to 85% confidence level for primary programs. We consider funding assets to the 70% confidence level to be marginally acceptable and funding assets to the 90% confidence level to be conservative.

Furthermore, the CSAC Excess Insurance Authority standard states that based upon the actuarial recommendations, the member should maintain assets and make funding contributions equal to or exceeding the present value of expected losses and a reasonable margin for contingencies.

The table below shows our funding recommendations for Municipal Pooling Authority for the 2017-18 fiscal year.

Municipal Pooling Authority  
Self-Insured Workers' Compensation Program  
Funding Guidelines for 2017-18  
Self-Insured Retention (SIR) of \$500,000

	Expected	Marginally Acceptable 70% CL	Recommended Range			Conservative 90% CL
			Low 75% CL	Target 80% CL	High 85% CL	
Loss and ALAE	\$8,338,000	\$9,205,000	\$9,555,000	\$9,956,000	\$10,439,000	\$11,090,000
ULAE	0	0	0	0	0	0
Investment Income Offset	<u>(974,000)</u>	<u>(1,075,000)</u>	<u>(1,116,000)</u>	<u>(1,163,000)</u>	<u>(1,219,000)</u>	<u>(1,295,000)</u>
Discounted Loss and LAE	\$7,364,000	\$8,130,000	\$8,439,000	\$8,793,000	\$9,220,000	\$9,794,000
Non-claims Related Expenses	<u>3,520,000</u>	<u>3,520,000</u>	<u>3,520,000</u>	<u>3,520,000</u>	<u>3,520,000</u>	<u>3,520,000</u>
Indicated Funding	\$10,884,000	\$11,650,000	\$11,959,000	\$12,313,000	\$12,740,000	\$13,314,000
Rate per \$100 of 2016-17 Payroll	\$4.00	\$4.28	\$4.39	\$4.52	\$4.68	\$4.89

The funding recommendations shown in the table above do not include any recognition of the existing funding margin at June 30, 2017.

Note that while the projected expenses are for the 2017-18 fiscal year, the rate is a percentage of 2016-17 payroll. This is because in practice MPA collects 2017-18 contributions based on member payroll from 2016-17.

The loss projections in this report reflect the estimated impact of benefit legislation contained in AB749, AB227, SB228, SB899, and recent WCAB court decisions based upon information provided by the WCIRB.

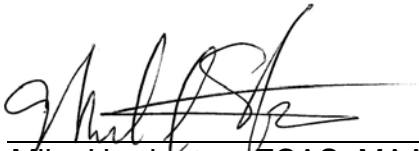
The ultimate impact on loss costs of legislated benefit adjustments are generally difficult to forecast in advance because the changes typically take place over a period of several years following enactment. Furthermore, actuarially derived benefit level evaluations often underestimate actual future cost levels. The shortfalls result from a variety of circumstances, including: increases in utilization levels, unanticipated changes in administrative procedures, and cost shifting among benefit categories. Thus, actual cost increases could differ, perhaps substantially, from the WCIRB's estimates.

The report that follows outlines the scope of our study, its background, and our conclusions, recommendations, and assumptions. Judgments regarding the appropriateness of our conclusions and recommendations should be made only after studying the report in its entirety, including the graphs, attachments, exhibits and appendices. Our report has been developed for MPA's internal use. It is not intended for general circulation.

We appreciate the opportunity to be of service to Municipal Pooling Authority in preparing this report. Please feel free to call Mike Harrington at (916) 244-1162 or Becky Richard at (916) 244-1183 with any questions you may have concerning this report.

Sincerely,

Bickmore



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Mike Harrington, FCAS, MAAA  
President, Actuarial Consulting, Bickmore  
Fellow, Casualty Actuarial Society  
Member, American Academy of Actuaries



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Becky Richard, ACAS, MAAA  
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## **I. BACKGROUND**

Municipal Pooling Authority began its self-insured workers' compensation program on July 1, 1978. Its current self-insured retention is \$500,000. Claims administration services are provided by MPA's Risk Management Department. Additional background on the program is given in Appendix J.

As of June 30, 2017, MPA is expected to have assets of \$34,543,000 for the program. Additional background on program funding is given in Appendix K.

The purpose of this review is to provide a guide to MPA to determine reasonable funding levels for its self-insurance program according to the funding policy MPA has adopted and to comply with Governmental Accounting Standards Board Statements #10 and #30. The specific objectives of the study are to estimate MPA's liability for outstanding claims as of June 30, 2017, project ultimate loss costs for 2017-18, and provide funding guidelines to meet these liabilities and future costs.

## **II. CONCLUSIONS AND RECOMMENDATIONS**

### **A. LIABILITY FOR OUTSTANDING CLAIMS**

Graph 1 on the following page summarizes our assessment of MPA's funding position as of June 30, 2017. The dark-colored bars indicate our estimates of the program's liability for outstanding claims before recognition of the investment income that can be earned on the assets held before the claim payments come due. The horizontal line across the graph indicates MPA's estimated available assets at June 30, 2017.

Our best estimate of the full value of MPA's liability for outstanding claims within its self-insured retention (SIR) is \$33,362,000 as of June 30, 2017. This amount includes losses, allocated loss adjustment expenses (ALAE), and unallocated loss adjustment expenses (ULAE). ALAE is the direct cost associated with the defense of individual claims (e.g. legal fees, investigation fees, court charges). ULAE is the cost to administer claims to final settlement, which may be years in the future (e.g. claims adjusters' salaries, taxes).

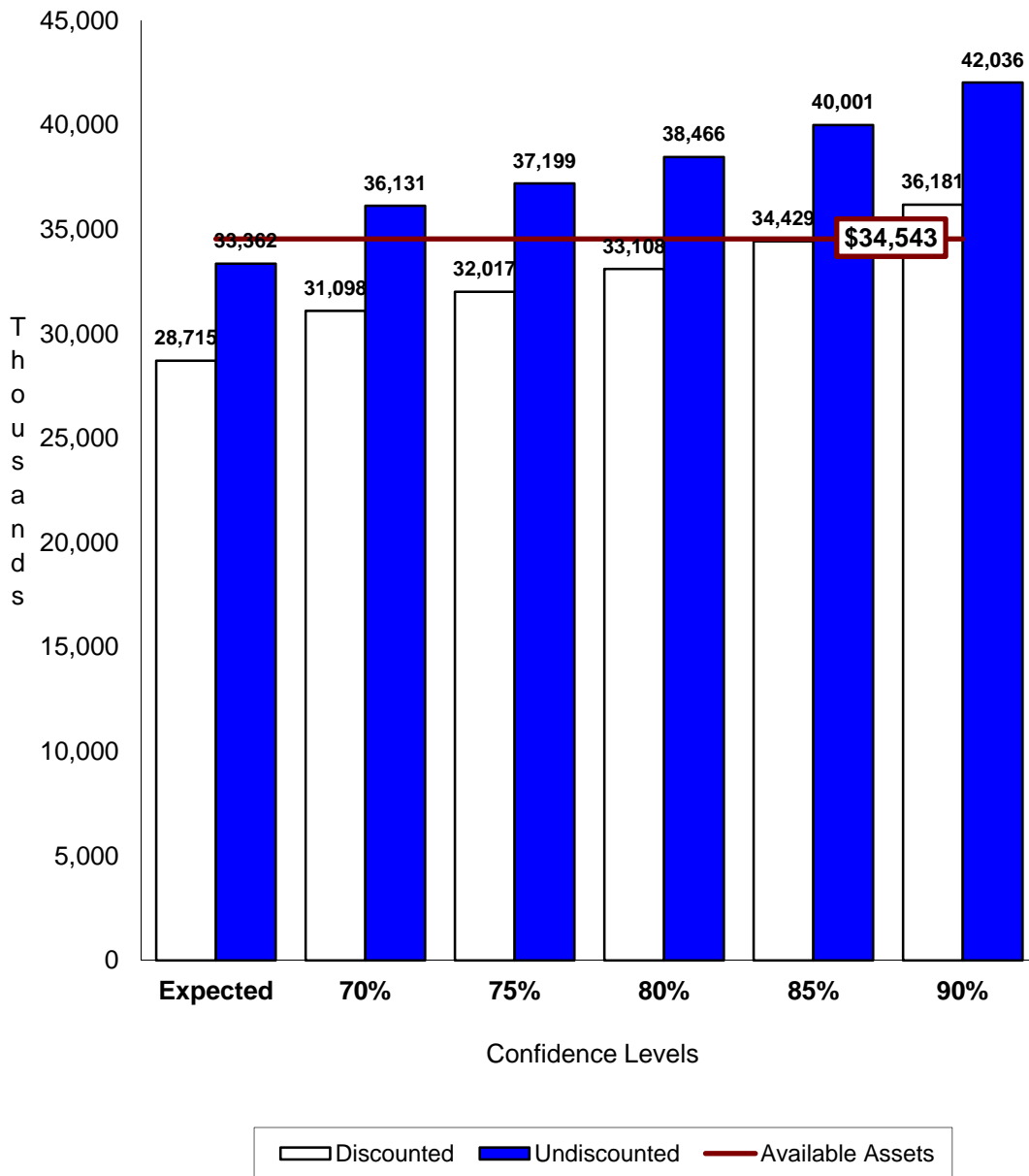
There is some measure of uncertainty associated with our best estimate because of the random nature of much of the process that determines ultimate claims costs. For this reason, we generally recommend that a program such as this include some funding margin for the possibility that actual loss costs will be greater than the best estimate. We generally measure the amount of this margin by thinking in terms of the probability distribution of actual possible results around our best estimate. As the margin grows, the probability that the corresponding funding amount will be sufficient to meet actual claim liabilities increases. We typically refer to this probability as the "confidence level" of funding. Graph 1 shows the liabilities for outstanding claims at several confidence levels that are typically of interest to risk managers in formulating funding policies for self-insurance programs.

The MPA can earn investment income on the assets it holds until claims payments come due. Assuming a long-term average annual return on investments of 2.5%, we estimate the impact of investment income earnings to be about 13.9% if the program is funded within the range indicated in the graphs, resulting in a discounted liability for outstanding claims of \$28,715,000 as of June 30, 2017.

Investment income earnings will be less than this when the program does not maintain sufficient funding, and more when there is excess funding. Thus, thinking in terms of liabilities discounted for investment income can actually mask funding deficiencies and redundancies that might otherwise be obvious. However, the discounted liabilities do represent legitimate funding targets. The light-colored bars on Graph 1 shows our estimates of MPA's discounted liability for outstanding claims.



Municipal Pooling Authority  
 Workers' Compensation  
 Available Assets vs Outstanding Liability (\$000's)  
 at June 30, 2017



The table below displays a breakdown of the program's outstanding loss and LAE liabilities into case reserves and incurred but not reported (IBNR) reserves at June 30, 2017, before recognition of investment income.

Municipal Pooling Authority  
 Self-Insured Workers' Compensation Program  
 Estimated Liability for Unpaid Loss and LAE at June 30, 2017

Year	Case Reserves	IBNR Reserves	Total Outstanding
Prior	\$650,907	\$125,682	\$776,589
1996-97	23,804	18,228	42,032
1997-98	60,327	28,758	89,085
1998-99	0	0	0
1999-00	179,209	39,007	218,216
2000-01	377,178	70,615	447,793
2001-02	128,946	55,928	184,874
2002-03	185,847	108,950	294,797
2003-04	117,467	124,852	242,319
2004-05	272,377	133,188	405,565
2005-06	311,790	180,617	492,407
2006-07	218,445	250,240	468,685
2007-08	328,117	358,822	686,939
2008-09	468,071	506,486	974,557
2009-10	677,293	836,196	1,513,489
2010-11	703,087	805,157	1,508,244
2011-12	633,333	981,883	1,615,216
2012-13	1,025,147	1,196,204	2,221,351
2013-14	2,080,538	1,034,243	3,114,781
2014-15	2,009,583	1,789,442	3,799,025
2015-16	1,984,260	3,209,529	5,193,789
2016-17	1,884,501	5,523,995	7,408,496
Loss and ALAE	\$14,320,227	\$17,378,022	\$31,698,249
ULAE		1,664,000	1,664,000
Total	\$14,320,227	\$19,042,022	\$33,362,249

## **B. PROGRAM FUNDING: GOALS AND OBJECTIVES**

As self-insurance programs have proliferated among public entities, it has become apparent that there is a large measure of inconsistency in the way in which these programs recognize and account for their claims costs. This is the result of the fact that there have been several different sources of guidance available, none of which has been completely relevant to public entity self-insurance programs.

According to the Governmental Accounting Standards Board (GASB), the most relevant source of guidance on the subject is Financial Accounting Standards Board Statement #60. A liability for unpaid claim costs, including all loss adjustment expenses, should be accrued at the time the self-insured events occur. This liability should include an allowance for incurred but not reported claims. It may be discounted for investment income at an appropriate rate of return, provided the discounting is disclosed. The regulations detailing the way in which this must be done are outlined in GASB's statements #10 and #30. These regulations are required to be applied by MPA.

GASB #10 and #30 do not address asset requirements. They do, however, allow a range of amounts to be recognized for accounting purposes; specifically, GASB #10 and #30 allow recognition of a risk margin for unexpectedly adverse loss experience. Thus, for accounting purposes, it is possible to formulate a funding policy from a range of alternatives. The uncertainty in any estimate of the program's liability for outstanding claims should be taken into consideration in determining funding policy, but it may be offset by recognizing anticipated investment income earnings. This usually means developing a funding program based on discounted claims costs with some risk margin for unexpected adverse loss experience.

The amount of the risk margin should be a question of long-term funding policy. We recommend that the risk margin be determined by thinking in terms of the probability that a given level of assets will prove to be adequate. For example, a reasonable goal might be to maintain assets at the 85% confidence level.

A key factor to consider in determining funding policy is the degree to which stability is required in the level of contributions to the program from year to year. If you elect to maintain assets at a low confidence level, the chances are much greater that future events will prove that additional contributions should have been made for old claims. The additional contributions for old claims may be required at the same time that costs are increasing dramatically on new claims. The burden of funding for increases on past years as well as on current years, may well be prohibitive.

We generally recommend maintaining program assets at the 80% confidence level, after recognition of investment income, with a recommended range of the 75% to 85% confidence levels. We tend to think of the 70% confidence level as marginally acceptable and of the 90% confidence level as conservative. We recommend the 75% to 85% confidence level range because the probabilities are reasonably high that resulting assets will be sufficient to meet claim liabilities, yet the required risk margins are not so large that they will cause most self-insured entities to experience undue financial hardship. In addition, within this range, anticipated investment income generally offsets the required risk margin for the most part, which means that assets are likely sufficient on an undiscounted basis.

We also strongly believe, however, that the confidence level to which any future year is funded should be evaluated in light of the relative certainty of the assumptions underlying the actuarial analysis, MPA's other budgetary constraints, and the relative level of risk it is believed appropriate to assume. This means formulating both short and long-term funding goals, which may be the same in some years, but different in others. In general, we recommend that you fund each year's claims costs in that year. When surpluses or deficits have developed on outstanding liabilities and funding adjustments are necessary, they should be clearly identified as such so that the habit of funding each year's claims costs that year is maintained. We also recommend that you reduce a surplus more slowly than you would accumulate funding to reduce a deficit.

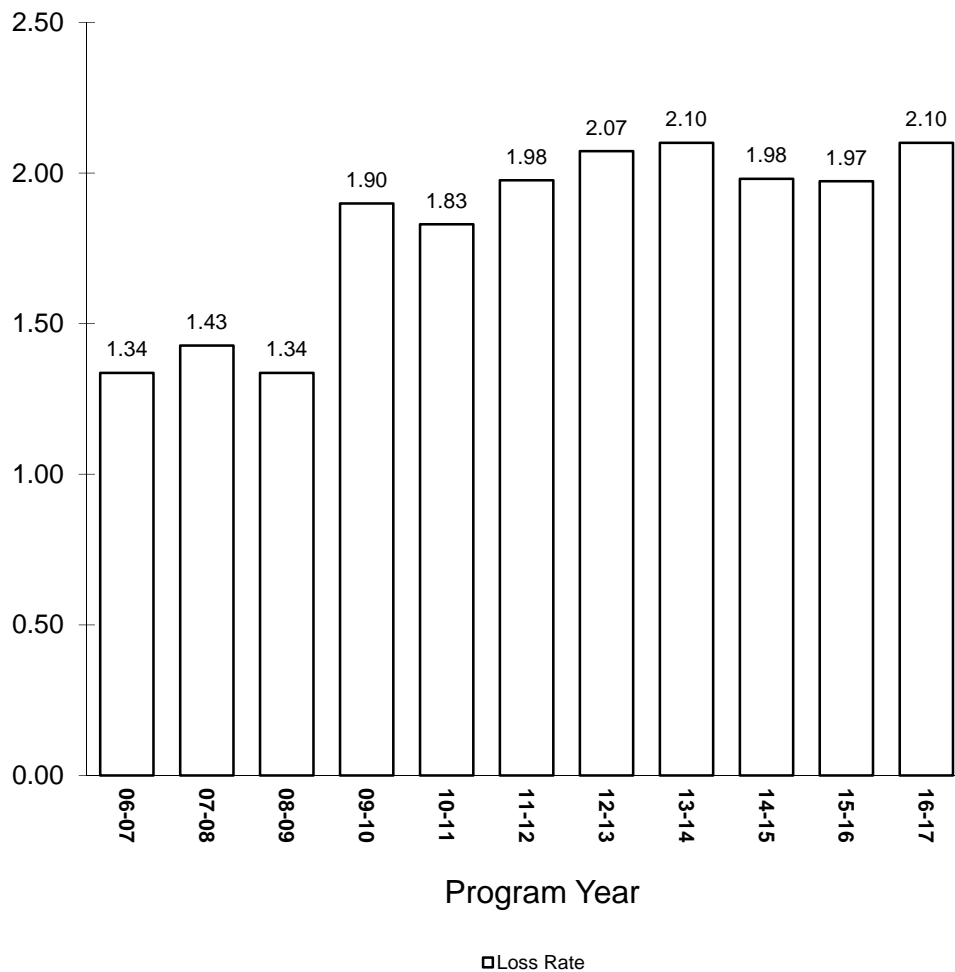
It is estimated that program assets will be \$34,543,000 at June 30, 2017, resulting in the program being funded between the 85% and 90% confidence levels.

### C. HISTORICAL TRENDS IN THE SELF-INSURANCE PROGRAM

MPA's loss rate (based on losses limited to \$100,000 per occurrence) has generally increased over the 10-year period shown below. The program's loss rate increased from \$1.34 per \$100 of payroll during the 2006-07 program year to \$2.10 for the 2013-14 program year. Our projected loss rate for 2016-17 of \$2.10 per \$100 of payroll is based on this upward trend.

Graph 2

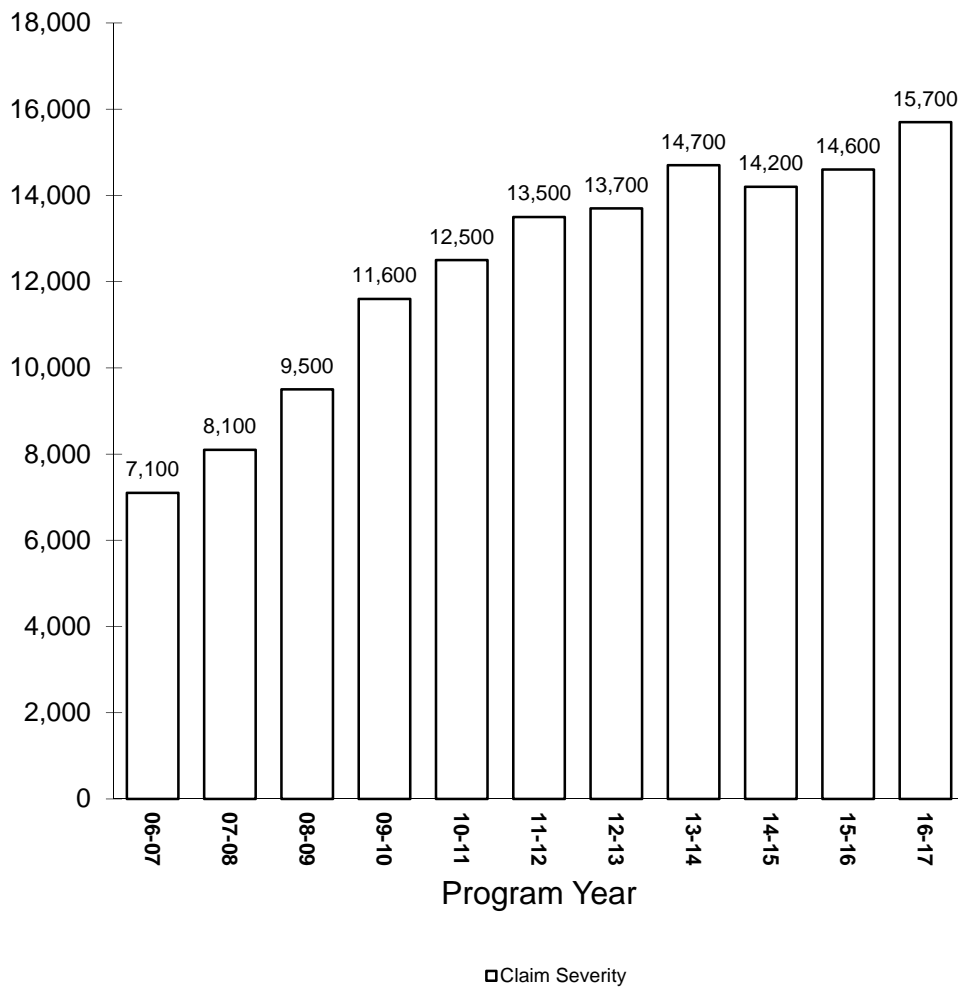
Municipal Pooling Authority  
Workers' Compensation  
Dollars of Loss per  
\$100 of Payroll



The following chart shows that MPA's average claim size, developed to ultimate and limited to \$100,000 per occurrence, has increased significantly during the period shown below. The projected 2016-17 average cost per claim of about \$15,700 is based on the average of the latest three years and the apparent upward trend.

Graph 3

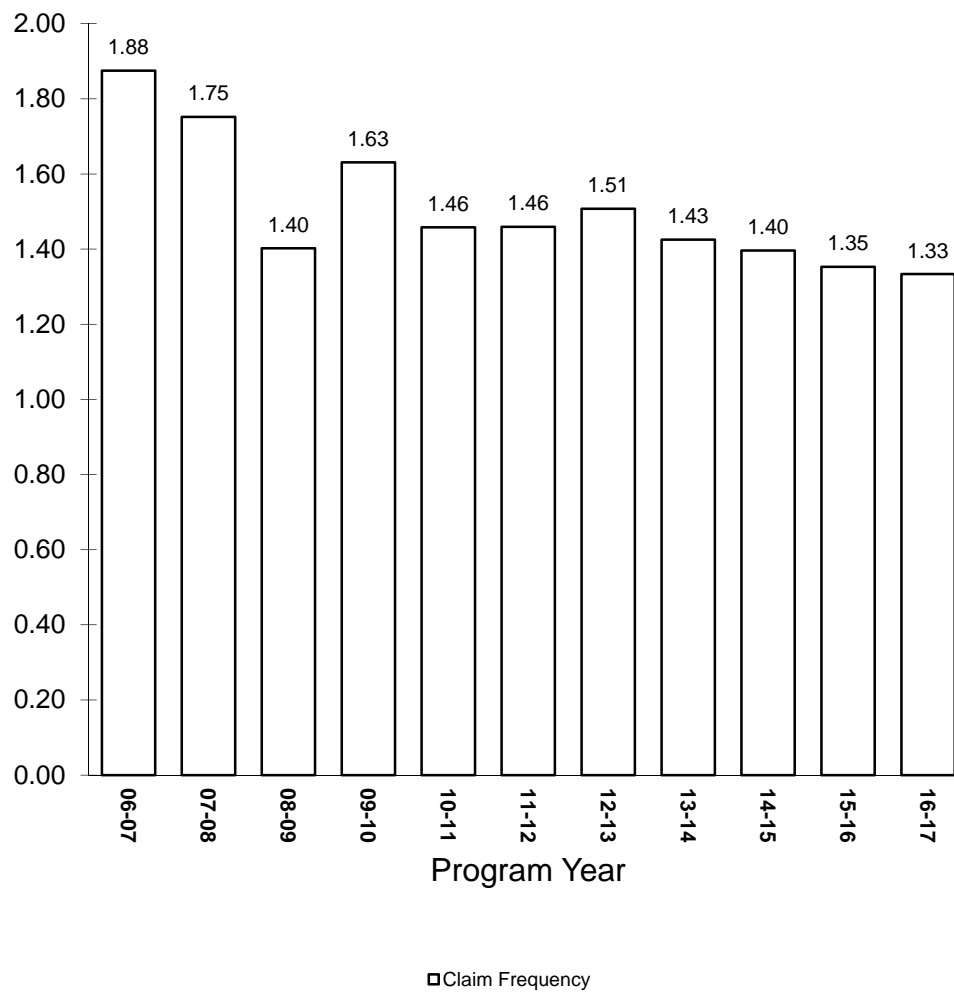
Municipal Pooling Authority  
Workers' Compensation  
Dollars of Loss per Claim



Over the past ten years, MPA's frequency of claims per \$1 million payroll had been generally decreasing overall. From 2006-07 to 2010-11, the program averaged 1.62 claims. The average frequency decreased to 1.43 during the most recent five years and our projection for 2016-17 is 1.33 based on the average of the most recent five years and the downward trend.

Graph 4

Municipal Pooling Authority  
Workers' Compensation  
Number of Claims per  
\$1 Million of Payroll



#### D. COMPARISON WITH PREVIOUS RESULTS

The prior report for Municipal Pooling Authority was dated April 11, 2016. In the table below we display actual versus expected development of incurred losses and ALAE by accident year between the October 31, 2015 evaluation date of the prior report and the October 31, 2016 evaluation date of the current report.

##### Actual Versus Expected Incurred Loss and ALAE Development

Accident Year	Expected Incurred Development	Actual Incurred Development	Actual Minus Expected
Prior	\$41,000	\$148,999	\$107,999
1996-97	5,000	(11,318)	(16,318)
1997-98	11,000	1,062	(9,938)
1998-99	13,000	(2,366)	(15,366)
1999-00	12,000	11,600	(400)
2000-01	28,000	56,767	28,767
2001-02	16,000	6,563	(9,437)
2002-03	33,000	5,005	(27,995)
2003-04	31,000	(3,486)	(34,486)
2004-05	30,000	109,863	79,863
2005-06	37,000	73,449	36,449
2006-07	52,000	69,218	17,218
2007-08	72,000	(40,196)	(112,196)
2008-09	108,000	(12,548)	(120,548)
2009-10	172,000	111,538	(60,462)
2010-11	127,000	429,146	302,146
2011-12	241,000	(238,365)	(479,365)
2012-13	260,000	(276,001)	(536,001)
2013-14	572,000	1,078,173	506,173
2014-15	1,463,000	1,399,703	(63,297)
2015-16	2,665,000	2,388,711	(276,289)
Total	\$5,989,000	\$5,305,517	(\$683,483)

As shown, actual incurred development was less than anticipated since the prior report. Based on the assumptions from the prior report, it was expected that incurred losses would increase by \$5,989,000 between the two evaluation dates. However, actual development was approximately \$5,305,517; or about \$683,483 less than expected. Overall, MPA has experienced favorable loss experience for most accident years. However, this favorable experience is partially offset by the adverse loss development during the years prior to 1996-97, 2000-01, 2004-05, 2005-06, 2006-07, 2010-11, and 2013-14 accident years.



In the table below we display actual versus expected development of paid losses and ALAE by accident year between the October 31, 2015 evaluation date of the prior report and the October 31, 2016 evaluation date of the current report.

### Actual Versus Expected Paid Loss and ALAE Development

Accident Year	Expected Paid Development	Actual Paid Development	Actual Minus Expected
Prior	\$126,000	\$85,081	(\$40,919)
1996-97	12,000	586	(11,414)
1997-98	15,000	10,449	(4,551)
1998-99	6,000	0	(6,000)
1999-00	27,000	14,704	(12,296)
2000-01	48,000	46,793	(1,207)
2001-02	23,000	19,296	(3,704)
2002-03	41,000	7,182	(33,818)
2003-04	42,000	6,414	(35,586)
2004-05	45,000	39,069	(5,931)
2005-06	61,000	110,305	49,305
2006-07	52,000	27,784	(24,216)
2007-08	117,000	118,635	1,635
2008-09	178,000	95,616	(82,384)
2009-10	283,000	316,839	33,839
2010-11	308,000	902,807	594,807
2011-12	417,000	337,196	(79,804)
2012-13	656,000	654,493	(1,507)
2013-14	989,000	1,069,300	80,300
2014-15	1,460,000	1,261,991	(198,009)
2015-16	1,213,000	980,112	(232,888)
Total	\$6,119,000	\$6,104,652	(\$14,348)

As shown, actual paid development was less than anticipated since the prior report. Based on the assumptions from the prior report, it was expected that paid losses would increase by \$6,119,000 between the two evaluation dates. However, actual development was approximately \$6,104,652; or about \$14,348 less than expected. Similar to the incurred loss development, most accident years prior have developed lower than expected. However, this favorable experience is nearly offset by the adverse loss development during the years 2005-06, 2009-10, 2010-11, and 2013-14 accident years.

In the table below we display the change in our estimates of the program's ultimate losses and ALAE by accident year since our prior report.

### Change in Ultimate Loss and ALAE

Accident Year	Prior Report	Current Report	Change In Ultimate
Prior	\$20,963,000	\$21,153,000	\$190,000
1996-97	2,678,000	2,664,000	(14,000)
1997-98	3,612,000	3,602,000	(10,000)
1998-99	3,355,000	3,300,031	(54,969)
1999-00	3,067,000	3,066,000	(1,000)
2000-01	4,170,000	4,204,000	34,000
2001-02	2,488,000	2,478,000	(10,000)
2002-03	3,896,000	3,871,000	(25,000)
2003-04	3,429,000	3,400,000	(29,000)
2004-05	2,771,000	2,861,000	90,000
2005-06	3,265,000	3,307,000	42,000
2006-07	3,803,000	3,829,000	26,000
2007-08	4,697,000	4,588,000	(109,000)
2008-09	5,677,000	5,521,000	(156,000)
2009-10	7,791,000	7,691,000	(100,000)
2010-11	6,126,000	6,595,000	469,000
2011-12	6,825,000	6,347,000	(478,000)
2012-13	7,296,000	7,015,000	(281,000)
2013-14	7,056,000	7,390,000	334,000
2014-15	7,205,000	7,051,000	(154,000)
2015-16	7,649,000	7,371,000	(278,000)
Total	\$117,819,000	\$117,304,031	(\$514,969)

As shown, overall we have decreased our estimated ultimates by \$514,969 since our prior report. This decrease can be tied to less than anticipated loss development for the most recent accident years between the two reports as previously discussed.

At the time of the prior report, we estimated the liability for outstanding claims as of June 30, 2016 to be \$27,550,000 at the discounted, expected level. Our current estimate as of June 30, 2017, is \$28,715,000, an increase in our assessment of the MPA's outstanding liabilities, as shown below:

**Outstanding Claim Liabilities for Loss and LAE**

	Prior Report at June 30, 2016	Current Report at June 30, 2017	Change
(A) Case Reserves:	\$14,481,000	\$14,320,000	(\$161,000)
(B) IBNR Reserves:	15,900,000	17,378,000	1,478,000
(C) Claims Administration Reserves:	1,643,000	1,664,000	21,000
(D) Total Reserves:	\$32,024,000	\$33,362,000	\$1,338,000
(E) Offset for Investment Income:	(4,474,000)	(4,647,000)	(173,000)
(F) Total Outstanding Claim Liabilities:	\$27,550,000	\$28,715,000	\$1,165,000

As shown, our estimate of outstanding claims liabilities at the discounted, expected level has increased between June 30, 2016 and June 30, 2017 as reflected in our prior and current reports respectively.

The increase in claim reserves (case and IBNR) is driven primarily by greater than expected loss development during the 2010-11 and 2013-14 accident years. Reserves for future claims administration expenses have increased, resulting in a \$1,338,000 increase in total claim reserves. This increase in reserves leads to a larger offset for investment income. The net change due to the above factors is an overall increase of \$1,165,000 in our estimate of outstanding claim liabilities for loss and LAE.

At the time of the prior report, available assets were estimated to be \$31,659,000 as of June 30, 2016, which corresponded to the then-estimated discounted liability for outstanding claims between the 75% and 80% confidence levels. Available assets are currently estimated to be \$34,543,000 as of June 30, 2017, which corresponds to the currently estimated liability for outstanding claims again between the 85% and 90% confidence levels. It can be summarized as follows:

	<b>Funding Margin</b>		
	Prior Report at June 30, 2016	Current Report at June 30, 2017	Change
(A) Outstanding Liability at the Discounted Expected Level:	\$27,550,000	\$28,715,000	\$1,165,000
(B) Estimated Assets At June 30:	31,659,000	34,543,000	2,884,000
(C) Surplus/(Deficit):	\$4,109,000	\$5,828,000	\$1,719,000

As you can see, our estimate of the program's funding margin at the discounted, expected level has increased by \$1,719,000 between June 30, 2016 (as previously estimated) and June 30, 2017 (as currently estimated). This is driven by an increase in the estimated fund assets between the two points, partially offset by an increase in the estimated outstanding liability.

At the time of the prior report, our funding estimate for the 2016-17 year was \$11,465,000 at the discounted, 80% confidence level. That amount included allocated loss adjustment expenses (ALAE) and a discount for anticipated investment income, as well as all other program expenses. Our current estimate for the 2017-18 year is \$12,313,000 at the discounted, 80% confidence level, an increase in the program's expected loss costs, as shown in the table below:

**Comparison of Funding for Loss and LAE**

	Prior Report 2016-17 SIR = \$500,000	Current Report 2017-18 SIR = \$500,000	Change
(A) Ultimate Loss and ALAE:	\$7,928,000	\$8,338,000	\$410,000
(B) Offset for Investment Income:	(\$919,000)	(\$974,000)	(\$55,000)
(C) Recommended Loss and ALAE Funding:	7,009,000	7,364,000	355,000
(D) 80% Risk Margin:	1,374,000	1,429,000	55,000
(E) Non-Claim Related Expenses:	\$3,082,000	\$3,520,000	\$438,000
(F) Total Funding:	\$11,465,000	12,313,000	848,000
(G) Funding per \$100 of Payroll:	4.703	4.524	(\$0.18)

As you can see, our funding recommendations at the discounted, expected level have increased between 2016-17 and 2017-18, as shown in our prior and current reports respectively.

Our estimates of ultimate loss and ALAE have increased by \$410,000. This is driven primarily by an increase in payroll. Investment income is expected to be higher, resulting in an overall increase of \$355,000 in our annual funding estimate for loss and ALAE. In addition, other program expenses (claims administration, excess insurance, personnel, etc.) are expected to be higher. The net change due to the above factors is an overall increase of \$848,000 in our annual funding estimate for loss and LAE. On a rate basis, this is a 3.8% decrease.

## **E. DATA PROVIDED FOR THE ANALYSIS**

Overall, the data utilized in preparing this report appears to be accurate.

Comments and issues regarding the data are as follows:

- We have assumed that the program's self-insured retention will remain at \$500,000 per occurrence for 2016-17 and 2017-18 (See Appendix J).
- We estimated the June 30, 2017 asset balance by beginning with the June 30, 2016 asset balance, and adjusting for anticipated revenue and expense for 2016-17 (see Appendix K).
- We received loss data evaluated as of October 31, 2016 (See Appendix L). We also utilized the data from the MPA's most recent actuarial study for our assessment of loss development.
- We have assumed that MPA's payroll for 2016-17 will be \$272,188,713 based upon information provided by MPA (See Appendix M).

The data provided for the analysis appears to be reasonable for use in this actuarial valuation of liabilities and projection of loss costs.

### **III. ASSUMPTIONS AND LIMITATIONS**

Any quantitative analysis is developed within a very specific framework of assumptions about conditions in the outside world, and actuarial analysis is no exception. We believe that it is important to review the assumptions we have made in developing the estimates presented in this report. By doing so, we hope you will gain additional perspective on the nature of the uncertainties involved in maintaining a self-insurance program. Our assumptions, and some observations about them, are as follows:

- Our analysis is based on loss experience, exposure data, and other general and specific information provided to us by MPA. We have accepted all of this information without audit.
- We have also made use of loss statistics that have been developed from the information gathered and compiled from other California public entities with self-insured workers' compensation programs.
- We assumed that the future development of incurred and paid losses can be reasonably predicted on the basis of development of such losses in the recent past. We have also assumed that the historical development patterns for the participants of other California public entities with self-insured workers' compensation programs in the aggregate form a reasonable basis of comparison to the patterns from MPA's data.
- We have made use of cost relationships for claims of various sizes derived from the most recent actuarial review of other California public entities with self-insured workers' compensation programs in the aggregate.
- We have assumed that there is a continuing relationship between past and future loss costs.
- It is not possible to predict future claim costs precisely. Most of the cost of workers' compensation claims arise from a small number of incidents involving serious injury. A relatively small number of such claims could generate enough loss dollars to significantly reduce, or even deplete, the self-insurance fund.
- We cannot predict and have not attempted to predict the impact of future law changes and court rulings on claims costs. This is one major reason why we believe our funding recommendations are reasonable now, but should not be extrapolated into the future.
- The changes in cost levels associated with benefit increases and administrative changes typically take place over a period of several years following their enactment, and these changes are very difficult to forecast in advance. We have based our benefit level factors on those produced by the Workers' Compensation Insurance Rating Bureau of California (WCIRB). See Appendix E for a display of the benefit level cost indices by fiscal year.

- We have assumed that the loss rate trend associated with claim costs increases at 0.5% per year. We have assumed that claim severity increases at 2.5% per year, and that claim frequency decreases at 2.0% per year.
- We have assumed that payroll and other inflation-sensitive exposure measures increase 2.5% annually due to inflation.
- We have assumed that assets held for investment will generate an average annual return of 2.5% over the duration of payment of the loss liabilities. It should be noted that actual future investment returns may vary significantly from this assumption, depending upon the prevailing investment market conditions.
- The claims costs we have estimated include indemnity and medical payments, and all loss adjustment expenses. We have included estimates for excess insurance contributions and other expenses associated with the program based upon information provided by MPA.
- Our funding recommendations do not include provisions for catastrophic events not in MPA's history, such as earthquakes, flooding, mass civil disorder, or mass occupational disease.
- Our estimates assume that all excess insurance is valid and collectible. Further, our funding recommendations do not include a provision for losses greater than MPA's excess coverage.
- MPA's assets available for the program are estimated to be \$34,543,000 as of June 30, 2017 for use in this report. This is shown in further detail in Appendix K.



#### **IV. GLOSSARY OF ACTUARIAL TERMS**

**Accident Year** - Year during which the accidents that generate a group of claims occurs, regardless of when the claims are reported, payments are made, or reserves are established.

**Allocated Loss Adjustment Expenses (ALAE)** - Expense incurred in settling claims that can be directly attributed to specific individual claims (e.g., legal fees, investigative fees, court charges, etc.)

**Benefit Level Factor** - Factor used to adjust historical losses to the current level of workers' compensation benefits.

**Case Reserve** - The amount left to be paid on a claim, as estimated by the claims administrator.

**Claim Count Development Factor** - A factor that is applied to the number of claims reported in a particular accident period in order to estimate the number of claims that will ultimately be reported.

**Claim Frequency** - Number of claims per \$1 million of payroll.

**Confidence Level** - An estimated probability that a given level of funding will be adequate to pay actual claims costs. For example, the 85% confidence level refers to an estimate for which there is an 85% chance that the amount will be sufficient to pay loss costs.

**Discount Factor** - A factor to adjust estimated loss costs to reflect anticipated investment income from assets held prior to actual claim payout.

**Expected Losses** - The best estimate of the full, ultimate value of loss costs.

**Incurred but not Reported (IBNR) Losses** - Losses for which the accident has occurred but the claim has not yet been reported. This is the ultimate value of losses, less any amount that has been set up as reported losses by the claims adjuster. It includes both amounts for claims incurred but not yet received by the administrator and loss development on already reported claims.

**Loss Development Factor** - A factor applied to losses for a particular accident period to reflect the fact that reported and paid losses do not reflect final values until all claims are settled (see Section IV).

**Loss Rate** - Ultimate losses per \$100 of payroll.

**Non-Claims Related Expenses** – Program expenses not directly associated with claims settlement and administration, such as excess insurance, safety program expenses, and general overhead. These exclude expenses associated with loss settlements (Indemnity/Medical, BI/PD), legal expenses associated with individual claims (ALAE), and claims administration (ULAE).

**Outstanding Losses** - Losses that have been incurred but not paid. This is the ultimate value of losses less any amount that has been paid.

**Paid Losses** - Losses actually paid on all reported claims.

**Program Losses** - Losses, including ALAE, limited to the SIR for each occurrence.

**Reported Losses** - The total expected value of losses as estimated by the claims administrator. This is the sum of paid losses and case reserves.

**Self-Insured Retention (SIR)** - The level at which an excess insurance policy is triggered to begin payments on a claim. Financially, this is similar to an insurance deductible.

**Severity** - Average claim cost.

**Ultimate Losses** - The value of claim costs at the time when all claims have been settled. This amount must be estimated until all claims are actually settled.

**Unallocated Loss Adjustment Expenses (ULAE)** – Claim settlement expenses that cannot be directly attributed to individual claims (e.g., claims adjusters' salaries, taxes, etc.)



Workers' Compensation - Workers' Compensation  
Funding Options for Program Year 2017-2018 (SIR = \$500,000)  
One-Year Funding Plan

	Dollar Amount	Payroll Rate			
(A) Estimated Ultimate Losses Incurred in Accident Year 2017-2018: (From Appendix F)	\$8,338,000	\$3.063			
(B) Estimated Claims Administration Fees Incurred in Accident Year 2017-2018: (Included in Row (I))	0	0.000			
(C) Total Claims Costs Incurred in Accident Year 2017-2018: ((A) + (B))	<u>\$8,338,000</u>	<u>\$3.063</u>			
(D) Loss Discount Factor (Based on a Discount Rate of 2.5%.): (Appendix H, Page 2, (F))	0.883				
(E) Discounted Total Claims Costs Incurred in Accident Year 2017-2018: ((C) x (D))	<u>\$7,364,000</u>	<u>\$2.705</u>			
	<u>Marginally Acceptable</u>		<u>Recommended</u>		<u>Conservative</u>
	70%	75%	80%	85%	90%
(F) Confidence Level Factor: (From Appendix I)	1.104	1.146	1.194	1.252	1.330
(G) Margin for Adverse Experience: ((E) x [(F) - 1])	766,000	1,075,000	1,429,000	1,856,000	2,430,000
(H) Recommended Funding in 2017-2018 for Claims Costs and Other Expenses: ((E) + (G))	<u>\$8,130,000</u>	<u>\$8,439,000</u>	<u>\$8,793,000</u>	<u>\$9,220,000</u>	<u>\$9,794,000</u>
(I) Other Budgeted Program Expenses: (Provided by the Authority)	3,520,000	3,520,000	3,520,000	3,520,000	3,520,000
(J) Recommended Funding in 2017-2018 for Claims Costs, Other Expenses, and Non Claims Related Expenses:	<u>\$11,650,000</u>	<u>\$11,959,000</u>	<u>\$12,313,000</u>	<u>\$12,740,000</u>	<u>\$13,314,000</u>
(K) Rate per \$100 of Payroll: ((K) / \$2,721,887)	\$4.280	\$4.394	\$4.524	\$4.681	\$4.891
(L) Prior Rate at 80% Confidence	\$4.703	\$4.703	\$4.703	\$4.703	\$4.703
(M) Indicated Change in Rate	-9.0%	-6.6%	-3.8%	-0.5%	4.0%

Payroll rates are per hundred dollars of 2016-2017 payroll of \$272,188,700.

Workers' Compensation - Workers' Compensation

Funding Options for Program Year 2017-2018 (SIR = \$500,000)  
One-Year Funding Plan at the 80% Confidence Level

	Dollar Amount	Payroll Rate
(A) Estimated Ultimate Losses Incurred in Accident Year 2017-2018: (From Appendix F)	\$8,338,000	\$3.063
(B) Loss Discount Factor (Based on a Discount Rate of 2.5%): (Appendix H, Page 2, (F))	0.883	
(C) Discounted Total Claims Costs Incurred in Accident Year 2017-2018: ((A) x (B))	<u>\$7,364,000</u>	<u>\$2.705</u>
(D) 80% Confidence Level Factor: (From Appendix I)	1.194	1.194
(E) Margin for Adverse Experience: ((C) x [(D) - 1])	1,429,000	\$0.525
(F) Recommended Funding in 2017-2018 for Claims Costs and Other Expenses ((C) + (E))	<u>\$8,793,000</u>	<u>\$3.230</u>
(G) Other Budgeted Program Expenses: (Provided by the Authority)		
Excess Premium	\$1,686,000	\$0.619
Claims Administration	290,000	0.107
Department Personnel	868,000	0.319
DOC Expense Paid	145,000	0.053
G&A Expense Paid	<u>531,000</u>	<u>0.195</u>
Total	<u>\$3,520,000</u>	<u>\$1.293</u>
(H) Recommended Funding in 2017-2018 for Claims Costs, Other Expenses, and Non Claims Related Expenses: ((F) + (G))	<u>\$12,313,000</u>	
(I) Rate per \$100 of Payroll: ((H) / \$2,721,887)	\$4.524	
(J) Prior Rate (at 80% Confidence Level)	\$4.703	
(K) Indicated Change in Rate	-3.8%	

Payroll rates are per hundred dollars of 2016-2017 payroll of \$272,188,700.

## Workers' Compensation - Workers' Compensation

## IBNR as of 6/30/17 at Expected Claims Level

Accident Year	Estimated Ultimate (A)	Reported as of 10/31/16 (B)	Estimated IBNR as of 10/31/16 (C)	Estimated Percent of IBNR Reported Between 11/1/16 and 6/30/17 (D)	Estimated IBNR Reported (E)	Estimated IBNR as of 6/30/17 (F)
Prior	\$21,153,000	\$21,005,318	\$147,682	15.0%	\$22,000	\$125,682
1996-1997	2,664,000	2,642,772	21,228	12.4%	3,000	18,228
1997-1998	3,602,000	3,570,242	31,758	11.0%	3,000	28,758
1998-1999	3,300,031	3,300,031	0	16.5%	0	0
1999-2000	3,066,000	3,017,993	48,007	18.5%	9,000	39,007
2000-2001	4,204,000	4,117,385	86,615	18.7%	16,000	70,615
2001-2002	2,478,000	2,413,072	64,928	14.5%	9,000	55,928
2002-2003	3,871,000	3,740,050	130,950	16.7%	22,000	108,950
2003-2004	3,400,000	3,253,148	146,852	15.0%	22,000	124,852
2004-2005	2,861,000	2,711,812	149,188	10.4%	16,000	133,188
2005-2006	3,307,000	3,102,383	204,617	11.5%	24,000	180,617
2006-2007	3,829,000	3,545,760	283,240	11.7%	33,000	250,240
2007-2008	4,588,000	4,186,178	401,822	10.6%	43,000	358,822
2008-2009	5,521,000	4,951,514	569,486	11.1%	63,000	506,486
2009-2010	7,691,000	6,752,804	938,196	10.9%	102,000	836,196
2010-2011	6,595,000	5,695,843	899,157	10.4%	94,000	805,157
2011-2012	6,347,000	5,255,117	1,091,883	10.1%	110,000	981,883
2012-2013	7,015,000	5,636,796	1,378,204	13.2%	182,000	1,196,204
2013-2014	7,390,000	6,195,757	1,194,243	13.4%	160,000	1,034,243
2014-2015	7,051,000	4,606,558	2,444,442	26.8%	655,000	1,789,442
2015-2016	7,371,000	2,950,471	4,420,529	27.4%	1,211,000	3,209,529
2016-2017	8,147,000	507,005	2,209,000	27.7%	2,116,000	5,523,995
Totals	\$125,451,031	\$103,158,009	\$16,862,027		\$4,915,000	\$17,378,022

## Notes:

- (A) From Exhibit 4, Page 1.  
 (B) Provided by the Authority. These losses exclude amounts incurred above the Authority's SIR for each year.  
 (C) (A) - (B).  
 (D) Percentage of incurred but not reported (IBNR) expected to be reported between 11/1/16 and 6/30/17. The percentage is based on the development pattern selected in Appendix A.  
 (E) ((A) - (B)) x (D).  
 (F) (A) - (B) - (E).

This exhibit shows the calculation of the amount of incurred but not reported losses we expect as of 6/30/17. This amount is dependent on both the strength of the case reserves and the average frequency and severity of the losses incurred.

Workers' Compensation - Workers' Compensation

Estimated Ultimate Program Losses

Accident Year	Reported Loss Development Method (A)	Paid Loss Development Method (B)	Exposure Method Based on Reported Losses (C)	Exposure Method Based on Paid Losses (D)	Frequency-Severity Method (E)	Selected Estimate of Ultimate Losses (F)
Prior	\$21,152,355	\$21,079,845			\$21,253,376	\$21,153,000
1996-1997	2,663,914	2,742,233	2,663,420	2,735,450	2,580,688	2,664,000
1997-1998	3,602,374	3,710,043	3,597,571	3,673,390	3,036,132	3,602,000
1998-1999	3,339,631	3,524,433	3,335,199	3,487,596	2,930,400	3,300,031
1999-2000	3,066,281	3,048,339	3,072,704	3,073,971	3,418,254	3,066,000
2000-2001	4,203,850	4,047,819	4,190,954	4,004,189	3,503,434	4,204,000
2001-2002	2,478,225	2,503,741	2,481,490	2,514,475	2,632,307	2,478,000
2002-2003	3,870,952	3,948,655	3,879,853	3,967,166	4,111,380	3,871,000
2003-2004	3,399,540	3,550,278	3,406,524	3,551,650	3,565,755	3,400,000
2004-2005	2,860,962	2,797,248	2,842,188	2,759,122	2,508,506	2,861,000
2005-2006	3,307,140	3,254,686	3,295,049	3,231,473	3,107,463	3,307,000
2006-2007	3,829,421	3,978,118	3,823,888	3,943,558	3,758,172	3,829,000
2007-2008	4,588,051	4,711,552	4,583,451	4,676,826	4,513,564	4,588,000
2008-2009	5,520,938	5,626,343	5,409,014	5,378,628	4,443,468	5,521,000
2009-2010	7,691,444	7,915,651	7,534,987	7,553,653	6,413,120	7,691,000
2010-2011	6,647,049	6,828,570	6,543,414	6,575,736	5,928,180	6,595,000
2011-2012	6,311,396	6,725,682	6,381,746	6,730,789	6,144,164	6,347,000
2012-2013	7,074,179	7,352,525	6,972,917	7,056,897	6,482,952	7,015,000
2013-2014	8,258,944	7,157,360	7,859,683	6,919,352	6,482,945	7,390,000
2014-2015	7,241,509	6,425,858	7,218,570	6,883,665	7,155,521	7,051,000
2015-2016	6,836,241	5,479,068	7,283,810	7,216,783	7,701,120	7,371,000
Totals						\$117,304,031
						Projected Losses for the Year 2016-2017 (G)
						\$8,147,000
						Projected Losses for the Year 2017-2018 (H)
						\$8,338,000

Notes:

- (A) From Appendix A, Page 1, Column (G).
- (B) From Appendix B, Page 1, Column (G).
- (C) From Appendix C, Page 1, Column (G).
- (D) From Appendix C, Page 2, Column (G).
- (E) From Appendix D, Page 1, Column (C).
- (F) Selected averages of (A), (B), (C), (D), and (E).
- (G) From Exhibit 5, Page 1, Line (K).
- (H) From Exhibit 5, Page 1, Line (K).

This exhibit summarizes the results of the actuarial methods we have applied to estimate ultimate losses for each year. It is important to apply a number of estimation methods because each one relies on specific assumptions about the claims process that tend to hold generally true, but that may be violated in specific situations. Thus, the more estimation methods that can be applied, the better.

Workers' Compensation - Workers' Compensation

Estimated Ultimate Limited Losses Capped at \$100,000 per Claim

Accident Year	Reported Loss Development Method (A)	Paid Loss Development Method (B)	Exposure Method Based on Reported Losses (C)	Exposure Method Based on Paid Losses (D)	Frequency-Severity Method (E)	Selected Ultimate Limited Losses (F)
Prior	\$18,482,112	\$18,435,483			\$18,482,380	\$18,482,000
1996-1997	2,173,573	2,161,779	2,173,691	2,162,462	2,175,112	2,175,000
1997-1998	2,543,920	2,540,850	2,544,080	2,541,804	2,543,904	2,544,000
1998-1999	2,463,891	2,498,078	2,463,890	2,495,634	2,441,880	2,441,914
1999-2000	2,832,362	2,808,651	2,832,646	2,808,461	2,831,976	2,832,000
2000-2001	2,885,583	2,870,756	2,885,992	2,871,001	2,885,883	2,886,000
2001-2002	2,155,251	2,140,079	2,155,656	2,141,119	2,155,115	2,155,000
2002-2003	3,296,723	3,233,571	3,297,662	3,234,792	3,297,000	3,297,000
2003-2004	2,775,616	2,768,164	2,776,731	2,768,615	2,775,963	2,776,000
2004-2005	1,937,965	1,883,694	1,937,006	1,885,492	1,937,854	1,938,000
2005-2006	2,382,118	2,386,317	2,381,302	2,386,760	2,381,978	2,382,000
2006-2007	2,858,140	2,931,271	2,857,611	2,926,973	2,857,927	2,858,000
2007-2008	3,405,010	3,432,930	3,405,225	3,432,278	3,405,028	3,405,000
2008-2009	3,325,651	3,256,866	3,326,701	3,261,650	3,325,970	3,326,000
2009-2010	4,762,908	4,616,077	4,762,188	4,627,912	4,762,805	4,763,000
2010-2011	4,366,092	4,200,065	4,368,146	4,217,855	4,367,052	4,367,000
2011-2012	4,565,487	4,441,991	4,588,031	4,513,004	4,489,654	4,577,000
2012-2013	4,704,713	4,680,770	4,707,716	4,696,545	4,699,422	4,702,000
2013-2014	5,144,324	4,494,639	5,113,422	4,581,585	4,662,259	4,848,000
2014-2015	4,808,884	4,311,435	4,869,547	4,690,102	5,103,865	4,780,000
2015-2016	4,339,443	3,930,635	4,793,702	5,005,960	5,448,240	4,900,000
Totals						\$86,434,914
						Projected Losses for the Year 2016-2017 (G)
						\$5,717,000
						Projected Losses for the Year 2017-2018 (H)
						\$5,802,000

Notes:

- (A) From Appendix A, Page 1, Column (D).
- (B) From Appendix B, Page 1, Column (D).
- (C) Based on results in Appendix C, Page 1.
- (D) Based on results in Appendix C, Page 2.
- (E) Based on results in Appendix D, Page 1.
- (F) Selected averages of (A), (B), (C), (D), and (E).
- (G) From Exhibit 5, Page 1, Line (K) / Line (G).
- (H) From Exhibit 5, Page 1, Line (K) / Line (G).

This exhibit summarizes the results of the actuarial methods we have applied to estimate limited losses for each year. These results are used to select a limited loss rate for future years.



Workers' Compensation - Workers' Compensation

Selection of Projected Limited Loss Rate  
and Projection of Program Losses and ULAE

Accident Year	Ultimate Limited Losses (A)	Trend Factor (B)	Trended Limited Losses (C)	Trended Payroll (\$00) (D)	Trended Limited Loss Rate (E)
1996-1997	2,175,000	1.491	3,242,925	1,172,677	2.765
1997-1998	2,544,000	1.284	3,266,496	1,307,148	2.499
1998-1999	2,441,914	1.139	2,781,340	1,343,125	2.071
1999-2000	2,832,000	1.016	2,877,312	1,383,821	2.079
2000-2001	2,886,000	0.949	2,738,814	1,499,701	1.826
2001-2002	2,155,000	0.945	2,036,475	1,569,154	1.298
2002-2003	3,297,000	0.992	3,270,624	1,935,895	1.689
2003-2004	2,776,000	1.243	3,450,568	2,225,135	1.551
2004-2005	1,938,000	1.589	3,079,482	2,281,377	1.350
2005-2006	2,382,000	1.677	3,994,614	2,600,434	1.536
2006-2007	2,858,000	1.575	4,501,350	2,737,430	1.644
2007-2008	3,405,000	1.449	4,933,845	2,979,844	1.656
2008-2009	3,326,000	1.335	4,440,210	3,033,978	1.463
2009-2010	4,763,000	1.205	5,739,415	2,982,017	1.925
2010-2011	4,367,000	1.148	5,013,316	2,768,364	1.811
2011-2012	4,577,000	1.141	5,222,357	2,621,952	1.992
2012-2013	4,702,000	1.126	5,294,452	2,504,519	2.114
2013-2014	4,848,000	1.114	5,400,672	2,486,255	2.172
2014-2015	4,780,000	1.063	5,081,140	2,536,535	2.003
2015-2016	4,900,000	1.012	4,958,800	2,545,585	1.948
Totals	\$67,952,914		\$81,324,207	44,514,946	\$1.827
12/13-14/15	14,330,000		15,776,264	7,527,309	2.096
13/14-15/16	14,528,000		15,440,612	7,568,375	2.040
				(F) Selected Limited Rate:	\$2.100
				Prior:	\$2.220
Program Year:		2016-2017	2017-2018		
(G) Factor to SIR:		1.425	1.437		
(H) Trend Factor:		1.000	1.005		
(I) Program Rate:		\$2.993	\$3.033		
(J) Trended Payroll (\$00):		2,721,887	2,749,106		
(K) Projected Program Losses:		8,147,000	8,338,000		
(L) Projected ULAE:		0	0		
(M) Projected Loss and ULAE:		\$8,147,000	\$8,338,000		

Notes appear on the next page.

Workers' Compensation - Workers' Compensation

Selection of Projected Limited Loss Rate  
and Projection of Program Losses and ULAE

Notes:

- (A) From Exhibit 4, Page 2, Column (F).  
For purposes of projecting future losses, losses are capped at \$100,000 per occurrence.
- (B) From Appendix E, Page 1, Column (B).
- (C)  $(A) \times (B)$ .
- (D) From Appendix M, Column (C).
- (E)  $(C) / (D)$ .
- (F) Selected based on (E).
- (G) Based on a Weibull distribution, a mathematical model of claim sizes.
- (H) From Appendix E.
  - (I)  $(F) \times (G) \times (H)$ .
- (J) From Appendix M, Column (C).
- (K)  $(I) \times (J)$ .
- (L) Based on an estimated claim closing pattern and the Authority's historical claims administration expenses.
- (M)  $(K) + (L)$ .

This exhibit shows the calculation of future loss costs based on the past loss rates per \$100 of payroll. The projections will be accurate only to the extent that what has happened in the past is representative of what will happen in the future.

Workers' Compensation - Workers' Compensation

Reported Loss Development

Accident Year (A)	Limited Reported Losses as of 10/31/16 (B)	Reported Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Reported Losses of 10/31/16 (E)	Reported Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$18,371,881	1.006	\$18,482,112	\$21,005,318	1.007	\$21,152,355
1996-1997	2,158,464	1.007	2,173,573	2,642,772	1.008	2,663,914
1997-1998	2,523,730	1.008	2,543,920	3,570,242	1.009	3,602,374
1998-1999	2,441,914	1.009	2,463,891	3,300,031	1.012	3,339,631
1999-2000	2,804,319	1.010	2,832,362	3,017,993	1.016	3,066,281
2000-2001	2,851,367	1.012	2,885,583	4,117,385	1.021	4,203,850
2001-2002	2,125,494	1.014	2,155,251	2,413,072	1.027	2,478,225
2002-2003	3,241,616	1.017	3,296,723	3,740,050	1.035	3,870,952
2003-2004	2,721,192	1.020	2,775,616	3,253,148	1.045	3,399,540
2004-2005	1,894,394	1.023	1,937,965	2,711,812	1.055	2,860,962
2005-2006	2,321,752	1.026	2,382,118	3,102,383	1.066	3,307,140
2006-2007	2,777,590	1.029	2,858,140	3,545,760	1.080	3,829,421
2007-2008	3,296,234	1.033	3,405,010	4,186,178	1.096	4,588,051
2008-2009	3,206,992	1.037	3,325,651	4,951,514	1.115	5,520,938
2009-2010	4,562,172	1.044	4,762,908	6,752,804	1.139	7,691,444
2010-2011	4,154,226	1.051	4,366,092	5,695,843	1.167	6,647,049
2011-2012	4,307,063	1.060	4,565,487	5,255,117	1.201	6,311,396
2012-2013	4,392,823	1.071	4,704,713	5,636,796	1.255	7,074,179
2013-2014	4,706,609	1.093	5,144,324	6,195,757	1.333	8,258,944
2014-2015	3,896,989	1.234	4,808,884	4,606,558	1.572	7,241,509
2015-2016	2,483,940	1.747	4,339,443	2,950,471	2.317	6,836,241
Totals	\$81,240,761		\$86,209,766	\$102,651,004		\$117,944,396

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the Authority. These losses exclude amounts over \$100,000 per occurrence.
- (C) From Appendix A, Page 2. Interpolated to apply to data as of 10/31/16.
- (D) (B) x (C). These estimated losses exclude amounts over \$100,000 per occurrence.
- (E) Losses capped at the Authority's SIR. Amounts are provided by the Authority.
- (F) Derived from factors on Appendix A, Page 4. Interpolated to apply to data as of 10/31/16.
- (G) (E) x (F).

This method tends to understate ultimate losses for the most recent several years because the large losses for those years generally have not yet emerged at the time of our review.

This exhibit shows the calculation of estimated ultimate losses for each year based on paid losses and case reserves as reported by the claims administrator. These losses tend to "develop" or change from period to period as more information becomes available about the cases. This development tends to follow quantifiable patterns over time.

Workers' Compensation - Workers' Compensation  
Reported Loss Development

Limited Losses Reported as of:

Accident Year	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										2,454,924
1999-2000									2,807,235	2,796,748
2000-2001								2,834,245	2,851,596	2,857,112
2001-2002							2,002,601	2,045,092	2,078,430	2,115,748
2002-2003						3,160,437	3,154,260	3,209,401	3,202,327	3,150,556
2003-2004					2,945,843	2,692,469	2,684,882	2,753,964	2,720,302	2,651,431
2004-2005				1,976,585	1,910,393	1,843,979	1,750,054	1,761,283	1,802,251	1,839,217
2005-2006			2,043,150	2,174,093	2,262,406	2,227,441	2,230,934	2,308,899	2,296,594	2,328,157
2006-2007		2,524,993	2,688,367	2,883,249	2,785,074	2,758,279	2,747,976	2,761,899	2,794,703	2,770,653
2007-2008	2,034,796	2,746,313	3,106,006	3,241,862	3,265,883	3,323,736	3,337,507	3,300,815	3,229,036	
2008-2009	1,815,954	2,547,313	3,047,449	3,163,903	3,206,832	3,249,286	3,317,905	3,191,992		
2009-2010	2,602,432	4,053,760	4,429,533	4,477,022	4,494,974	4,609,502	4,553,153			
2010-2011	2,177,724	3,372,980	4,085,603	4,032,840	4,121,809	4,146,894				
2011-2012	2,237,306	3,866,321	4,575,307	4,563,313	4,364,372					
2012-2013	2,524,608	3,910,912	4,509,109	4,473,393						
2013-2014	2,243,390	3,662,902	4,672,697							
2014-2015	2,324,025	3,623,639								
2015-2016	2,305,550									

Reported Loss Development Factors:

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										1.001
1999-2000									0.996	0.984
2000-2001								1.006	1.002	0.992
2001-2002							1.021	1.016	1.018	0.980
2002-2003						0.998	1.017	0.998	0.984	0.999
2003-2004					0.914	0.997	1.026	0.988	0.975	1.024
2004-2005				0.967	0.965	0.949	1.006	1.023	1.021	1.029
2005-2006			1.064	1.041	0.985	1.002	1.035	0.995	1.014	0.997
2006-2007		1.065	1.072	0.966	0.990	0.996	1.005	1.012	0.991	
2007-2008	1.350	1.131	1.044	1.007	1.018	1.004	0.989	0.978		
2008-2009	1.403	1.196	1.038	1.014	1.013	1.021	0.962			
2009-2010	1.558	1.093	1.011	1.004	1.025	0.988				
2010-2011	1.549	1.211	0.987	1.022	1.006					
2011-2012	1.728	1.183	0.997	0.956						
2012-2013	1.549	1.153	0.992							
2013-2014	1.633	1.276								
2014-2015	1.559									

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
Average	1.541	1.164	1.026	0.997	0.990	0.994	1.008	1.002	1.000	1.001
Dollar-weighted										
Averages										
3-yr	1.579	1.203	0.992	0.993	1.015	1.002	0.984	0.994	1.006	1.016
4-yr	1.615	1.205	0.997	0.997	1.016	1.001	0.994	0.999	0.997	1.011
CSAC										
Factors	1.470	1.120	1.025	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Prior	1.600	1.159	1.025	1.015	1.009	1.008	1.007	1.005	1.004	1.003
Selected	1.597	1.190	1.025	1.011	1.009	1.008	1.007	1.005	1.004	1.003
Cumulated	2.095	1.312	1.102	1.075	1.063	1.054	1.046	1.039	1.034	1.030

Workers' Compensation - Workers' Compensation  
Reported Loss Development

Limited Losses Reported as of:

Accident Year	132 Months	144 Months	156 Months	168 Months	180 Months	192 Months	204 Months	216 Months	228 Months	240 Months	252 Months
1995-1996			1,221,980	1,227,521	1,261,873	1,299,000	1,308,297	1,304,461	1,299,126	1,299,126	1,284,638
1996-1997		2,106,209	2,099,296	2,129,480	2,139,480	2,147,015	2,163,400	2,163,400	2,159,400	2,158,464	
1997-1998	2,450,854	2,444,420	2,461,228	2,462,126	2,462,126	2,464,511	2,470,811	2,509,792	2,523,254		
1998-1999	2,458,535	2,463,094	2,457,606	2,465,343	2,482,593	2,479,593	2,444,281	2,441,914			
1999-2000	2,751,231	2,735,208	2,742,099	2,786,722	2,812,481	2,802,460	2,808,659				
2000-2001	2,835,624	2,863,397	2,845,041	2,843,750	2,858,324	2,851,367					
2001-2002	2,073,809	2,095,122	2,100,381	2,100,930	2,087,693						
2002-2003	3,148,384	3,166,634	3,236,611	3,236,611							
2003-2004	2,714,758	2,731,291	2,721,192								
2004-2005	1,892,804	1,894,394									
2005-2006	2,322,143										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											

	132-144 Months	144-156 Months	156-168 Months	168-180 Months	180-192 Months	192-204 Months	204-216 Months	216-228 Months	228-240 Months	240-252 Months	252-Ult. Months
1995-1996			1.005	1.028	1.029	1.007	0.997	0.996	1.000	0.989	
1996-1997		0.997	1.014	1.005	1.004	1.008	1.000	0.998	1.000		
1997-1998	0.997	1.007	1.000	1.000	1.001	1.003	1.016	1.005			
1998-1999	1.002	0.998	1.003	1.007	0.999	0.986	0.999				
1999-2000	0.994	1.003	1.016	1.009	0.996	1.002					
2000-2001	1.010	0.994	1.000	1.005	0.998						
2001-2002	1.010	1.003	1.000	0.994							
2002-2003	1.006	1.022	1.000								
2003-2004	1.006	0.996									
2004-2005	1.001										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											

	132-144 Months	144-156 Months	156-168 Months	168-180 Months	180-192 Months	192-204 Months	204-216 Months	216-228 Months	228-240 Months	240-252 Months	252-Ult. Months
Average Dollar-weighted Averages	1.003	1.003	1.005	1.007	1.005	1.001	1.003	1.000	1.000	0.989	
3-yr	1.005	1.008	1.000	1.004	0.998	0.997	1.005	1.001			
4-yr	1.006	1.004	1.004	1.004	0.998	0.999	1.004				
CSAC Factors	1.005	1.005	1.004	1.003	1.003	1.003	1.003	1.002	1.002	1.002	1.006
Prior	1.003	1.003	1.003	1.003	1.002	1.002	1.002	1.001	1.001	1.001	1.006
Selected	1.003	1.003	1.003	1.003	1.002	1.002	1.002	1.001	1.001	1.001	1.006
Cumulated	1.027	1.024	1.021	1.018	1.015	1.013	1.011	1.009	1.008	1.007	1.006

Workers' Compensation - Workers' Compensation  
Reported between \$100,000 and \$500,000 Loss Development

Accident Year	<u>Losses Reported as of:</u>									
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										1,308,116
1999-2000									294,529	294,529
2000-2001								927,263	1,063,094	1,159,090
2001-2002							145,487	145,487	181,082	206,919
2002-2003						594,472	593,028	606,306	580,772	572,235
2003-2004					537,905	514,076	514,076	514,076	514,076	514,076
2004-2005				548,030	581,213	594,237	616,170	614,962	624,736	624,736
2005-2006			59,389	188,429	299,321	364,382	365,895	408,542	541,776	645,776
2006-2007		435,789	633,325	705,295	744,206	754,206	723,665	709,561	728,304	741,540
2007-2008	25,388	67,351	163,151	539,368	597,054	956,707	1,021,285	981,412	879,038	
2008-2009	827,313	1,095,576	1,158,127	1,400,442	1,558,114	1,662,530	1,734,469	1,735,902		
2009-2010	109,738	958,571	1,846,507	2,104,489	2,106,983	2,027,198	2,153,320			
2010-2011	26,296	147,111	710,579	882,450	984,740	1,517,245				
2011-2012	12,432	301,624	693,432	901,461	978,919					
2012-2013	23,515	555,651	1,179,714	1,402,266						
2013-2014	410,909	740,759	1,445,494							
2014-2015	11,126	500,392								
2015-2016	465,565									

Reported Loss Development Factors:

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										1.000
1999-2000									1.000	0.975
2000-2001								1.146	1.090	1.108
2001-2002							1.000	1.245	1.143	0.914
2002-2003						0.998	1.022	0.958	0.985	0.865
2003-2004					0.956	1.000	1.000	1.000	1.000	1.000
2004-2005				1.061	1.022	1.037	0.998	1.016	1.000	1.107
2005-2006			3.173	1.589	1.217	1.004	1.117	1.326	1.192	1.193
2006-2007		1.453	1.114	1.055	1.013	0.960	0.981	1.026	1.018	
2007-2008	2.653	2.422	3.306	1.107	1.602	1.068	0.961	0.896		
2008-2009	1.324	1.057	1.209	1.113	1.067	1.043	1.001			
2009-2010	8.735	1.926	1.140	1.001	0.962	1.062				
2010-2011	5.595	4.830	1.242	1.116	1.541					
2011-2012	24.263	2.299	1.300	1.086						
2012-2013	23.630	2.123	1.189							
2013-2014	1.803	1.951								
2014-2015	44.975									

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
Average Dollar-weighted Averages	14.122	2.258	1.709	1.141	1.173	1.022	1.010	1.077	1.054	1.020
3-yr	4.033	2.077	1.233	1.047	1.120	1.057	0.985	1.024	1.062	1.107
4-yr	4.582	2.309	1.194	1.064	1.175	1.043	0.997	1.022	1.049	1.049
CSAC Factors	2.750	1.900	1.380	1.270	1.130	1.100	1.080	1.070	1.055	1.050
Prior	2.750	1.900	1.380	1.270	1.130	1.100	1.080	1.070	1.055	1.050
Selected	2.750	1.900	1.380	1.270	1.130	1.100	1.080	1.070	1.055	1.050
Cumulated	18.101	6.582	3.464	2.510	1.976	1.749	1.590	1.472	1.376	1.304

Workers' Compensation - Workers' Compensation  
Reported between \$100,000 and \$500,000 Loss Development

Accident Year	Losses Reported as of:										
	132 Months	144 Months	156 Months	168 Months	180 Months	192 Months	204 Months	216 Months	228 Months	240 Months	252 Months
1995-1996			238,780	244,710	244,710	244,710	244,710	246,401	280,183	287,183	376,121
1996-1997		486,762	486,762	523,587	524,505	533,206	536,035	644,690	633,076	622,694	
1997-1998	1,177,049	1,141,144	1,240,603	1,197,250	1,184,321	1,339,391	1,358,442	1,346,512	1,346,512		
1998-1999	1,308,116	1,308,116	1,308,116	1,308,116	1,308,116	1,308,116	1,308,117	1,308,116			
1999-2000	287,171	287,171	287,171	287,171	291,174	213,674	213,674				
2000-2001	1,284,376	1,284,376	1,401,238	1,512,460	1,512,460	1,620,209					
2001-2002	189,161	195,282	195,282	287,579	287,579						
2002-2003	495,136	495,136	495,136	498,434							
2003-2004	514,076	523,685	531,955								
2004-2005	691,610	699,021									
2005-2006	770,723										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
	132-144 Months	144-156 Months	156-168 Months	168-180 Months	180-192 Months	192-204 Months	204-216 Months	216-228 Months	228-240 Months	240-252 Months	252-Ult. Months
1995-1996			1.025	1.000	1.000	1.000	1.007	1.137	1.025	1.310	
1996-1997		1.000	1.076	1.002	1.017	1.005	1.203	0.982	0.984		
1997-1998	0.969	1.087	0.965	0.989	1.131	1.014	0.991	1.000			
1998-1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1999-2000	1.000	1.000	1.000	1.014	0.734	1.000					
2000-2001	1.000	1.091	1.079	1.000	1.071						
2001-2002	1.032	1.000	1.473	1.000							
2002-2003	1.000	1.000	1.007								
2003-2004	1.019	1.016									
2004-2005	1.011										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
	132-144 Months	144-156 Months	156-168 Months	168-180 Months	180-192 Months	192-204 Months	204-216 Months	216-228 Months	228-240 Months	240-252 Months	252-Ult. Months
Average Dollar-weighted Averages	1.004	1.024	1.078	1.001	0.992	1.004	1.050	1.040	1.005	1.310	
3-yr	1.010	1.007	1.099	1.002	1.010	1.007	1.030	1.010			
4-yr	1.012	1.050	1.087	1.001	1.043	1.006	1.029				
CSAC Factors	1.040	1.029	1.030	1.026	1.024	1.020	1.015	1.011	1.008	1.005	1.010
Prior	1.040	1.029	1.030	1.026	1.024	1.020	1.015	1.011	1.008	1.005	1.010
Selected	1.040	1.030	1.030	1.025	1.025	1.020	1.015	1.011	1.008	1.005	1.010
Cumulated	1.242	1.194	1.159	1.125	1.098	1.071	1.050	1.034	1.023	1.015	1.010

Workers' Compensation - Workers' Compensation

Paid Loss Development

Accident Year (A)	Limited Paid Losses as of 10/31/16 (B)	Paid Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Paid Losses of 10/31/16 (E)	Paid Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$18,216,880	1.012	\$18,435,483	\$20,327,719	1.037	\$21,079,845
1996-1997	2,129,832	1.015	2,161,779	2,614,140	1.049	2,742,233
1997-1998	2,493,474	1.019	2,540,850	3,503,346	1.059	3,710,043
1998-1999	2,441,914	1.023	2,498,078	3,300,031	1.068	3,524,433
1999-2000	2,734,811	1.027	2,808,651	2,827,773	1.078	3,048,339
2000-2001	2,784,438	1.031	2,870,756	3,720,422	1.088	4,047,819
2001-2002	2,065,713	1.036	2,140,079	2,280,274	1.098	2,503,741
2002-2003	3,106,216	1.041	3,233,571	3,547,758	1.113	3,948,655
2003-2004	2,646,428	1.046	2,768,164	3,130,757	1.134	3,550,278
2004-2005	1,790,584	1.052	1,883,694	2,428,167	1.152	2,797,248
2005-2006	2,253,368	1.059	2,386,317	2,774,668	1.173	3,254,686
2006-2007	2,749,785	1.066	2,931,271	3,323,407	1.197	3,978,118
2007-2008	3,190,455	1.076	3,432,930	3,846,165	1.225	4,711,552
2008-2009	2,998,956	1.086	3,256,866	4,454,745	1.263	5,626,343
2009-2010	4,185,020	1.103	4,616,077	6,014,932	1.316	7,915,651
2010-2011	3,720,164	1.129	4,200,065	4,933,938	1.384	6,828,570
2011-2012	3,793,331	1.171	4,441,991	4,538,247	1.482	6,725,682
2012-2013	3,756,637	1.246	4,680,770	4,516,293	1.628	7,352,525
2013-2014	3,169,703	1.418	4,494,639	3,751,237	1.908	7,157,360
2014-2015	2,294,537	1.879	4,311,435	2,484,864	2.586	6,425,858
2015-2016	1,044,826	3.762	3,930,635	1,044,826	5.244	5,479,068
Totals	\$73,567,072		\$84,024,101	\$89,363,709		\$116,408,047

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the Authority. These losses exclude amounts over \$100,000 per occurrence.
- (C) From Appendix B, Page 2. Interpolated to apply to data as of 10/31/16.
- (D) (B) x (C). These estimated losses exclude amounts over \$100,000 per occurrence.
- (E) Losses capped at the Authority's SIR. Amounts are provided by the Authority.
- (F) Derived from factors on Appendix B, Page 4. Interpolated to apply to data as of 10/31/16.
- (G) (E) x (F).

This method tends to understate ultimate losses for the most recent several years because the large losses for those years generally have not yet emerged at the time of our review.

This exhibit shows the calculation of estimated ultimate losses for each year based on paid losses as reported by the claims administrator. These losses tend to "develop" or change from period to period as more information becomes available about the cases. This development tends to follow quantifiable patterns over time.



Workers' Compensation - Workers' Compensation  
Paid Loss Development

Accident Year	Limited Losses Paid as of:									
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										2,375,676
1999-2000									2,537,628	2,559,571
2000-2001								2,667,919	2,700,731	2,730,248
2001-2002							1,870,263	1,897,477	1,931,289	1,972,137
2002-2003						2,871,087	2,931,497	3,002,705	3,023,192	3,054,369
2003-2004					2,326,110	2,371,968	2,421,783	2,527,567	2,540,161	2,553,320
2004-2005				1,511,599	1,543,162	1,595,159	1,655,814	1,677,073	1,695,912	1,717,531
2005-2006			1,373,909	1,736,683	1,902,352	2,017,147	2,087,363	2,125,077	2,205,025	2,222,784
2006-2007		1,487,074	2,093,465	2,347,655	2,422,118	2,525,706	2,567,027	2,599,702	2,739,799	2,749,494
2007-2008	557,256	1,538,605	2,152,678	2,658,493	2,874,957	2,992,702	3,061,396	3,114,479	3,130,046	
2008-2009	636,147	1,616,151	2,150,566	2,520,268	2,750,461	2,855,577	2,958,789	2,993,410		
2009-2010	733,213	2,021,035	2,929,847	3,429,600	3,722,672	3,939,986	4,144,551			
2010-2011	717,578	1,851,382	2,847,009	3,258,339	3,446,942	3,666,267				
2011-2012	792,545	2,113,114	3,082,130	3,582,660	3,768,252					
2012-2013	805,718	2,348,117	3,123,194	3,685,449						
2013-2014	679,124	2,064,510	3,020,560							
2014-2015	793,301	1,960,348								
2015-2016	700,558									

Paid Loss Development Factors:

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										1.003
1999-2000									1.009	1.008
2000-2001								1.012	1.011	1.002
2001-2002							1.015	1.018	1.021	1.007
2002-2003						1.021	1.024	1.007	1.010	1.009
2003-2004					1.020	1.021	1.044	1.005	1.005	1.007
2004-2005				1.021	1.034	1.038	1.013	1.011	1.013	1.021
2005-2006			1.264	1.095	1.060	1.035	1.018	1.038	1.008	1.014
2006-2007		1.408	1.121	1.032	1.043	1.016	1.013	1.054	1.004	
2007-2008	2.761	1.399	1.235	1.081	1.041	1.023	1.017	1.005		
2008-2009	2.541	1.331	1.172	1.091	1.038	1.036	1.012			
2009-2010	2.756	1.450	1.171	1.085	1.058	1.052				
2010-2011	2.580	1.538	1.144	1.058	1.064					
2011-2012	2.666	1.459	1.162	1.052						
2012-2013	2.914	1.330	1.180							
2013-2014	3.040	1.463								
2014-2015	2.471									

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
Average	2.716	1.422	1.181	1.064	1.045	1.030	1.020	1.019	1.010	1.009
Dollar-weighted										
Averages										
3-yr	2.797	1.414	1.163	1.065	1.055	1.038	1.014	1.030	1.007	1.013
4-yr	2.764	1.441	1.165	1.070	1.052	1.034	1.015	1.027	1.007	1.012
CSAC										
Factors	2.500	1.400	1.170	1.090	1.050	1.033	1.020	1.015	1.012	1.010
Prior	2.800	1.435	1.175	1.075	1.045	1.025	1.018	1.010	1.009	1.008
Selected	2.799	1.432	1.176	1.073	1.045	1.025	1.018	1.010	1.009	1.008
Cumulated	6.019	2.150	1.501	1.276	1.189	1.138	1.110	1.090	1.079	1.069

Workers' Compensation - Workers' Compensation  
Paid Loss Development

Limited Losses Paid as of:

Accident Year	132 Months	144 Months	156 Months	168 Months	180 Months	192 Months	204 Months	216 Months	228 Months	240 Months	252 Months
1995-1996			1,189,663	1,195,378	1,210,133	1,240,054	1,269,538	1,274,662	1,275,273	1,276,377	1,276,418
1996-1997		2,089,797	2,090,027	2,101,153	2,111,141	2,113,709	2,121,936	2,122,005	2,128,724	2,129,695	
1997-1998	2,420,792	2,425,180	2,426,366	2,429,302	2,431,642	2,433,077	2,441,231	2,479,972	2,488,975		
1998-1999	2,383,097	2,387,469	2,399,594	2,415,518	2,419,456	2,424,748	2,441,914	2,441,914			
1999-2000	2,579,395	2,590,556	2,601,211	2,708,089	2,719,352	2,729,656	2,731,572				
2000-2001	2,735,479	2,769,470	2,771,681	2,777,286	2,782,711	2,783,907					
2001-2002	1,986,754	2,013,602	2,035,187	2,040,694	2,065,439						
2002-2003	3,082,679	3,091,063	3,104,747	3,105,822							
2003-2004	2,570,920	2,638,576	2,645,119								
2004-2005	1,752,928	1,789,302									
2005-2006	2,253,154										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											

	132-144 Months	144-156 Months	156-168 Months	168-180 Months	180-192 Months	192-204 Months	204-216 Months	216-228 Months	228-240 Months	240-252 Months	252-Ult. Months
1995-1996			1.005	1.012	1.025	1.024	1.004	1.000	1.001	1.000	
1996-1997		1.000	1.005	1.005	1.001	1.004	1.000	1.003	1.000		
1997-1998	1.002	1.000	1.001	1.001	1.001	1.003	1.016	1.004			
1998-1999	1.002	1.005	1.007	1.002	1.002	1.007	1.000				
1999-2000	1.004	1.004	1.041	1.004	1.004	1.001					
2000-2001	1.012	1.001	1.002	1.002	1.000						
2001-2002	1.014	1.011	1.003	1.012							
2002-2003	1.003	1.004	1.000								
2003-2004	1.026	1.002									
2004-2005	1.021										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											

	132-144 Months	144-156 Months	156-168 Months	168-180 Months	180-192 Months	192-204 Months	204-216 Months	216-228 Months	228-240 Months	240-252 Months	252-Ult. Months
Average Dollar-weighted Averages	1.011	1.003	1.008	1.005	1.006	1.008	1.005	1.002	1.001	1.000	
3-yr	1.015	1.005	1.002	1.006	1.002	1.004	1.006	1.003			
4-yr	1.015	1.004	1.011	1.005	1.002	1.004	1.005				
CSAC Factors	1.009	1.008	1.007	1.006	1.005	1.005	1.004	1.004	1.004	1.004	1.013
Prior	1.007	1.006	1.005	1.005	1.005	1.005	1.004	1.004	1.004	1.003	1.013
Selected	1.007	1.006	1.005	1.005	1.005	1.005	1.004	1.004	1.004	1.003	1.013
Cumulated	1.061	1.054	1.048	1.043	1.038	1.033	1.028	1.024	1.020	1.016	1.013

Workers' Compensation - Workers' Compensation  
Paid between \$100,000 and \$500,000 Loss Development

Accident Year	<u>Losses Paid as of:</u>									
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										1,253,666
1999-2000									51,255	51,260
2000-2001								556,971	583,624	624,634
2001-2002							106,032	111,773	111,773	157,312
2002-2003						299,906	336,089	404,371	413,487	413,879
2003-2004					474,556	474,720	474,720	474,720	474,720	474,720
2004-2005				172,230	250,899	353,762	427,370	504,834	567,539	618,711
2005-2006			12,940	25,496	103,391	178,873	258,411	270,684	358,310	385,252
2006-2007		117,649	262,264	407,427	454,961	480,459	505,912	514,460	549,294	562,448
2007-2008			20,350	231,443	308,624	480,323	559,482	599,628	632,284	
2008-2009		409,752	520,694	775,648	967,526	1,124,067	1,363,726	1,432,732		
2009-2010		75,514	783,857	1,175,394	1,572,595	1,653,273	1,786,930			
2010-2011			131,557	277,293	431,600	796,249				
2011-2012		18,227	242,003	492,976	734,362					
2012-2013		61,835	208,508	747,704						
2013-2014		349,619	551,822							
2014-2015		116,525								
2015-2016										

Paid Loss Development Factors:

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
1995-1996										
1996-1997										
1997-1998										
1998-1999										1.000
1999-2000									1.000	1.001
2000-2001								1.048	1.070	1.108
2001-2002							1.054	1.000	1.407	1.093
2002-2003						1.121	1.203	1.023	1.001	1.017
2003-2004					1.000	1.000	1.000	1.000	1.000	1.000
2004-2005				1.457	1.410	1.208	1.181	1.124	1.090	1.012
2005-2006			1.970	4.055	1.730	1.445	1.047	1.324	1.075	1.318
2006-2007		2.229	1.553	1.117	1.056	1.053	1.017	1.068	1.024	
2007-2008			11.373	1.333	1.556	1.165	1.072	1.054		
2008-2009		1.271	1.490	1.247	1.162	1.213	1.051			
2009-2010		10.380	1.500	1.338	1.051	1.081				
2010-2011			2.108	1.556	1.845					
2011-2012		13.277	2.037	1.490						
2012-2013		3.372	3.586							
2013-2014		1.578								
2014-2015										

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
Average Dollar-weighted Averages		5.351	3.202	1.699	1.351	1.161	1.078	1.080	1.083	1.069
3-yr		2.333	2.608	1.408	1.203	1.139	1.048	1.112	1.062	1.088
4-yr			1.972	1.362	1.236	1.128	1.048	1.115	1.047	1.072
CSAC Factors	4.000	3.100	2.400	1.750	1.500	1.300	1.250	1.175	1.100	1.080
Prior	4.000	3.100	2.400	1.750	1.500	1.300	1.250	1.175	1.100	1.080
Selected	4.000	3.100	2.400	1.750	1.500	1.300	1.250	1.175	1.100	1.080
Cumulated	331.020	82.755	26.695	11.123	6.356	4.237	3.259	2.607	2.219	2.017

Workers' Compensation - Workers' Compensation  
Paid between \$100,000 and \$500,000 Loss Development

Accident Year	Losses Paid as of:										
	132 Months	144 Months	156 Months	168 Months	180 Months	192 Months	204 Months	216 Months	228 Months	240 Months	252 Months
1995-1996			163,450	167,067	169,742	172,879	175,956	184,032	200,216	211,672	225,867
1996-1997		357,523	362,830	389,886	413,678	429,177	436,473	533,527	622,694	622,694	
1997-1998	1,035,811	1,055,973	1,061,755	1,068,013	1,137,157	1,145,059	1,160,609	1,179,047	1,204,693		
1998-1999	1,254,175	1,283,746	1,294,149	1,308,116	1,308,116	1,308,116	1,308,116	1,308,116			
1999-2000	51,312	51,312	51,312	58,525	68,548	79,372	90,911				
2000-2001	692,043	740,551	813,551	858,217	877,336	924,697					
2001-2002	172,006	184,612	185,887	199,550	214,453						
2002-2003	421,025	427,009	433,081	440,088							
2003-2004	474,720	484,329	484,329								
2004-2005	626,133	634,932									
2005-2006	507,599										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
	132-144 Months	144-156 Months	156-168 Months	168-180 Months	180-192 Months	192-204 Months	204-216 Months	216-228 Months	228-240 Months	240-252 Months	252-Ult. Months
1995-1996			1.022	1.016	1.018	1.018	1.046	1.088	1.057	1.067	
1996-1997		1.015	1.075	1.061	1.037	1.017	1.222	1.167	1.000		
1997-1998	1.019	1.005	1.006	1.065	1.007	1.014	1.016	1.022			
1998-1999	1.024	1.008	1.011	1.000	1.000	1.000	1.000				
1999-2000	1.000	1.000	1.141	1.171	1.158	1.145					
2000-2001	1.070	1.099	1.055	1.022	1.054						
2001-2002	1.073	1.007	1.074	1.075							
2002-2003	1.014	1.014	1.016								
2003-2004	1.020	1.000									
2004-2005	1.014										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
Average Dollar-weighted Averages	1.029	1.019	1.050	1.059	1.046	1.039	1.071	1.092	1.029	1.067	
3-yr	1.016	1.007	1.046	1.039	1.026	1.011	1.040	1.069			
4-yr	1.022	1.044	1.049	1.018	1.019	1.012	1.040				
CSAC Factors	1.070	1.055	1.045	1.035	1.035	1.030	1.030	1.030	1.030	1.030	1.275
Prior	1.070	1.055	1.045	1.035	1.035	1.030	1.030	1.030	1.030	1.030	1.275
Selected	1.070	1.055	1.045	1.035	1.035	1.030	1.030	1.030	1.030	1.030	1.275
Cumulated	1.868	1.746	1.655	1.584	1.530	1.478	1.435	1.393	1.352	1.313	1.275

Workers' Compensation - Workers' Compensation

Exposure and Development Method  
Based on Reported Losses

Accident Year	Trended Payroll (\$00) (A)	Reported Losses as of 10/31/16 (B)	Loss Development Factor (C)	Percentage of Losses Yet to Be Reported (D)	Program Rate (E)	Incurred but not Reported (IBNR) (F)	Ultimate Program Losses (G)
1996-1997	1,172,677	2,642,772	1.008	0.008	2.201	20,648	2,663,420
1997-1998	1,307,148	3,570,242	1.009	0.009	2.323	27,329	3,597,571
1998-1999	1,343,125	3,300,031	1.012	0.012	2.182	35,168	3,335,199
1999-2000	1,383,821	3,017,993	1.016	0.016	2.471	54,711	3,072,704
2000-2001	1,499,701	4,117,385	1.021	0.021	2.336	73,569	4,190,954
2001-2002	1,569,154	2,413,072	1.027	0.026	1.677	68,418	2,481,490
2002-2003	1,935,895	3,740,050	1.035	0.034	2.124	139,803	3,879,853
2003-2004	2,225,135	3,253,148	1.045	0.043	1.603	153,376	3,406,524
2004-2005	2,281,377	2,711,812	1.055	0.052	1.099	130,376	2,842,188
2005-2006	2,600,434	3,102,383	1.066	0.062	1.195	192,666	3,295,049
2006-2007	2,737,430	3,545,760	1.080	0.074	1.373	278,128	3,823,888
2007-2008	2,979,844	4,186,178	1.096	0.088	1.515	397,273	4,583,451
2008-2009	3,033,978	4,951,514	1.115	0.103	1.464	457,500	5,409,014
2009-2010	2,982,017	6,752,804	1.139	0.122	2.150	782,183	7,534,987
2010-2011	2,768,364	5,695,843	1.167	0.143	2.141	847,571	6,543,414
2011-2012	2,621,952	5,255,117	1.201	0.167	2.573	1,126,629	6,381,746
2012-2013	2,504,519	5,636,796	1.255	0.203	2.628	1,336,121	6,972,917
2013-2014	2,486,255	6,195,757	1.333	0.250	2.677	1,663,926	7,859,683
2014-2015	2,536,535	4,606,558	1.572	0.364	2.829	2,612,012	7,218,570
2015-2016	2,545,585	2,950,471	2.317	0.568	2.997	4,333,339	7,283,810
Totals	44,514,946	\$81,645,686				\$14,730,746	\$96,376,432

Notes:

- (A) From Appendix M, Column (C).
- (B) Provided by the Authority. These losses exclude amounts incurred above the Authority's SIR for each year.
- (C) From Appendix A, Page 1, Column (F).
- (D)  $1 - 1/(C)$ .
- (E) From Appendix C, Page 3, Column (H).
- (F)  $(A) \times (D) \times (E)$ .
- (G)  $(B) + (F)$ .

This exhibit shows the calculation of ultimate losses based on the assumption that there is an underlying relationship between losses and exposure that changes in regular ways over time. The method relies on the premise that the losses that are currently unreported will cost what this relationship would suggest.

Workers' Compensation - Workers' Compensation

Exposure and Development Method  
Based on Paid Losses

Accident Year	Trended Payroll (\$00) (A)	Paid Losses as of 10/31/16 (B)	Loss Development Factor (C)	Percentage of Losses Yet to Be Paid (D)	Program Rate (E)	Incurred but not Paid (F)	Ultimate Program Losses (G)
1996-1997	1,172,677	2,614,140	1.049	0.047	2.201	121,310	2,735,450
1997-1998	1,307,148	3,503,346	1.059	0.056	2.323	170,044	3,673,390
1998-1999	1,343,125	3,300,031	1.068	0.064	2.182	187,565	3,487,596
1999-2000	1,383,821	2,827,773	1.078	0.072	2.471	246,198	3,073,971
2000-2001	1,499,701	3,720,422	1.088	0.081	2.336	283,767	4,004,189
2001-2002	1,569,154	2,280,274	1.098	0.089	1.677	234,201	2,514,475
2002-2003	1,935,895	3,547,758	1.113	0.102	2.124	419,408	3,967,166
2003-2004	2,225,135	3,130,757	1.134	0.118	1.603	420,893	3,551,650
2004-2005	2,281,377	2,428,167	1.152	0.132	1.099	330,955	2,759,122
2005-2006	2,600,434	2,774,668	1.173	0.147	1.195	456,805	3,231,473
2006-2007	2,737,430	3,323,407	1.197	0.165	1.373	620,151	3,943,558
2007-2008	2,979,844	3,846,165	1.225	0.184	1.515	830,661	4,676,826
2008-2009	3,033,978	4,454,745	1.263	0.208	1.464	923,883	5,378,628
2009-2010	2,982,017	6,014,932	1.316	0.240	2.150	1,538,721	7,553,653
2010-2011	2,768,364	4,933,938	1.384	0.277	2.141	1,641,798	6,575,736
2011-2012	2,621,952	4,538,247	1.482	0.325	2.573	2,192,542	6,730,789
2012-2013	2,504,519	4,516,293	1.628	0.386	2.628	2,540,604	7,056,897
2013-2014	2,486,255	3,751,237	1.908	0.476	2.677	3,168,115	6,919,352
2014-2015	2,536,535	2,484,864	2.586	0.613	2.829	4,398,801	6,883,665
2015-2016	2,545,585	1,044,826	5.244	0.809	2.997	6,171,957	7,216,783
Totals	44,514,946	\$69,035,990				\$26,898,379	\$95,934,369

Notes:

- (A) From Appendix M, Column (C).
- (B) Provided by the Authority. These losses exclude amounts paid above the Authority's SIR for each year.
- (C) From Appendix B, Page 1, Column (F).
- (D)  $1 - 1/(C)$ .
- (E) From Appendix C, Page 3, Column (H).
- (F)  $(A) \times (D) \times (E)$ .
- (G)  $(B) + (F)$ .

This exhibit shows the calculation of ultimate losses based on the assumption that there is an underlying relationship between losses and exposure that changes in regular ways over time. The method relies on the premise that the losses that are currently unpaid will cost what this relationship would suggest.

Workers' Compensation - Workers' Compensation

Exposure and Development Method

Accident Year	Trended Payroll (\$00) (A)	Ultimate Limited Losses (B)	Trend Factor (C)	Trended Limited Losses (D)	Trended Limited Loss Rate (E)	Limited Loss Rate (F)	Factor to SIR (G)	Program Loss Rate (H)
1996-1997	1,172,677	2,175,000	1.491	3,242,925	2.765	1.855	1.187	2.201
1997-1998	1,307,148	2,544,000	1.284	3,266,496	2.499	1.946	1.194	2.323
1998-1999	1,343,125	2,441,914	1.139	2,781,340	2.071	1.818	1.200	2.182
1999-2000	1,383,821	2,832,000	1.016	2,877,312	2.079	2.047	1.207	2.471
2000-2001	1,499,701	2,886,000	0.949	2,738,814	1.826	1.924	1.214	2.336
2001-2002	1,569,154	2,155,000	0.945	2,036,475	1.298	1.373	1.222	1.677
2002-2003	1,935,895	3,297,000	0.992	3,270,624	1.689	1.703	1.247	2.124
2003-2004	2,225,135	2,776,000	1.243	3,450,568	1.551	1.248	1.285	1.603
2004-2005	2,281,377	1,938,000	1.589	3,079,482	1.350	0.849	1.295	1.099
2005-2006	2,600,434	2,382,000	1.677	3,994,614	1.536	0.916	1.305	1.195
2006-2007	2,737,430	2,858,000	1.575	4,501,350	1.644	1.044	1.315	1.373
2007-2008	2,979,844	3,405,000	1.449	4,933,845	1.656	1.143	1.326	1.515
2008-2009	3,033,978	3,326,000	1.335	4,440,210	1.463	1.096	1.336	1.464
2009-2010	2,982,017	4,763,000	1.205	5,739,415	1.925	1.597	1.347	2.150
2010-2011	2,768,364	4,366,000	1.148	5,012,168	1.811	1.577	1.358	2.141
2011-2012	2,621,952	4,504,000	1.141	5,139,064	1.960	1.880	1.369	2.573
2012-2013	2,504,519	4,693,000	1.126	5,284,318	2.110	1.905	1.380	2.628
2013-2014	2,486,255	5,144,000	1.114	5,730,416	2.305	1.925	1.391	2.677
2014-2015	2,536,535	4,809,000	1.063	5,111,967	2.015	2.018	1.402	2.829
2015-2016	2,545,585	4,339,000	1.012	4,391,068	1.725	2.120	1.414	2.997
Total/Avg	44,514,946	\$67,633,914		\$81,022,471	\$1.820			
11/12-14/15	10,149,261	19,150,000		21,265,765	\$2.095			
12/13-14/15	7,527,309	14,646,000		16,126,701	\$2.142			
				Selected Limited Rate:	\$2.145			
				Prior:	\$2.190			

Notes:

- (A) From Appendix M, Column (C).
- (B) Selected average of results from Appendices A and B.
- (C) From Appendix E, Page 1, Column (B).
- (D) (B) x (C).
- (E) (D) / (A).
- (F) Selected Limited Rate / (C). For 2010-2011 and prior (B) / (A).
- (G) Based on a Weibull distribution, a mathematical model of claim sizes.
- (H) (F) x (G).

This exhibit shows the calculation of the underlying historical relationship between losses and exposure that is needed to apply the estimation methods shown on pages 1 and 2 of this Appendix.

Workers' Compensation - Workers' Compensation

Frequency and Severity Method

Accident Year	Ultimate Program Severity (A)	Adjusted Ultimate Claims (B)	Ultimate Program Losses (C)
Prior	\$3,904	5,444	\$21,253,376
1996-1997	7,502	344	2,580,688
1997-1998	8,364	363	3,036,132
1998-1999	8,140	360	2,930,400
1999-2000	9,043	378	3,418,254
2000-2001	10,274	341	3,503,434
2001-2002	7,811	337	2,632,307
2002-2003	9,789	420	4,111,380
2003-2004	8,235	433	3,565,755
2004-2005	7,007	358	2,508,506
2005-2006	8,331	373	3,107,463
2006-2007	9,372	401	3,758,172
2007-2008	10,798	418	4,513,564
2008-2009	12,732	349	4,443,468
2009-2010	15,680	409	6,413,120
2010-2011	17,035	348	5,928,180
2011-2012	18,178	338	6,144,164
2012-2013	18,956	342	6,482,952
2013-2014	19,705	329	6,482,945
2014-2015	21,233	337	7,155,521
2015-2016	22,920	336	7,701,120
Total		12,758	\$111,670,901

Notes:

- (A) From Appendix D, Page 2, Column (H).
- (B) From Appendix D, Page 2, Column (B).
- (C) (A) x (B).

This exhibit shows the calculation of the estimated ultimate losses for each year based on the observed average frequency and severity of claims.



Workers' Compensation - Workers' Compensation

Frequency and Severity Method

Accident Year	Ultimate Limited Losses (A)	Adjusted Ultimate Claims (B)	Ultimate Limited Severity (C)	Trend Factor (D)	Trended Limited Severity (E)	Limited Severity (F)	Factor to SIR (G)	Program Severity (H)
Prior	\$18,482,000	5,444	\$3,395	2.792	\$9,479	\$3,395	1.150	\$3,904
1996-1997	2,175,000	344	6,323	2.217	14,018	6,323	1.187	7,502
1997-1998	2,544,000	363	7,008	1.873	13,126	7,008	1.194	8,364
1998-1999	2,441,914	360	6,783	1.629	11,050	6,783	1.200	8,140
1999-2000	2,832,000	378	7,492	1.426	10,684	7,492	1.207	9,043
2000-2001	2,886,000	341	8,463	1.305	11,044	8,463	1.214	10,274
2001-2002	2,155,000	337	6,395	1.274	8,147	6,395	1.222	7,811
2002-2003	3,297,000	420	7,850	1.310	10,284	7,850	1.247	9,789
2003-2004	2,776,000	433	6,411	1.610	10,322	6,411	1.285	8,235
2004-2005	1,938,000	358	5,413	2.017	10,918	5,413	1.295	7,007
2005-2006	2,382,000	373	6,386	2.087	13,328	6,386	1.305	8,331
2006-2007	2,858,000	401	7,127	1.922	13,698	7,127	1.315	9,372
2007-2008	3,405,000	418	8,146	1.732	14,109	8,146	1.326	10,798
2008-2009	3,326,000	349	9,530	1.564	14,905	9,530	1.336	12,732
2009-2010	4,763,000	409	11,645	1.384	16,117	11,645	1.347	15,680
2010-2011	4,367,000	348	12,549	1.293	16,226	12,549	1.358	17,035
2011-2012	4,577,000	338	13,541	1.261	17,075	13,283	1.369	18,178
2012-2013	4,702,000	342	13,749	1.219	16,760	13,741	1.380	18,956
2013-2014	4,848,000	329	14,736	1.182	17,418	14,171	1.391	19,705
2014-2015	4,780,000	337	14,184	1.106	15,688	15,145	1.402	21,233
2015-2016	4,900,000	336	14,583	1.033	15,064	16,215	1.414	22,920
Average Limited Severity:					\$13,308			
Average 11/12-14/15 Limited Severity:					16,735			
Average 11/12-15/16 Limited Severity:					16,401			
Selected Limited Severity:					\$16,750			
Prior:					\$17,300			

Notes:

- (A) Selected average of results from Appendices A, B, and C.
- (B) Appendix D, Page 3, Column (C).
- (C) (A) / (B).
- (D) From Appendix E, Page 1, Column (J).
- (E) (C) x (D).
- (F) Selected Limited Severity / (D).
- (G) Based on a Weibull distribution, a mathematical model of claim sizes.
- (H) (F) x (G).

This exhibit shows the calculation of the historical average cost per claim, or severity. The observed average severity is used in the method shown on page 1 of this Appendix.

Workers' Compensation - Workers' Compensation

Frequency and Severity Method  
Projection of Ultimate Claims

Accident Year	Reported Claim Development (A)	Closed Claim Development (B)	Selected Ultimate Claims (C)	Trended Payroll (\$000,000) (D)	Claim Frequency (E)	Trend Factor (F)	Trended Claim Frequency (G)
Prior	5,444	5,449	5,444	0.0		0.655	
1996-1997	344	344	344	117.3	2.933	0.668	1.959
1997-1998	363	362	363	130.7	2.777	0.682	1.894
1998-1999	360	363	360	134.3	2.680	0.696	1.865
1999-2000	378	377	378	138.4	2.732	0.710	1.940
2000-2001	341	337	341	150.0	2.274	0.725	1.649
2001-2002	337	339	337	156.9	2.148	0.740	1.590
2002-2003	420	420	420	193.6	2.170	0.755	1.638
2003-2004	433	436	433	222.5	1.946	0.769	1.496
2004-2005	358	360	358	228.1	1.569	0.785	1.232
2005-2006	373	376	373	260.0	1.434	0.801	1.149
2006-2007	401	407	401	273.7	1.465	0.817	1.197
2007-2008	418	424	418	298.0	1.403	0.834	1.170
2008-2009	349	347	349	303.4	1.150	0.851	0.979
2009-2010	409	400	409	298.2	1.372	0.868	1.191
2010-2011	348	344	348	276.8	1.257	0.886	1.114
2011-2012	338	336	338	262.2	1.289	0.904	1.165
2012-2013	342	346	342	250.5	1.366	0.922	1.259
2013-2014	329	313	329	248.6	1.323	0.942	1.246
2014-2015	337	320	337	253.7	1.329	0.961	1.277
2015-2016	336	378	336	254.6	1.320	0.980	1.294
Total	12,758	12,778	12,758	4,451.5			1.335
10/11-14/15	1,694	1,659	1,694	1,291.8			1.210
					(H) Selected 2016-2017 Frequency:		1.335
					Prior:		1.450
Program Year:				2016-2017	2017-2018		
(I) Trend Factor:				1.000	0.980		
(J) Selected Frequency:				1.335	1.308		
(K) Est. Payroll (\$000,000):				272.2	274.9		
(L) Ultimate Claims:				363	360		

Notes:

- (A) From Appendix D, Page 4, (C).
- (B) From Appendix D, Page 5, (C).
- (C) Selected from (A) and (B).
- (D) From Appendix M, Column (C) / 10,000.
- (E) (C) / (D).
- (F) From Appendix E, Page 1, Column (H).
- (G) (E) x (F).
- (H) The selected frequency of 1.335 is based on (G).
- (I) From Appendix E, Page 1, Column (H).
- (J) (H) x (I).
- (K) From Appendix M, Column (C) / 10,000.
- (L) (J) x (K).

This exhibit summarizes the estimated numbers of claims and shows the estimated frequencies per \$1,000,000 of trended payroll.

Workers' Compensation - Workers' Compensation

Frequency and Severity Method  
Reported Claim Count Development

Accident Year	Claims Reported as of 10/31/2016 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	5,444	1.000	5,444	
1996-1997	344	1.000	344	1.960
1997-1998	363	1.000	363	1.894
1998-1999	360	1.000	360	1.866
1999-2000	378	1.000	378	1.939
2000-2001	341	1.000	341	1.648
2001-2002	337	1.000	337	1.589
2002-2003	420	1.000	420	1.638
2003-2004	433	1.000	433	1.496
2004-2005	358	1.000	358	1.232
2005-2006	373	1.000	373	1.149
2006-2007	401	1.000	401	1.197
2007-2008	418	1.000	418	1.170
2008-2009	349	1.000	349	0.979
2009-2010	409	1.000	409	1.191
2010-2011	348	1.000	348	1.114
2011-2012	338	1.000	338	1.165
2012-2013	341	1.004	342	1.259
2013-2014	326	1.008	329	1.247
2014-2015	333	1.012	337	1.277
2015-2016	318	1.056	336	1.294
Total	12,732		12,758	1.335

Notes:

- (A) Provided by the Authority.
- (B) From Appendix D, Page 6.
- (C) (A) x (B).
- (D) (C) / [Appendix D, Page 3, (D)] x [Appendix D, Page 3, (F)].

This exhibit shows the calculation of estimated ultimate claims for each year based on reported claims as provided by the Authority. These numbers of claims tend to "develop" or change from period to period as more claims are filed. This development tends to follow quantifiable patterns over time.

Workers' Compensation - Workers' Compensation

Frequency and Severity Method  
Closed Claim Count Development

Accident Year	Claims Closed as of 10/31/2016 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	5,422	1.005	5,449	
1996-1997	342	1.006	344	1.960
1997-1998	359	1.007	362	1.889
1998-1999	360	1.009	363	1.881
1999-2000	373	1.011	377	1.934
2000-2001	333	1.013	337	1.629
2001-2002	334	1.015	339	1.599
2002-2003	413	1.017	420	1.638
2003-2004	427	1.021	436	1.507
2004-2005	351	1.025	360	1.239
2005-2006	365	1.029	376	1.158
2006-2007	394	1.033	407	1.215
2007-2008	408	1.038	424	1.187
2008-2009	333	1.043	347	0.973
2009-2010	380	1.052	400	1.164
2010-2011	323	1.066	344	1.101
2011-2012	310	1.084	336	1.158
2012-2013	309	1.119	346	1.274
2013-2014	266	1.178	313	1.186
2014-2015	259	1.236	320	1.212
2015-2016	232	1.628	378	1.455
Total	12,293		12,778	1.338

Notes:

- (A) Provided by the Authority.
- (B) From Appendix D, Page 7.
- (C) (A) x (B).
- (D) (C) / [Appendix D, Page 3, (D)] x [Appendix D, Page 3, (F)].

This exhibit shows the calculation of estimated ultimate claims for each year based on closed claims as provided by the Authority. These numbers of closed claims tend to "develop" or change from period to period as more claims are closed. This development tends to follow quantifiable patterns over time.

Workers' Compensation - Workers' Compensation  
Reported Claim Count Development

Claims Reported as of:

Accident Year	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	132 Months	144 Months	156 Months
1995-1996													373
1996-1997												344	344
1997-1998											363	363	363
1998-1999										360	360	360	360
1999-2000									378	378	378	378	378
2000-2001								341	341	341	341	341	341
2001-2002							335	336	336	337	337	337	337
2002-2003						420	420	420	420	420	420	420	420
2003-2004					433	433	433	433	433	433	433	433	433
2004-2005				356	356	358	358	358	358	358	358	358	
2005-2006			370	371	371	372	372	372	372	372	373		
2006-2007		399	400	400	400	400	400	401	401	401			
2007-2008	388	406	412	413	416	417	418	418	418				
2008-2009	324	346	347	349	349	349	349	349					
2009-2010	386	405	407	408	409	410	409						
2010-2011	330	346	346	347	347	348							
2011-2012	308	332	334	336	338								
2012-2013	321	338	339	341									
2013-2014	299	322	325										
2014-2015	302	331											
2015-2016	306												

Reported Claim Count Development Factors:

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months	132-144 Months	144-156 Months	156-168 Months
1995-1996													1.000
1996-1997												1.000	1.000
1997-1998											1.000	1.000	1.000
1998-1999										1.000	1.000	1.000	1.000
1999-2000									1.000	1.000	1.000	1.000	1.000
2000-2001								1.000	1.000	1.000	1.000	1.000	1.000
2001-2002							1.003	1.000	1.003	1.000	1.000	1.000	1.000
2002-2003						1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003-2004					1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2004-2005				1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000		
2005-2006			1.003	1.000	1.003	1.000	1.000	1.000	1.000	1.000	1.003		
2006-2007		1.003	1.000	1.000	1.000	1.000	1.003	1.000	1.000				
2007-2008	1.046	1.015	1.002	1.007	1.002	1.002	1.000	1.000					
2008-2009	1.068	1.003	1.006	1.000	1.000	1.000	1.000						
2009-2010	1.049	1.005	1.002	1.002	1.002	0.998							
2010-2011	1.048	1.000	1.003	1.000	1.003								
2011-2012	1.078	1.006	1.006	1.006									
2012-2013	1.053	1.003	1.006										
2013-2014	1.077	1.009											
2014-2015	1.096												
Average	1.064	1.006	1.004	1.002	1.002	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000
Claim-weighted													
Averages													
3-yr	1.075	1.006	1.005	1.003	1.002	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.000
4-yr	1.076	1.004	1.004	1.002	1.002	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.000
CSAC													
Factors	1.100	1.007	1.004	1.003	1.002	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000
Prior	1.060	1.005	1.004	1.003	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.063	1.005	1.004	1.003	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulated	1.078	1.014	1.009	1.005	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Workers' Compensation - Workers' Compensation  
Closed Claim Development

Accident Year	Claims Closed as of:												
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	132 Months	144 Months	156 Months
1995-1996													366
1996-1997												340	341
1997-1998											353	355	356
1998-1999										353	353	353	353
1999-2000									359	363	366	367	368
2000-2001								318	319	321	324	327	330
2001-2002							324	323	324	324	327	328	330
2002-2003						390	398	404	406	411	413	413	414
2003-2004					398	413	415	416	420	425	422	426	427
2004-2005				322	331	336	341	347	346	347	348	351	
2005-2006			324	338	338	348	354	356	359	361	364		
2006-2007		340	357	359	373	379	385	388	393	395			
2007-2008	224	337	348	363	380	386	393	396	407				
2008-2009	189	282	289	304	315	319	324	334					
2009-2010	178	302	317	340	356	363	376						
2010-2011	161	263	276	296	311	322							
2011-2012	164	252	263	284	305								
2012-2013	185	267	281	301									
2013-2014	171	252	261										
2014-2015	164	254											
2015-2016	123												

Closed Claim Count Development Factors:

	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168
	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months
1995-1996													1.000
1996-1997												1.003	0.994
1997-1998											1.006	1.003	1.003
1998-1999										1.000	1.000	1.000	1.006
1999-2000									1.011	1.008	1.003	1.003	1.011
2000-2001								1.003	1.006	1.009	1.009	1.009	0.997
2001-2002							0.997	1.003	1.000	1.009	1.003	1.006	1.009
2002-2003						1.021	1.015	1.005	1.012	1.005	1.000	1.002	1.000
2003-2004					1.038	1.005	1.002	1.010	1.012	0.993	1.009	1.002	
2004-2005				1.028	1.015	1.015	1.018	0.997	1.003	1.003	1.009		
2005-2006			1.043	1.000	1.030	1.017	1.006	1.008	1.006	1.008			
2006-2007		1.050	1.006	1.039	1.016	1.016	1.008	1.013	1.005				
2007-2008	1.504	1.033	1.043	1.047	1.016	1.018	1.008	1.028					
2008-2009	1.492	1.025	1.052	1.036	1.013	1.016	1.031						
2009-2010	1.697	1.050	1.073	1.047	1.020	1.036							
2010-2011	1.634	1.049	1.072	1.051	1.035								
2011-2012	1.537	1.044	1.080	1.074									
2012-2013	1.443	1.052	1.071										
2013-2014	1.474	1.036											
2014-2015	1.549												
<hr/>													
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168
Average	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months
Average	1.541	1.042	1.055	1.040	1.023	1.018	1.011	1.008	1.007	1.004	1.005	1.004	1.003
Claim-weighted													
Averages													
3-yr	1.487	1.044	1.074	1.057	1.022	1.023	1.015	1.017	1.005	1.001	1.006	1.003	1.002
4-yr	1.499	1.045	1.074	1.051	1.021	1.021	1.012	1.012	1.007	1.002	1.005	1.005	1.004
CSAC													
Factors	1.600	1.080	1.050	1.030	1.025	1.015	1.010	1.008	1.005	1.004	1.003	1.002	1.001
Prior	1.535	1.045	1.060	1.040	1.018	1.015	1.010	1.005	1.005	1.005	1.004	1.004	1.004
Selected	1.525	1.044	1.059	1.040	1.018	1.015	1.010	1.005	1.005	1.005	1.004	1.004	1.004
Cumulated	1.913	1.254	1.201	1.134	1.090	1.071	1.055	1.045	1.040	1.035	1.030	1.026	1.022

Workers' Compensation - Workers' Compensation

Loss Trend Factors

Accident Year	Benefit Level Factor (A)	Factor to 2016-2017 Loss Rate Level (B)	Factor to 2017-2018 Loss Rate Level (C)	Factor to 2018-2019 Loss Rate Level (D)	Factor to 2019-2020 Loss Rate Level (E)	Factor to 2016-2017 Frequency Level (F)	Factor to 2017-2018 Frequency Level (G)	Factor to 2018-2019 Frequency Level (H)	Factor to 2019-2020 Frequency Level (I)	Factor to 2016-2017 Severity Level (J)
Prior	1.663	1.841	1.851	1.860	1.869	0.655	0.642	0.629	0.616	2.792
1996-1997	1.354	1.491	1.498	1.506	1.513	0.668	0.655	0.642	0.629	2.217
1997-1998	1.172	1.284	1.291	1.297	1.304	0.682	0.669	0.655	0.642	1.873
1998-1999	1.045	1.139	1.144	1.150	1.156	0.696	0.682	0.668	0.655	1.629
1999-2000	0.937	1.016	1.021	1.026	1.031	0.710	0.696	0.682	0.668	1.426
2000-2001	0.880	0.949	0.954	0.959	0.963	0.725	0.710	0.696	0.682	1.305
2001-2002	0.880	0.945	0.950	0.955	0.960	0.740	0.725	0.710	0.696	1.274
2002-2003	0.928	0.992	0.997	1.002	1.007	0.755	0.740	0.724	0.710	1.310
2003-2004	1.168	1.243	1.249	1.255	1.262	0.769	0.754	0.739	0.724	1.610
2004-2005	1.500	1.589	1.597	1.605	1.613	0.785	0.770	0.754	0.739	2.017
2005-2006	1.591	1.677	1.685	1.693	1.702	0.801	0.785	0.769	0.754	2.087
2006-2007	1.501	1.575	1.582	1.590	1.598	0.817	0.801	0.785	0.769	1.922
2007-2008	1.387	1.449	1.456	1.463	1.470	0.834	0.818	0.801	0.785	1.732
2008-2009	1.284	1.335	1.341	1.348	1.355	0.851	0.834	0.817	0.801	1.564
2009-2010	1.164	1.205	1.211	1.217	1.223	0.868	0.851	0.834	0.817	1.384
2010-2011	1.115	1.148	1.154	1.160	1.166	0.886	0.869	0.851	0.834	1.293
2011-2012	1.114	1.141	1.147	1.153	1.158	0.904	0.886	0.868	0.851	1.261
2012-2013	1.104	1.126	1.132	1.137	1.143	0.922	0.904	0.886	0.868	1.219
2013-2014	1.098	1.114	1.120	1.125	1.131	0.942	0.923	0.904	0.886	1.182
2014-2015	1.052	1.063	1.068	1.073	1.079	0.961	0.942	0.922	0.904	1.106
2015-2016	1.007	1.012	1.017	1.022	1.028	0.980	0.960	0.941	0.922	1.033
2016-2017	1.000	1.000	1.005	1.010	1.015	1.000	0.980	0.960	0.941	1.000
2017-2018	1.000	--	1.000	1.005	1.010	--	1.000	0.980	0.960	--
2018-2019	1.000	--	--	1.000	1.005	--	--	1.000	0.980	--
2019-2020	1.000	--	--	--	1.000	--	--	--	1.000	--

Notes:

- (A) Based on WCIRB.
- (B) - (E) (A) adjusted for a 0.5% annual loss rate trend.
- (F) - (I) (A) adjusted for a -2.0% annual frequency trend.
- (J) (A) adjusted for a 2.5% annual severity trend.

This exhibit shows the calculation of the ways in which we expect claims costs to have changed over the past twenty years due to changes in statutory workers' compensation benefit levels and changes in actual claims costs in excess of changes in payroll. Changes in the ways in which claims are filed as a result of greater awareness of workers' compensation benefits are not generally reflected in the statutory benefit level factors shown above, but may be part of the reason for changes in actual claims costs in excess of payroll changes.

Workers' Compensation - Workers' Compensation

Residual Trend Factors

Accident Year	Initial Estimate of Ultimate Limited Losses (A)	Ultimate Reported Claims (B)	BLF (C)	Adjusted Limited Severity (D)	Trended Payroll (\$00) (E)	Ultimate Frequency (F)
Prior	\$18,482,000	5,444	1.663	5,645		
1996-1997	2,175,000	344	1.354	8,558	1,172,677	2.933
1997-1998	2,544,000	363	1.172	8,216	1,307,148	2.777
1998-1999	2,441,914	360	1.045	7,088	1,343,125	2.680
1999-2000	2,832,000	378	0.937	7,023	1,383,821	2.732
2000-2001	2,886,000	341	0.880	7,446	1,499,701	2.274
2001-2002	2,155,000	337	0.880	5,629	1,569,154	2.148
2002-2003	3,297,000	420	0.928	7,283	1,935,895	2.170
2003-2004	2,776,000	433	1.168	7,489	2,225,135	1.946
2004-2005	1,938,000	358	1.500	8,122	2,281,377	1.569
2005-2006	2,382,000	373	1.591	10,158	2,600,434	1.434
2006-2007	2,858,000	401	1.501	10,696	2,737,430	1.465
2007-2008	3,405,000	418	1.387	11,300	2,979,844	1.403
2008-2009	3,326,000	349	1.284	12,237	3,033,978	1.150
2009-2010	4,763,000	409	1.164	13,561	2,982,017	1.372
2010-2011	4,366,000	348	1.115	13,993	2,768,364	1.257
2011-2012	4,504,000	338	1.114	14,842	2,621,952	1.289
2012-2013	4,693,000	342	1.104	15,153	2,504,519	1.366
2013-2014	5,144,000	329	1.098	17,165	2,486,255	1.323
2014-2015	4,809,000	337	1.052	15,017	2,536,535	1.329
2015-2016	4,339,000	336	1.007	13,009	2,545,585	1.320

	<u>Severity Trend Factors</u>	<u>Frequency Trend Factors</u>
Latest 10 x 2015-2016	1.055	0.992
Latest 5 x 2015-2016	1.029	1.014
Prior	1.025	0.980
Default	1.025	0.980
Selected Residual Trend	1.025	0.980

Notes:

- (A) Selected average of results from Appendices A and B.
- (B) Appendix D, Page 3, Column (C).
- (C) Appendix E, Page 1, (A).
- (D)  $(A) \times (C) / (B)$ .
- (E) From Appendix M, Column (C).
- (F)  $(B) / (E) \times 10,000$ .



Workers' Compensation - Workers' Compensation

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>10/31/2016</u>	<u>Calendar Period</u>	
		<u>11/1/2016</u> <u>to</u> <u>6/30/2017</u>	<u>7/1/2017</u> <u>to</u> <u>6/30/2018</u>
Prior			
Ultimate Loss	\$33,785,031	\$33,785,031	\$33,785,031
Paid in Calendar Period	-	86,100	166,413
Paid to Date	32,573,009	32,659,109	32,825,522
Outstanding Liability	1,212,022	1,125,922	959,509
2000-2001			
Ultimate Loss	\$4,204,000	\$4,204,000	\$4,204,000
Paid in Calendar Period	-	35,785	51,496
Paid to Date	3,720,422	3,756,207	3,807,703
Outstanding Liability	483,578	447,793	396,297
2001-2002			
Ultimate Loss	\$2,478,000	\$2,478,000	\$2,478,000
Paid in Calendar Period	-	12,852	18,857
Paid to Date	2,280,274	2,293,126	2,311,983
Outstanding Liability	197,726	184,874	166,017
2002-2003			
Ultimate Loss	\$3,871,000	\$3,871,000	\$3,871,000
Paid in Calendar Period	-	28,445	29,185
Paid to Date	3,547,758	3,576,203	3,605,388
Outstanding Liability	323,242	294,797	265,612
2003-2004			
Ultimate Loss	\$3,400,000	\$3,400,000	\$3,400,000
Paid in Calendar Period	-	26,924	31,501
Paid to Date	3,130,757	3,157,681	3,189,182
Outstanding Liability	269,243	242,319	210,818
2004-2005			
Ultimate Loss	\$2,861,000	\$2,861,000	\$2,861,000
Paid in Calendar Period	-	27,268	56,374
Paid to Date	2,428,167	2,455,435	2,511,809
Outstanding Liability	432,833	405,565	349,191
2005-2006			
Ultimate Loss	\$3,307,000	\$3,307,000	\$3,307,000
Paid in Calendar Period	-	39,925	46,286
Paid to Date	2,774,668	2,814,593	2,860,879
Outstanding Liability	532,332	492,407	446,121

Workers' Compensation - Workers' Compensation

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>10/31/2016</u>	<u>Calendar Period</u>	
		<u>11/1/2016</u> <u>to</u> <u>6/30/2017</u>	<u>7/1/2017</u> <u>to</u> <u>6/30/2018</u>
2006-2007			
Ultimate Loss	\$3,829,000	\$3,829,000	\$3,829,000
Paid in Calendar Period	-	36,908	49,681
Paid to Date	3,323,407	3,360,315	3,409,996
Outstanding Liability	505,593	468,685	419,004
2007-2008			
Ultimate Loss	\$4,588,000	\$4,588,000	\$4,588,000
Paid in Calendar Period	-	54,896	70,755
Paid to Date	3,846,165	3,901,061	3,971,816
Outstanding Liability	741,835	686,939	616,184
2008-2009			
Ultimate Loss	\$5,521,000	\$5,521,000	\$5,521,000
Paid in Calendar Period	-	91,698	103,303
Paid to Date	4,454,745	4,546,443	4,649,746
Outstanding Liability	1,066,255	974,557	871,254
2009-2010			
Ultimate Loss	\$7,691,000	\$7,691,000	\$7,691,000
Paid in Calendar Period	-	162,579	186,159
Paid to Date	6,014,932	6,177,511	6,363,670
Outstanding Liability	1,676,068	1,513,489	1,327,330
2010-2011			
Ultimate Loss	\$6,595,000	\$6,595,000	\$6,595,000
Paid in Calendar Period	-	152,818	209,646
Paid to Date	4,933,938	5,086,756	5,296,402
Outstanding Liability	1,661,062	1,508,244	1,298,598
2011-2012			
Ultimate Loss	\$6,347,000	\$6,347,000	\$6,347,000
Paid in Calendar Period	-	193,537	213,209
Paid to Date	4,538,247	4,731,784	4,944,993
Outstanding Liability	1,808,753	1,615,216	1,402,007
2012-2013			
Ultimate Loss	\$7,015,000	\$7,015,000	\$7,015,000
Paid in Calendar Period	-	277,356	342,088
Paid to Date	4,516,293	4,793,649	5,135,737
Outstanding Liability	2,498,707	2,221,351	1,879,263

Workers' Compensation - Workers' Compensation

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>10/31/2016</u>	<u>Calendar Period</u>	
		<u>11/1/2016</u> <u>to</u> <u>6/30/2017</u>	<u>7/1/2017</u> <u>to</u> <u>6/30/2018</u>
<b>2013-2014</b>			
Ultimate Loss	\$7,390,000	\$7,390,000	\$7,390,000
Paid in Calendar Period	-	523,982	492,135
Paid to Date	3,751,237	4,275,219	4,767,354
Outstanding Liability	3,638,763	3,114,781	2,622,646
<b>2014-2015</b>			
Ultimate Loss	\$7,051,000	\$7,051,000	\$7,051,000
Paid in Calendar Period	-	767,111	767,403
Paid to Date	2,484,864	3,251,975	4,019,378
Outstanding Liability	4,566,136	3,799,025	3,031,622
<b>2015-2016</b>			
Ultimate Loss	\$7,371,000	\$7,371,000	\$7,371,000
Paid in Calendar Period	-	1,132,385	1,204,959
Paid to Date	1,044,826	2,177,211	3,382,170
Outstanding Liability	6,326,174	5,193,789	3,988,830
<b>2016-2017</b>			
Ultimate Loss	\$2,716,000	\$8,147,000	\$8,147,000
Paid in Calendar Period	-	679,382	1,822,490
Paid to Date	59,122	738,504	2,560,994
Outstanding Liability	2,656,878	7,408,496	5,586,006
<b>2017-2018</b>			
Ultimate Loss	-	-	\$8,338,000
Paid in Calendar Period	-	-	983,884
Paid to Date	-	-	983,884
Outstanding Liability	-	-	7,354,116
<b>Totals</b>			
Ultimate Loss	\$120,020,031	\$125,451,031	\$133,789,031
Paid in Calendar Period	-	4,329,951	6,845,824
Paid to Date	89,422,831	93,752,782	100,598,606
Outstanding Liability	30,597,200	31,698,249	33,190,425
Total Outstanding ULAE	0	0	0
Outstanding Liability plus ULAE	30,597,200	31,698,249	33,190,425

Notes appear on the next page.

Workers' Compensation - Workers' Compensation

Payment and Reserve Forecast

Notes to previous page:

- Accident Year is associated with date of loss. Calendar Period is associated with date of transaction. For example, for the losses which occurred during 2014-2015, \$767,111 is expected to be paid between 11/1/16 and 6/30/17, \$3,251,975 will have been paid by 6/30/17, and the reserve for remaining payments on these claims should be \$3,799,025.
- Ultimate Losses for each accident year are from Exhibit 4, Page 1.
- Paid in Calendar Period is a proportion of the Outstanding Liability from the previous calendar period. These proportions are derived from the paid loss development pattern selected in Appendix B. For example,  $\$767,403 = \$3,799,025 \times 20.2\%$ .
- Paid to Date is Paid in Calendar Period plus Paid to Date from previous calendar period. For example,  $\$4,019,378 = \$767,403 + \$3,251,975$ .
- Outstanding Liability is Ultimate Loss minus Paid to Date. For example,  $\$3,799,025 = \$7,051,000 - \$3,251,975$ .

This exhibit shows the calculation of the liability for outstanding claims as of the date of evaluation, the end of the current fiscal year, and the end of the coming fiscal year. It also shows the expected claims payout during the remainder of the current fiscal year and the coming fiscal year. Refer to the Totals at the end of the exhibit for the balance sheet information. The top parts of the exhibit show information for each program year.

## Workers' Compensation - Workers' Compensation

## Short- and Long-Term Liabilities

<u>Liabilities as of 10/31/16:</u>		<u>Expected</u>	<u>Discounted</u>
<u>Current (Short Term)</u>	Loss and ALAE:	\$3,650,569	\$3,605,775
	ULAE:	191,613	189,262
	Short-Term Loss and LAE:	<u>\$3,842,182</u>	<u>\$3,795,037</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$26,946,631	\$22,717,998
	ULAE:	1,414,387	1,192,432
	Long-Term Loss and LAE:	<u>\$28,361,018</u>	<u>\$23,910,430</u>
<u>Total Liability</u>	Loss and ALAE:	\$30,597,200	\$26,323,773
	ULAE:	1,606,000	1,381,694
	Total Loss and LAE:	<u>\$32,203,200</u>	<u>\$27,705,467</u>
<u>Liabilities as of 6/30/17:</u>			
<u>Current (Short Term)</u>	Loss and ALAE:	\$5,861,940	\$5,790,012
	ULAE:	307,723	303,947
	Short-Term Loss and LAE:	<u>\$6,169,663</u>	<u>\$6,093,959</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$25,836,309	\$21,492,621
	ULAE:	1,356,277	1,128,255
	Long-Term Loss and LAE:	<u>\$27,192,586</u>	<u>\$22,620,876</u>
<u>Total Liability</u>	Loss and ALAE:	\$31,698,249	\$27,282,633
	ULAE:	1,664,000	1,432,202
	Total Loss and LAE:	<u>\$33,362,249</u>	<u>\$28,714,835</u>

		<u>Discounted with a Margin for Contingencies</u>				
		70%	75%	80%	85%	90%
		<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>
<u>Liabilities as of 10/31/16:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$3,905,054	\$4,020,439	\$4,157,459	\$4,323,324	\$4,543,277
	ULAE:	204,971	211,027	218,219	226,925	238,470
	Short-Term Loss and LAE:	<u>\$4,110,025</u>	<u>\$4,231,466</u>	<u>\$4,375,678</u>	<u>\$4,550,249</u>	<u>\$4,781,747</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$24,603,592	\$25,330,568	\$26,193,851	\$27,238,880	\$28,624,677
	ULAE:	1,291,404	1,329,562	1,374,874	1,429,726	1,502,464
	Long-Term Loss and LAE:	<u>\$25,894,996</u>	<u>\$26,660,130</u>	<u>\$27,568,725</u>	<u>\$28,668,606</u>	<u>\$30,127,141</u>
<u>Total Liability</u>	Loss and ALAE:	\$28,508,646	\$29,351,007	\$30,351,310	\$31,562,204	\$33,167,954
	ULAE:	1,496,375	1,540,589	1,593,093	1,656,651	1,740,934
	Total Loss and LAE:	<u>\$30,005,021</u>	<u>\$30,891,596</u>	<u>\$31,944,403</u>	<u>\$33,218,855</u>	<u>\$34,908,888</u>
<u>Liabilities as of 6/30/17:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$6,270,583	\$6,455,863	\$6,675,884	\$6,942,224	\$7,295,415
	ULAE:	329,175	338,901	350,451	364,432	382,973
	Short-Term Loss and LAE:	<u>\$6,599,758</u>	<u>\$6,794,764</u>	<u>\$7,026,335</u>	<u>\$7,306,656</u>	<u>\$7,678,388</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$23,276,509	\$23,964,273	\$24,780,992	\$25,769,653	\$27,080,703
	ULAE:	1,221,899	1,258,004	1,300,878	1,352,778	1,421,601
	Long-Term Loss and LAE:	<u>\$24,498,408</u>	<u>\$25,222,277</u>	<u>\$26,081,870</u>	<u>\$27,122,431</u>	<u>\$28,502,304</u>
<u>Total Liability</u>	Loss and ALAE:	\$29,547,092	\$30,420,136	\$31,456,876	\$32,711,877	\$34,376,118
	ULAE:	1,551,074	1,596,905	1,651,329	1,717,210	1,804,574
	Total Loss and LAE:	<u>\$31,098,166</u>	<u>\$32,017,041</u>	<u>\$33,108,205</u>	<u>\$34,429,087</u>	<u>\$36,180,692</u>

Note: Current (short term) liabilities are the portion of the total estimated liability shown on Appendix F that is expected to be paid out within the coming year. Totals may vary from Exhibit 1, due to rounding.

Workers' Compensation - Workers' Compensation  
Discount Factors to be Applied to Overall Reserves

Accident Year	Full Value of Reserve at 10/31/16 (A)	Discount Factor (B)	Discounted Reserve at 10/31/16 (C)	Full Value of Reserve at 6/30/17 (D)	Discount Factor (E)	Discounted Reserve at 6/30/17 (F)
Prior	\$825,281	0.988	\$815,154	\$776,589	0.988	\$767,060
1996-1997	49,860	0.973	48,528	42,032	0.988	41,516
1997-1998	98,654	0.953	94,052	89,085	0.966	86,064
1998-1999	0	0.936	0	0	0.947	0
1999-2000	238,227	0.919	218,955	218,216	0.930	202,939
2000-2001	483,578	0.904	437,059	447,793	0.914	409,132
2001-2002	197,726	0.890	176,032	184,874	0.899	166,180
2002-2003	323,242	0.877	283,561	294,797	0.886	261,187
2003-2004	269,243	0.866	233,059	242,319	0.873	211,514
2004-2005	432,833	0.856	370,289	405,565	0.862	349,590
2005-2006	532,332	0.847	451,127	492,407	0.852	419,661
2006-2007	505,593	0.841	425,049	468,685	0.845	396,063
2007-2008	741,835	0.835	619,644	686,939	0.839	576,011
2008-2009	1,066,255	0.833	887,914	974,557	0.834	812,461
2009-2010	1,676,068	0.833	1,396,736	1,513,489	0.832	1,259,640
2010-2011	1,661,062	0.834	1,385,355	1,508,244	0.834	1,257,683
2011-2012	1,808,753	0.836	1,512,597	1,615,216	0.834	1,347,236
2012-2013	2,498,707	0.840	2,098,614	2,221,351	0.837	1,860,049
2013-2014	3,638,763	0.848	3,086,392	3,114,781	0.841	2,619,975
2014-2015	4,566,136	0.861	3,930,669	3,799,025	0.852	3,235,708
2015-2016	6,326,174	0.874	5,529,906	5,193,789	0.865	4,494,593
2016-2017	2,656,878	0.874	2,323,081	7,408,496	0.879	6,508,371
Totals	\$30,597,200		\$26,323,773	\$31,698,249		\$27,282,633

(G) Discount Factor at 10/31/16 for Overall Reserve: 0.860  
(H) Discount Factor at 6/30/17 for Overall Reserve: 0.861

Notes:

- (A) From Appendix F, Outstanding Liability at 10/31/16.
- (B) Based on Appendix H, Page 2, Column (E).
- (C) (A) x (B).
- (D) From Appendix F, Outstanding Liability at 6/30/17.
- (E) Based on Appendix H, Page 2, Column (E).
- (F) (D) x (E).
- (G) Total of (C) / Total of (A).
- (H) Total of (F) / Total of (D).

This exhibit shows the expected impact of anticipated investment income on the liability for outstanding claims at the date of evaluation and the end of the current fiscal year. For example, if the discount factor in item (G) is 0.860, the discounted liability for outstanding claims is 86.0% of the full value.

Workers' Compensation - Workers' Compensation

Calculation of Discount Factors

Payment Year (A)	Payment Pattern (B)	Return on Investment (C)	Discounted* Reserves (D)	Undiscounted Reserves (E)	Discount Factor (F)
22	7.5%	2.5%	0.074	0.075	0.988
21	0.8%	2.5%	0.081	0.083	0.966
20	0.9%	2.5%	0.088	0.093	0.947
19	1.0%	2.5%	0.095	0.102	0.930
18	0.9%	2.5%	0.102	0.111	0.914
17	0.9%	2.5%	0.108	0.120	0.899
16	1.1%	2.5%	0.116	0.131	0.886
15	1.0%	2.5%	0.123	0.141	0.873
14	1.2%	2.5%	0.131	0.153	0.862
13	1.3%	2.5%	0.141	0.165	0.852
12	1.6%	2.5%	0.153	0.181	0.845
11	1.7%	2.5%	0.166	0.198	0.839
10	2.0%	2.5%	0.182	0.218	0.834
9	2.7%	2.5%	0.204	0.245	0.832
8	3.5%	2.5%	0.233	0.280	0.834
7	3.7%	2.5%	0.264	0.317	0.834
6	5.0%	2.5%	0.307	0.367	0.837
5	6.1%	2.5%	0.359	0.427	0.841
4	9.8%	2.5%	0.447	0.525	0.852
3	14.8%	2.5%	0.582	0.673	0.865
2	21.1%	2.5%	0.776	0.883	0.879
1	11.7%	2.5%	0.872	1.000	0.872
(G) Discount Factor for Future Funding:					0.883

Notes:

- (A) This is the year of payment relative to the accident year. For example, year 7 refers to payments made in the seventh year after the inception of the accident year. We assume that payments are made at midyear.
- (B) Percent of ultimate loss paid this year. This payment pattern is based on the paid loss development pattern selected in Appendix B, Page 2.
- (C) Assumed Investment Income Rates.
- (D) Discounted Reserves at the beginning of this year is next year's Discounted Reserves discounted one year plus this year's payments discounted six months. For example, in year 2,  $77.6\% = [58.2\% / 1.025] + [21.1\% / (1.012)]$ .
- (E) Summation of future (B) values. This is the percent of ultimate loss unpaid at the beginning of the year.
- (F) (D) / (E).
- (G) (F) at year 1, with interest accumulated for six months. We assume that the required funding is deposited at the middle of the first year.

This exhibit shows the calculation of the effect of anticipated investment income on future claims costs. Thus, if the discount factor in item (F) is 0.88, on a discounted basis, \$0.88 must be budgeted for every \$1 that will actually be paid on claims that will be incurred in the next fiscal year.

## Workers' Compensation - Workers' Compensation

## Confidence Level Table

Probability	Projected Losses	Outstanding Losses
95%	1.455	1.357
90%	1.330	1.260
85%	1.252	1.199
80%	1.194	1.153
75%	1.146	1.115
70%	1.104	1.083
65%	1.067	1.053
60%	1.033	1.026
55%	1.002	1.002
50%	0.971	0.978
45%	0.942	0.955
40%	0.913	0.932
35%	0.884	0.909
30%	0.854	0.885
25%	0.823	0.860

To read table: For the above retention, there is a 90% chance that final loss settlements will be less than 1.330 times the average expected amount of losses.

This exhibit shows the loads that must be applied to bring estimated losses at the expected level to the various indicated confidence levels.



## Workers' Compensation - Workers' Compensation

## Program History

Policy Year Start Date	Policy Year End Date	Policy Year	Self-Insured Retention	
			Per Occurrence	Aggregate
7/1/1978	6/30/1986	1978-1986	200,000	(none)
7/1/1986	6/30/1988	1986-1988	250,000	(none)
7/1/1988	6/30/1990	1988-1990	300,000	(none)
7/1/1990	6/30/1999	1990-1999	350,000	(none)
7/1/1999	6/30/2000	1999-2000	350,000	(none)
7/1/2000	6/30/2001	2000-2001	350,000	(none)
7/1/2001	6/30/2002	2001-2002	350,000	(none)
7/1/2002	6/30/2003	2002-2003	400,000	(none)
7/1/2003	6/30/2004	2003-2004	500,000	(none)
7/1/2004	6/30/2005	2004-2005	500,000	(none)
7/1/2005	6/30/2006	2005-2006	500,000	(none)
7/1/2006	6/30/2007	2006-2007	500,000	(none)
7/1/2007	6/30/2008	2007-2008	500,000	(none)
7/1/2008	6/30/2009	2008-2009	500,000	(none)
7/1/2009	6/30/2010	2009-2010	500,000	(none)
7/1/2010	6/30/2011	2010-2011	500,000	(none)
7/1/2011	6/30/2012	2011-2012	500,000	(none)
7/1/2012	6/30/2013	2012-2013	500,000	(none)
7/1/2013	6/30/2014	2013-2014	500,000	(none)
7/1/2014	6/30/2015	2014-2015	500,000	(none)
7/1/2015	6/30/2016	2015-2016	500,000	(none)
7/1/2016	6/30/2017	2016-2017	500,000	(none)
7/1/2017	6/30/2018	2017-2018	500,000	(none)
	Third Party Claims Administrator		Begin Date	End Date
	MPA's Risk Management Department		7/1/1978	Current

This exhibit summarizes some of the key facts about the history of the program.

## Workers' Compensation - Workers' Compensation

Estimated Total Assets as of 6/30/17

(A) <u>Total Assets as of 6/30/16:</u>		\$31,685,000
(B) <u>Total Income to Fund during 2016-2017</u>		
Contributions:		12,230,000
Interest:		200,000
Other:		0
Total Income:		<u>\$12,430,000</u>
(C) <u>Total Payments from Fund during 2016-2017</u>		
Loss and ALAE:		\$6,186,000
Excess Premium	Rate: \$0.5701	1,552,000
Claims Administration		290,000
Department Personnel		868,000
DOC Expense Paid		145,000
G&A Expense Paid		531,000
Member Dividend/Rebates Payable:		0
Total Payments:		<u>\$9,572,000</u>
(D) <u>Estimated Total Assets as of 6/30/17:</u>		\$34,543,000

## Notes:

- (A) Provided by the Authority.
- (B) Provided by the Authority.
- (C) Provided by the Authority. Loss and ALAE paid is estimated in Appendix F.
- (D) (A) + (B) - (C).

## Workers' Compensation - Workers' Compensation

## Incurred Losses as of 10/31/16

Accident Year (A)	Unlimited Incurred (B)	Additions to Losses (C)	Subtractions from Losses (D)	Adjusted Incurred (E)	Incurred Over SIR (F)	Incurred Over \$100,000 (G)	Incurred Capped at \$100,000 (H)	Incurred \$100,000 to SIR Layer (I)	Incurred Capped at SIR (J)	Incurred Capped at SIR & Aggregate (K)
Prior	\$21,853,137	\$0	\$0	\$21,853,137	\$847,819	\$3,481,256	\$18,371,881	\$2,633,437	\$21,005,318	\$21,005,318
1996-1997	2,781,158	0	0	2,781,158	138,386	622,694	2,158,464	484,308	2,642,772	2,642,772
1997-1998	4,126,765	0	0	4,126,765	556,523	1,603,035	2,523,730	1,046,512	3,570,242	3,570,242
1998-1999	4,850,846	0	0	4,850,846	1,550,815	2,408,931	2,441,914	858,116	3,300,031	3,300,031
1999-2000	3,017,993	0	0	3,017,993	0	213,674	2,804,319	213,674	3,017,993	3,017,993
2000-2001	4,444,558	0	0	4,444,558	327,173	1,593,190	2,851,367	1,266,017	4,117,385	4,117,385
2001-2002	2,413,072	0	0	2,413,072	0	287,579	2,125,494	287,579	2,413,072	2,413,072
2002-2003	3,740,050	0	0	3,740,050	0	498,434	3,241,616	498,434	3,740,050	3,740,050
2003-2004	4,063,006	0	0	4,063,006	809,858	1,341,813	2,721,192	531,956	3,253,148	3,253,148
2004-2005	3,249,933	0	0	3,249,933	538,120	1,355,539	1,894,394	817,419	2,711,812	2,711,812
2005-2006	3,102,383	0	0	3,102,383	0	780,632	2,321,752	780,632	3,102,383	3,102,383
2006-2007	3,545,760	0	0	3,545,760	0	768,170	2,777,590	768,170	3,545,760	3,545,760
2007-2008	4,186,178	0	0	4,186,178	0	889,944	3,296,234	889,944	4,186,178	4,186,178
2008-2009	14,886,417	0	0	14,886,417	9,934,903	11,679,425	3,206,992	1,744,522	4,951,514	4,951,514
2009-2010	7,903,566	0	0	7,903,566	1,150,763	3,341,395	4,562,172	2,190,632	6,752,804	6,752,804
2010-2011	6,317,782	0	0	6,317,782	621,939	2,163,556	4,154,226	1,541,617	5,695,843	5,695,843
2011-2012	5,255,117	0	0	5,255,117	0	948,054	4,307,063	948,054	5,255,117	5,255,117
2012-2013	5,636,796	0	0	5,636,796	0	1,243,973	4,392,823	1,243,973	5,636,796	5,636,796
2013-2014	6,492,157	0	0	6,492,157	296,400	1,785,548	4,706,609	1,489,148	6,195,757	6,195,757
2014-2015	4,606,558	0	0	4,606,558	0	709,569	3,896,989	709,569	4,606,558	4,606,558
2015-2016	3,057,824	0	0	3,057,824	107,353	573,884	2,483,940	466,531	2,950,471	2,950,471
2016-2017	507,005	0	0	507,005	0	0	507,005	0	507,005	507,005
Total	\$120,038,061	\$0	\$0	\$120,038,061	\$16,880,051	\$38,290,295	\$81,747,766	\$21,410,243	\$103,158,009	\$103,158,009

## Notes:

- (A) Years are 7/1 to 6/30.  
(B) Provided by the Authority. Amounts are gross of recoveries and do not include 4850.  
(C) No adjustments were made.  
(D) No adjustments were made.  
(E) (B) + (C) - (D).  
(F) Sum of incurred losses in excess of SIR.  
(G) Sum of incurred losses in excess of \$100,000.  
(H) (E) - (G).  
(I) (G) - (F).  
(J) (E) - (F).  
(K) Minimum of (J) and the aggregate stop loss. See Appendix J.

Workers' Compensation - Workers' Compensation

Paid Losses as of 10/31/16

Accident Year (A)	Unlimited Paid (B)	Additions to Losses (C)	Subtractions from Losses (D)	Adjusted Paid (E)	Paid Over SIR (F)	Paid Over \$100,000 (G)	Paid Capped at \$100,000 (H)	Paid \$100,000 to SIR Layer (I)	Paid Capped at SIR (J)	Paid Capped at SIR & Aggregate (K)
Prior	\$21,078,578	\$0	\$0	\$21,078,578	\$750,859	\$2,861,697	\$18,216,880	\$2,110,839	\$20,327,719	\$20,327,719
1996-1997	2,752,526	0	0	2,752,526	138,386	622,694	2,129,832	484,308	2,614,140	2,614,140
1997-1998	3,778,371	0	0	3,778,371	275,025	1,284,897	2,493,474	1,009,872	3,503,346	3,503,346
1998-1999	4,850,846	0	0	4,850,846	1,550,815	2,408,931	2,441,914	858,116	3,300,031	3,300,031
1999-2000	2,827,773	0	0	2,827,773	0	92,962	2,734,811	92,962	2,827,773	2,827,773
2000-2001	3,720,422	0	0	3,720,422	0	935,984	2,784,438	935,984	3,720,422	3,720,422
2001-2002	2,280,274	0	0	2,280,274	0	214,561	2,065,713	214,561	2,280,274	2,280,274
2002-2003	3,547,758	0	0	3,547,758	0	441,541	3,106,216	441,541	3,547,758	3,547,758
2003-2004	3,940,614	0	0	3,940,614	809,858	1,294,187	2,646,428	484,329	3,130,757	3,130,757
2004-2005	2,573,043	0	0	2,573,043	144,876	782,459	1,790,584	637,583	2,428,167	2,428,167
2005-2006	2,774,668	0	0	2,774,668	0	521,300	2,253,368	521,300	2,774,668	2,774,668
2006-2007	3,323,407	0	0	3,323,407	0	573,622	2,749,785	573,622	3,323,407	3,323,407
2007-2008	3,846,165	0	0	3,846,165	0	655,710	3,190,455	655,710	3,846,165	3,846,165
2008-2009	7,479,093	0	0	7,479,093	3,024,348	4,480,137	2,998,956	1,455,789	4,454,745	4,454,745
2009-2010	6,431,031	0	0	6,431,031	416,099	2,246,011	4,185,020	1,829,912	6,014,932	6,014,932
2010-2011	5,135,377	0	0	5,135,377	201,438	1,415,213	3,720,164	1,213,774	4,933,938	4,933,938
2011-2012	4,538,247	0	0	4,538,247	0	744,917	3,793,331	744,917	4,538,247	4,538,247
2012-2013	4,516,293	0	0	4,516,293	0	759,656	3,756,637	759,656	4,516,293	4,516,293
2013-2014	3,751,237	0	0	3,751,237	0	581,534	3,169,703	581,534	3,751,237	3,751,237
2014-2015	2,484,864	0	0	2,484,864	0	190,328	2,294,537	190,328	2,484,864	2,484,864
2015-2016	1,044,826	0	0	1,044,826	0	0	1,044,826	0	1,044,826	1,044,826
2016-2017	59,122	0	0	59,122	0	0	59,122	0	59,122	59,122
Total	\$96,734,535	\$0	\$0	\$96,734,535	\$7,311,705	\$23,108,339	\$73,626,195	\$15,796,635	\$89,422,830	\$89,422,830

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the Authority. Amounts are gross of recoveries and do not include 4850.
- (C) No adjustments were made.
- (D) No adjustments were made.
- (E) (B) + (C) - (D).
- (F) Sum of paid losses in excess of SIR.
- (G) Sum of paid losses in excess of \$100,000.
- (H) (E) - (G).
- (I) (G) - (F).
- (J) (E) - (F).
- (K) Minimum of (J) and the aggregate stop loss. See Appendix J.

Workers' Compensation - Workers' Compensation

Case Reserves as of 10/31/16

Accident Year (A)	Unlimited Reserves (B)	Additions to Losses (C)	Subtractions from Losses (D)	Adjusted Reserves (E)	Reserves Over SIR (F)	Reserves Over \$100,000 (G)	Reserves Capped at \$100,000 (H)	Reserves \$100,000 to SIR Layer (I)	Reserves Capped at SIR (J)	Reserves Capped at SIR & Aggregate (K)
Prior	\$774,560	\$0	\$0	\$774,560	\$96,960	\$619,559	\$155,001	\$522,598	\$677,600	\$677,599
1996-1997	28,632	0	0	28,632	0	0	28,632	0	28,632	28,632
1997-1998	348,394	0	0	348,394	281,498	318,138	30,256	36,640	66,896	66,896
1998-1999	0	0	0	0	0	0	0	0	0	0
1999-2000	190,220	0	0	190,220	0	120,713	69,508	120,713	190,220	190,220
2000-2001	724,136	0	0	724,136	327,173	657,206	66,929	330,033	396,963	396,963
2001-2002	132,799	0	0	132,799	0	73,018	59,781	73,018	132,799	132,799
2002-2003	192,292	0	0	192,292	0	56,892	135,400	56,892	192,292	192,292
2003-2004	122,391	0	0	122,391	0	47,627	74,765	47,627	122,391	122,391
2004-2005	676,889	0	0	676,889	393,244	573,080	103,809	179,836	283,645	283,645
2005-2006	327,715	0	0	327,715	0	259,332	68,383	259,332	327,715	327,715
2006-2007	222,353	0	0	222,353	0	194,548	27,805	194,548	222,353	222,353
2007-2008	340,013	0	0	340,013	0	234,234	105,779	234,234	340,013	340,013
2008-2009	7,407,324	0	0	7,407,324	6,910,555	7,199,288	208,036	288,734	496,769	496,769
2009-2010	1,472,536	0	0	1,472,536	734,664	1,095,384	377,151	360,720	737,871	737,871
2010-2011	1,182,405	0	0	1,182,405	420,500	748,343	434,062	327,843	761,905	761,905
2011-2012	716,870	0	0	716,870	0	203,138	513,732	203,138	716,870	716,870
2012-2013	1,120,503	0	0	1,120,503	0	484,317	636,186	484,317	1,120,503	1,120,503
2013-2014	2,740,920	0	0	2,740,920	296,400	1,204,014	1,536,906	907,614	2,444,520	2,444,520
2014-2015	2,121,694	0	0	2,121,694	0	519,241	1,602,453	519,241	2,121,694	2,121,694
2015-2016	2,012,998	0	0	2,012,998	107,353	573,884	1,439,114	466,531	1,905,645	1,905,645
2016-2017	447,883	0	0	447,883	0	0	447,883	0	447,883	447,883
Total	\$23,303,526	\$0	\$0	\$23,303,526	\$9,568,347	\$15,181,955	\$8,121,571	\$5,613,609	\$13,735,179	\$13,735,179

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Appendix L, Page 1, Column (B) - Appendix L, Page 2, Column (B).
- (C) Appendix L, Page 1, Column (C) - Appendix L, Page 2, Column (C).
- (D) Appendix L, Page 1, Column (D) - Appendix L, Page 2, Column (D).
- (E) (B) + (C) - (D).
- (F) Sum of case reserves in excess of SIR.
- (G) Sum of case reserves in excess of \$100,000.
- (H) (E) - (G).
- (I) (G) - (F).
- (J) (E) - (F).
- (K) Minimum of (J) and the aggregate stop loss. See Appendix J.

Workers' Compensation - Workers' Compensation

Claim Counts as of 10/31/16

Accident Year (A)	Reported Claims (B)	Additions to Reported Claims (C)	Subtractions from Reported Claims (D)	Adjusted Reported Claims (E)	Closed Claims (F)	Additions to Closed Claims (G)	Subtractions from Closed Claims (H)	Adjusted Closed Claims (I)	Open Claims (J)	Adjusted Open Claims (K)
Prior	5,444	0	0	5,444	5,422	0	0	5,422	22	22
1996-1997	344	0	0	344	342	0	0	342	2	2
1997-1998	363	0	0	363	359	0	0	359	4	4
1998-1999	360	0	0	360	360	0	0	360	0	0
1999-2000	378	0	0	378	373	0	0	373	5	5
2000-2001	341	0	0	341	333	0	0	333	8	8
2001-2002	337	0	0	337	334	0	0	334	3	3
2002-2003	420	0	0	420	413	0	0	413	7	7
2003-2004	433	0	0	433	427	0	0	427	6	6
2004-2005	358	0	0	358	351	0	0	351	7	7
2005-2006	373	0	0	373	365	0	0	365	8	8
2006-2007	401	0	0	401	394	0	0	394	7	7
2007-2008	418	0	0	418	408	0	0	408	10	10
2008-2009	349	0	0	349	333	0	0	333	16	16
2009-2010	409	0	0	409	380	0	0	380	29	29
2010-2011	348	0	0	348	323	0	0	323	25	25
2011-2012	338	0	0	338	310	0	0	310	28	28
2012-2013	341	0	0	341	309	0	0	309	32	32
2013-2014	326	0	0	326	266	0	0	266	60	60
2014-2015	333	0	0	333	259	0	0	259	74	74
2015-2016	318	0	0	318	232	0	0	232	86	86
2016-2017	79	0	0	79	1	0	0	1	78	78
Total	12,811	0	0	12,811	12,294	0	0	12,294	517	517

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the Authority.
- (C) No adjustments were made.
- (D) No adjustments were made.
- (E) (B) + (C) - (D).
- (F) Provided by the Authority.
- (G) No adjustments were made.
- (H) No adjustments were made.
- (I) (F) + (G) - (H).
- (J) (B) - (F).
- (K) (E) - (I).

Workers' Compensation - Workers' Compensation

Exposure Measures

Accident Year	Population (A)	Gross Revenue (\$00) (B)	Total Payroll (\$00) (C)	Sheriff's Payroll (\$00) (D)	Number of Police Vehicles (E)	Number of Employees (FTE) (F)	Inflation Trend Factor (G)
1996-1997			715,920				1.638
1997-1998			817,990				1.598
1998-1999			861,530				1.559
1999-2000			909,810				1.521
2000-2001			1,010,580				1.484
2001-2002			1,083,670				1.448
2002-2003			1,370,060				1.413
2003-2004			1,613,586				1.379
2004-2005			1,696,191				1.345
2005-2006			1,982,038				1.312
2006-2007			2,138,617				1.280
2007-2008			2,385,784				1.249
2008-2009			2,488,907				1.219
2009-2010			2,508,004				1.189
2010-2011			2,386,521				1.160
2011-2012			2,316,212				1.132
2012-2013			2,268,586				1.104
2013-2014			2,308,500				1.077
2014-2015			2,413,449				1.051
2015-2016			2,483,498				1.025
2016-2017			2,721,887				1.000
2017-2018			2,749,106				1.000

Notes: All exposure data provided by the Authority.

Workers' Compensation - Workers' Compensation

Adjusted Exposure Measures

Accident Year	Population (A)	Gross Revenue (\$00) (B)	Trended Payroll (\$00) (C)	Trended Sheriff's Payroll (\$00) (D)	Number of Police Vehicles (E)	Number of Employees (FTE) (F)	Trended Payroll (\$00) (G)
1996-1997			1,172,677				1,172,677
1997-1998			1,307,148				1,307,148
1998-1999			1,343,125				1,343,125
1999-2000			1,383,821				1,383,821
2000-2001			1,499,701				1,499,701
2001-2002			1,569,154				1,569,154
2002-2003			1,935,895				1,935,895
2003-2004			2,225,135				2,225,135
2004-2005			2,281,377				2,281,377
2005-2006			2,600,434				2,600,434
2006-2007			2,737,430				2,737,430
2007-2008			2,979,844				2,979,844
2008-2009			3,033,978				3,033,978
2009-2010			2,982,017				2,982,017
2010-2011			2,768,364				2,768,364
2011-2012			2,621,952				2,621,952
2012-2013			2,504,519				2,504,519
2013-2014			2,486,255				2,486,255
2014-2015			2,536,535				2,536,535
2015-2016			2,545,585				2,545,585
2016-2017			2,721,887				2,721,887
2017-2018			2,749,106				2,749,106
Weight	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	

Notes: Monetary exposures have been adjusted for inflation before calculating the adjusted exposure measures. All exposures from page 1 have been adjusted to a common level.  
 Composite Exposure = (0.0% x Population) + (0.0% x (\$00)) + (100.0% x Payroll (\$00)) + (0.0% x Payroll (\$00)) + (0.0% x Police Vehicles) + (0.0% x (FTE)).