



Actuarial Review of the Self-Insured Workers' Compensation Program

*Outstanding Liabilities as of June 30, 2018
Forecast for Fiscal Year 2018-19*

Presented to

Municipal Pooling Authority

June 2018





Thursday, June 7, 2018

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 2018-19 program years to be \$7,483,000. 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 2018-19 claims translate to rates of \$2.719 per \$100 of payroll.

In addition, we estimate the program's liability for outstanding claims to be \$29,551,000 as of June 30, 2018, again including ALAE and ULAE, and discounted for anticipated investment income. Given estimated program assets of \$36,525,000 as of June 30, 2018, the program will be funded between the 85% and 90% confidence levels.

The \$29,551,000 estimate is the minimum liability to be booked by MPA at June 30, 2018 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, 2018 are summarized in the table below.

Municipal Pooling Authority
Self-Insured Workers' Compensation Program
Estimated Liability for Unpaid Loss and LAE
at June 30, 2018

	Expected	Marginally Acceptable 70% CL	Recommended Range			Conservative 90% CL
			Low 75% CL	Target 80% CL	High 85% CL	
Loss and ALAE	\$32,606,000	\$35,345,000	\$36,421,000	\$37,660,000	\$39,192,000	\$41,181,000
ULAE	1,712,000	1,855,000	1,912,000	1,977,000	2,058,000	2,163,000
Investment Income Offset	<u>(4,767,000)</u>	<u>(5,167,000)</u>	<u>(5,325,000)</u>	<u>(5,506,000)</u>	<u>(5,730,000)</u>	<u>(6,021,000)</u>
Discounted Loss and LAE	\$29,551,000	\$32,033,000	\$33,008,000	\$34,131,000	\$35,520,000	\$37,323,000
Available Funding	<u>36,525,000</u>	<u>36,525,000</u>	<u>36,525,000</u>	<u>36,525,000</u>	<u>36,525,000</u>	<u>36,525,000</u>
Surplus or (Deficit)	\$6,974,000	\$4,492,000	\$3,517,000	\$2,394,000	\$1,005,000	(\$798,000)

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 2018-19 fiscal year.

Municipal Pooling Authority Self-Insured Workers' Compensation Program Funding Guidelines for 2018-19 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	\$8,492,000	\$9,367,000	\$9,715,000	\$10,122,000	\$10,615,000	\$11,269,000
ULAE	0	0	0	0	0	0
Investment Income Offset	<u>(1,009,000)</u>	<u>(1,113,000)</u>	<u>(1,154,000)</u>	<u>(1,203,000)</u>	<u>(1,261,000)</u>	<u>(1,339,000)</u>
Discounted Loss and LAE	\$7,483,000	\$8,254,000	\$8,561,000	\$8,920,000	\$9,354,000	\$9,930,000
Non-claims Related Expenses	<u>3,903,000</u>	<u>3,903,000</u>	<u>3,903,000</u>	<u>3,903,000</u>	<u>3,903,000</u>	<u>3,903,000</u>
Indicated Funding	\$11,386,000	\$12,157,000	\$12,464,000	\$12,823,000	\$13,257,000	\$13,833,000
Rate per \$100 of 2017-18 Payroll	\$4.137	\$4.418	\$4.529	\$4.660	\$4.817	\$5.027

The funding recommendations shown in the table above do not include any recognition of the existing funding margin at June 30, 2018.

Note that while the projected expenses are for the 2018-19 fiscal year, the rate is a percentage of 2017-18 payroll. This is because in practice MPA collects 2018-19 contributions based on member payroll from 2017-18.

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.

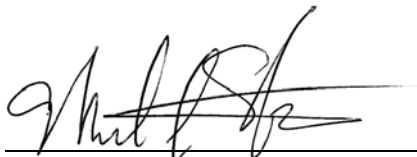
The ultimate impact on loss costs of legislated benefit adjustments are generally difficult to forecast in advance because the changes typically take place over a period of several years following enactment. Furthermore, actuarially derived benefit level evaluations often underestimate actual future 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, Becky Richard at (916) 244-1183, or Eric Small at (916) 244-1165 with any questions you may have concerning this report.

Sincerely,

Bickmore



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President, Actuarial Consulting, Bickmore
Fellow, Casualty Actuarial Society
Member, American Academy of Actuaries



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Senior Manager, Property and Casualty Actuarial Services, Bickmore
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TABLE OF CONTENTS

I. BACKGROUND	6
II. CONCLUSIONS AND RECOMMENDATIONS	7
A. LIABILITY FOR OUTSTANDING CLAIMS	7
B. PROGRAM FUNDING: GOALS AND OBJECTIVES	10
C. HISTORICAL TRENDS IN THE SELF-INSURANCE PROGRAM	12
D. COMPARISON WITH PREVIOUS RESULTS	15
E. DATA PROVIDED FOR THE ANALYSIS	21
III. ASSUMPTIONS AND LIMITATIONS	22
IV. GLOSSARY OF ACTUARIAL TERMS	24
V. EXHIBITS	26
VI. APPENDICES	34

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, 2018, MPA is expected to have assets of \$36,525,000 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, 2018, project ultimate loss costs for 2018-19, 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, 2018. 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, 2018.

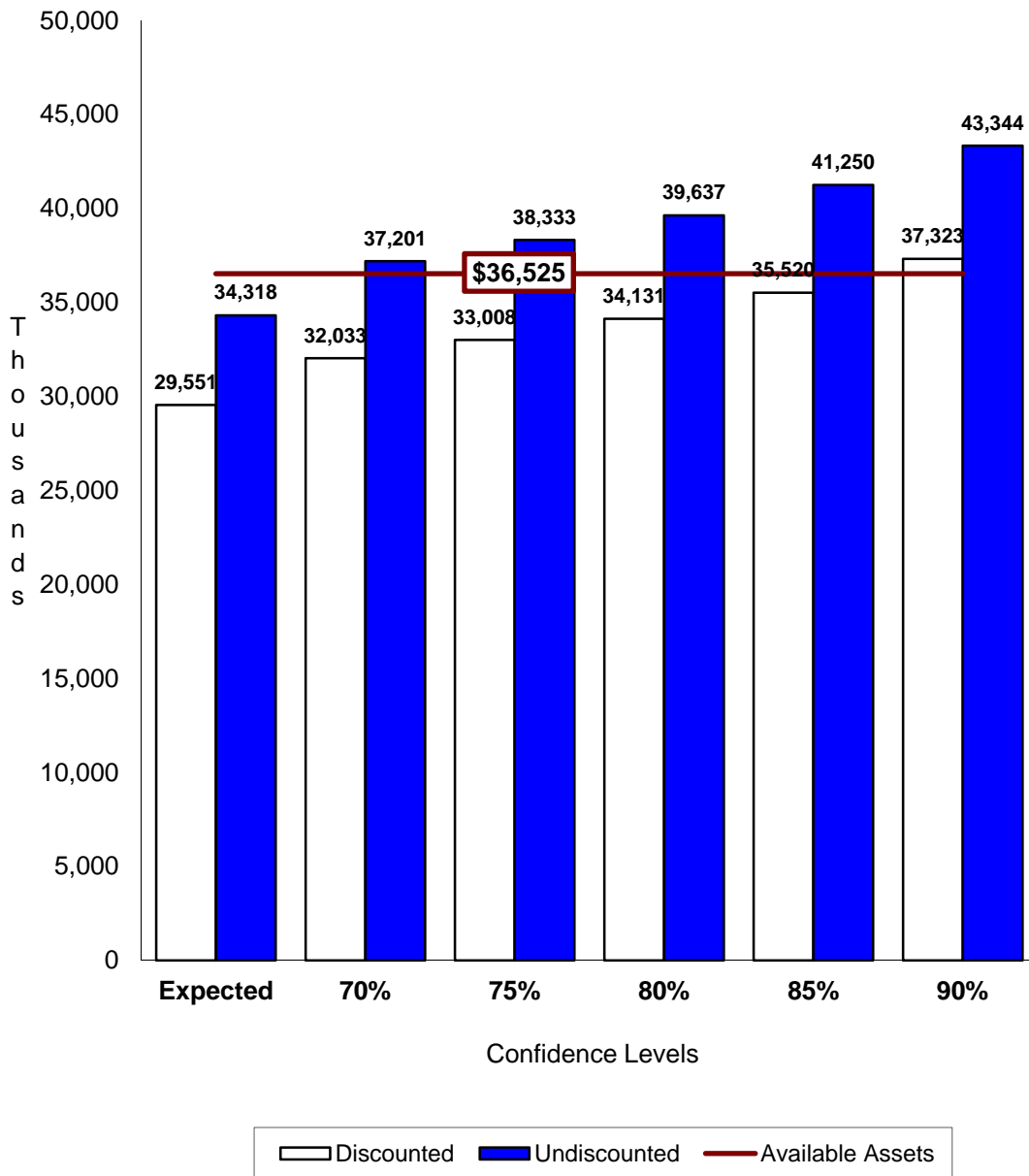
Our best estimate of the full value of MPA's liability for outstanding claims within its self-insured retention (SIR) is \$34,318,000 as of June 30, 2018. This amount includes losses, allocated loss adjustment expenses (ALAE), and unallocated loss adjustment expenses (ULAE). ALAE is the direct cost associated 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 \$29,551,000 as of June 30, 2018.

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, 2018



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, 2018, before recognition of investment income.

Municipal Pooling Authority
Self-Insured Workers' Compensation Program
Estimated Liability for Unpaid Loss and LAE at June 30, 2018

Year	Case Reserves	IBNR Reserves	Total Outstanding
Prior	\$937,815	\$143,892	\$1,081,707
1997-98	46,610	25,492	72,102
1998-99	0	0	0
1999-00	114,747	32,369	147,116
2000-01	221,989	52,119	274,108
2001-02	121,923	43,144	165,067
2002-03	144,849	87,246	232,095
2003-04	200,678	104,260	304,938
2004-05	256,782	109,580	366,362
2005-06	317,285	158,031	475,316
2006-07	173,182	217,319	390,501
2007-08	338,290	316,095	654,385
2008-09	283,901	426,414	710,315
2009-10	547,427	716,106	1,263,533
2010-11	526,372	758,121	1,284,493
2011-12	479,123	805,665	1,284,788
2012-13	300,103	1,085,079	1,385,182
2013-14	1,334,722	1,013,562	2,348,284
2014-15	1,510,986	1,272,924	2,783,910
2015-16	2,059,850	1,901,329	3,961,179
2016-17	3,238,973	2,746,841	5,985,814
2017-18	1,772,526	5,662,336	7,434,862
Loss and ALAE	\$14,928,133	\$17,677,924	\$32,606,057
ULAE		1,712,000	1,712,000
Total	\$14,928,133	\$19,389,924	\$34,318,057

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.

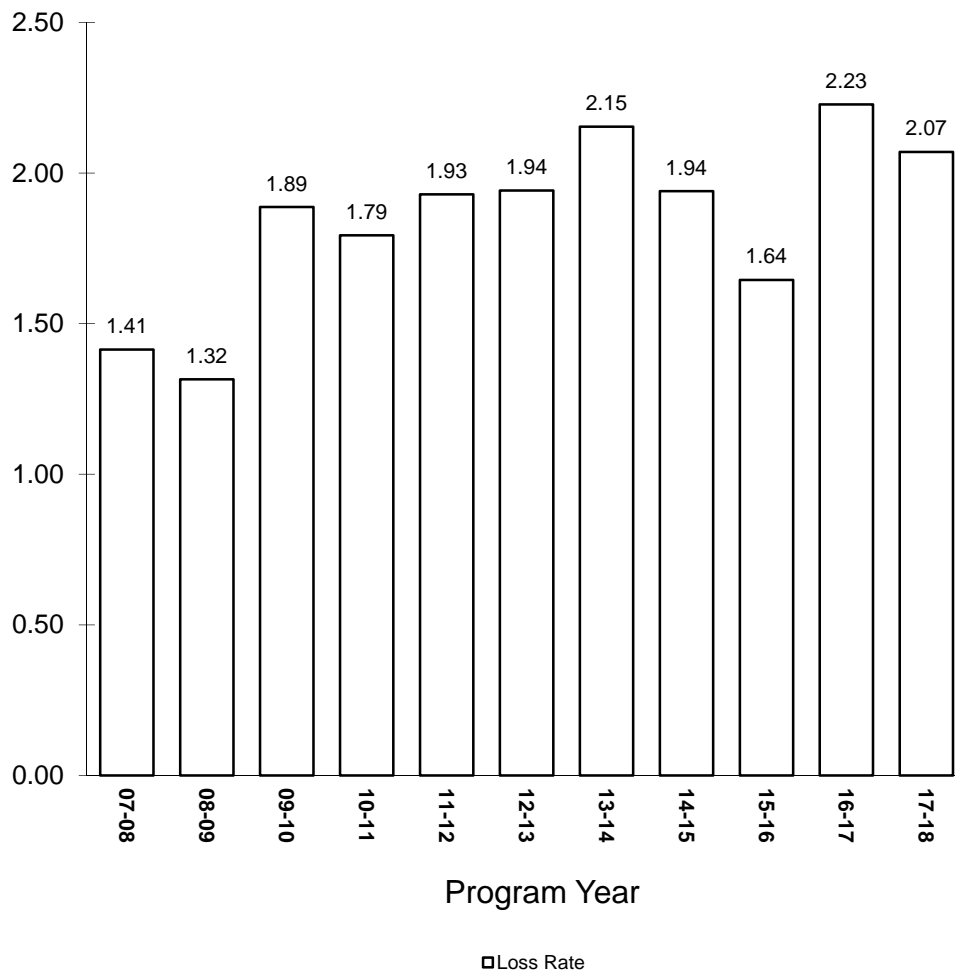
It is estimated that program assets will be \$36,525,000 at June 30, 2018, resulting in the program being funded between the 85% and 90% confidence levels.

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 \$1.41 per \$100 of payroll during the 2007-08 program year to \$2.23 for the 2016-17 program year. Our projected loss rate for 2017-18 of \$2.07 per \$100 of payroll is based on this upward trend.

Graph 2

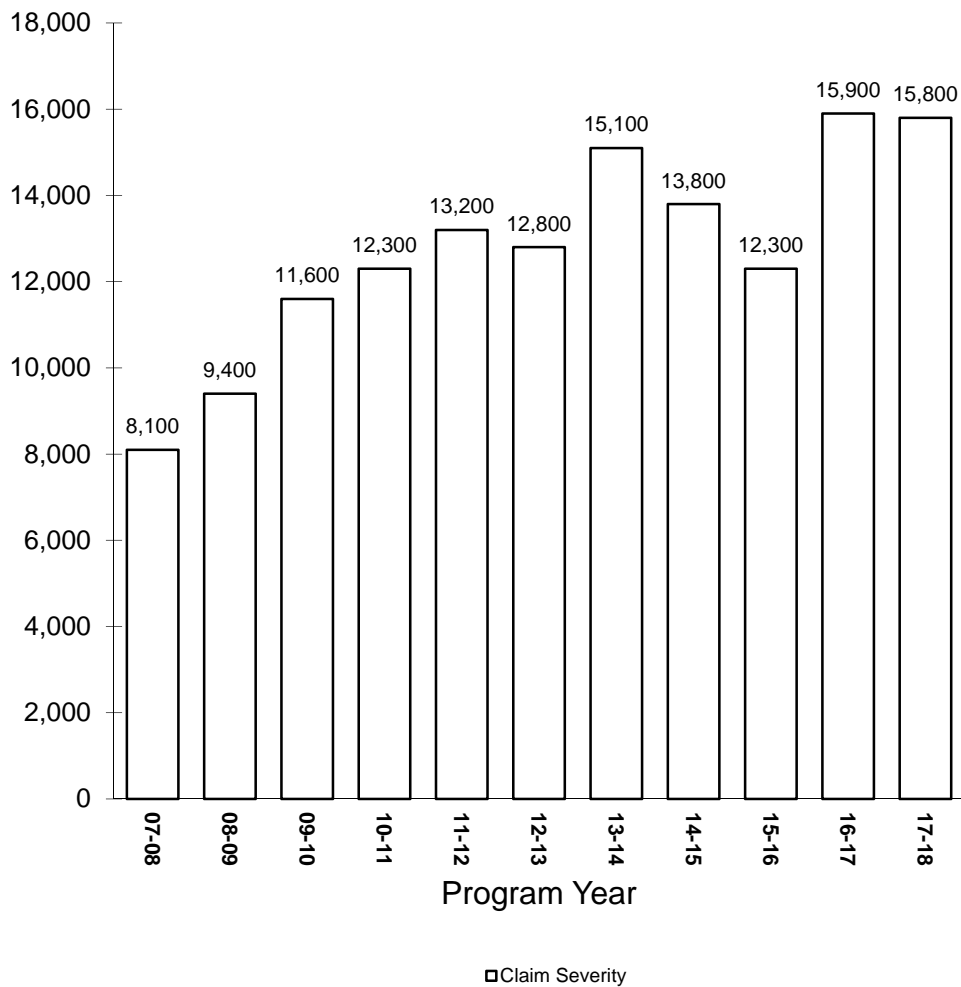
Municipal Pooling Authority
Workers' Compensation
Dollars of Loss per
\$100 of Payroll



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 2017-18 average cost per claim of about \$15,800 is based on the average of the latest four years and the apparent upward trend.

Graph 3

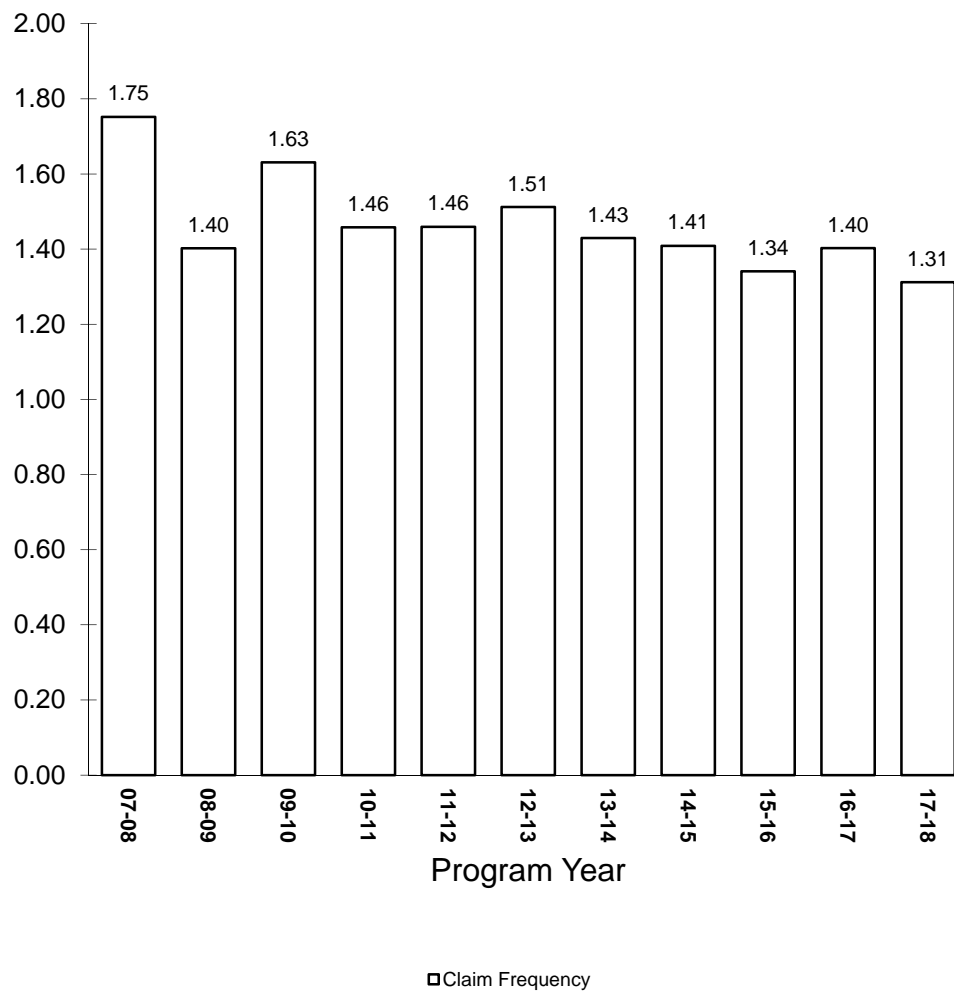
Municipal Pooling Authority
Workers' Compensation
Dollars of Loss per Claim



Over the past ten years, MPA's frequency of claims per \$1 million payroll had been generally decreasing overall. From 2007-08 to 2012-13, the program averaged 1.54 claims. The average frequency decreased to 1.40 during the most recent four years and our projection for 2017-18 is 1.31 based on the average of the most recent four 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 July 14, 2017. In the table below we display actual versus expected development of incurred losses and ALAE by accident year between the October 31, 2016 evaluation date of the prior report and the January 31, 2018 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	\$78,000	\$354,018	\$276,018
1997-98	3,000	1,266	(1,734)
1998-99	0	0	0
1999-00	15,000	(43,362)	(58,362)
2000-01	24,000	(127,504)	(151,504)
2001-02	16,000	(6,216)	(22,216)
2002-03	37,000	32,704	(4,296)
2003-04	38,000	94,592	56,592
2004-05	31,000	9,608	(21,392)
2005-06	41,000	37,586	(3,414)
2006-07	57,000	52,921	(4,079)
2007-08	78,000	185,727	107,727
2008-09	109,000	(72,928)	(181,928)
2009-10	183,000	9,090	(173,910)
2010-11	166,000	258,036	92,036
2011-12	197,000	(14,782)	(211,782)
2012-13	305,000	(509,875)	(814,875)
2013-14	278,000	239,681	(38,319)
2014-15	958,000	1,260,518	302,518
2015-16	1,989,000	1,588,200	(400,800)
2016-17	3,476,000	4,967,154	1,491,154
2017-18	1,609,000	1,191,664	(417,336)
Total	\$9,688,000	\$9,508,098	(\$179,902)

As shown, actual incurred development was lower than anticipated since the prior report. Based on the assumptions from the prior report, it was expected that incurred losses would increase by \$9,688,000 between the two evaluation dates. However, actual development was approximately \$9,508,098; or about \$179,902 less than expected. Although most accident years have developed lower than expected, this favorable development is partially off-set by adverse development during the 2014-15 and 2016-17 accident years.

In the table below we display actual versus expected development of paid losses and ALAE by accident year between the October 31, 2016 evaluation date of the prior report and the January 31, 2018 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	\$181,000	\$170,015	(\$10,985)
1997-98	19,000	11,720	(7,280)
1998-99	0	0	0
1999-00	34,000	26,713	(7,287)
2000-01	61,000	41,649	(19,351)
2001-02	22,000	2,422	(19,578)
2002-03	50,000	75,542	25,542
2003-04	47,000	7,056	(39,944)
2004-05	55,000	31,603	(23,397)
2005-06	70,000	40,211	(29,789)
2006-07	66,000	100,691	34,691
2007-08	97,000	183,047	86,047
2008-09	157,000	136,126	(20,874)
2009-10	280,000	180,996	(99,004)
2010-11	279,000	466,666	187,666
2011-12	333,000	199,957	(133,043)
2012-13	487,000	286,864	(200,136)
2013-14	862,000	1,267,726	405,726
2014-15	1,279,000	1,703,388	424,388
2015-16	1,917,000	1,364,411	(552,589)
2016-17	1,601,000	2,001,927	400,927
2017-18	559,000	401,738	(157,262)
Total	\$8,456,000	\$8,700,468	\$244,468

As shown, actual paid development was greater than anticipated since the prior report. Based on the assumptions from the prior report, it was expected that paid losses would increase by \$8,456,000 between the two evaluation dates. However, actual development was approximately \$8,700,468; or about \$244,468 more than expected, primarily due to the three of the five most recent 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	\$23,817,000	\$24,147,000	\$330,000
1997-98	3,602,000	3,597,000	(5,000)
1998-99	3,300,031	3,300,031	0
1999-00	3,066,000	3,010,000	(56,000)
2000-01	4,204,000	4,050,000	(154,000)
2001-02	2,478,000	2,455,000	(23,000)
2002-03	3,871,000	3,871,000	0
2003-04	3,400,000	3,465,000	65,000
2004-05	2,861,000	2,841,000	(20,000)
2005-06	3,307,000	3,310,000	3,000
2006-07	3,829,000	3,833,000	4,000
2007-08	4,588,000	4,713,000	125,000
2008-09	5,521,000	5,337,000	(184,000)
2009-10	7,691,000	7,533,000	(158,000)
2010-11	6,595,000	6,770,000	175,000
2011-12	6,347,000	6,105,000	(242,000)
2012-13	7,015,000	6,291,000	(724,000)
2013-14	7,390,000	7,544,000	154,000
2014-15	7,051,000	7,261,000	210,000
2015-16	7,371,000	6,860,000	(511,000)
2016-17	8,147,000	8,840,000	693,000
2017-18	8,338,000	8,261,000	(77,000)
Total	\$133,789,031	\$133,394,031	(\$395,000)

As shown, overall we have decreased our estimated ultimates by \$395,000 since our prior report. This decrease can be tied to lower than anticipated loss development for most 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, 2017 to be \$28,715,000 at the discounted, expected level. Our current estimate as of June 30, 2018, is \$29,551,000, 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, 2017	Current Report at June 30, 2018	Change
(A) Case Reserves:	\$14,320,000	\$14,928,000	\$608,000
(B) IBNR Reserves:	17,378,000	17,678,000	300,000
(C) Claims Administration Reserves:	1,664,000	1,712,000	48,000
(D) Total Reserves:	\$33,362,000	\$34,318,000	\$956,000
(E) Offset for Investment Income:	(4,647,000)	(4,767,000)	(120,000)
(F) Total Outstanding Claim Liabilities:	\$28,715,000	\$29,551,000	\$836,000

As shown, our estimate of outstanding claims liabilities at the discounted, expected level has increased between June 30, 2017 and June 30, 2018 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 for recent years and the lower paid development as previously discussed. Reserves for future claims administration expenses have increased, resulting in a \$956,000 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 \$836,000 in our estimate of outstanding claim liabilities for loss and LAE.

At the time of the prior report, available assets were estimated to be \$34,543,000 as of June 30, 2017, which corresponded to the then-estimated discounted liability for outstanding claims between the 85% and 90% confidence levels. Available assets are currently estimated to be \$36,525,000 as of June 30, 2018, which corresponds to the currently estimated liability for outstanding claims again between the 85% and 90% confidence levels. It can be summarized as follows:

	Funding Margin		
	Prior Report at June 30, 2017	Current Report at June 30, 2018	Change
(A) Outstanding Liability at the Discounted Expected Level:	\$28,715,000	\$29,551,000	\$836,000
(B) Estimated Assets At June 30:	34,543,000	36,525,000	1,982,000
(C) Surplus/(Deficit):	\$5,828,000	\$6,974,000	\$1,146,000

As you can see, our estimate of the program's funding margin at the discounted, expected level has increased by \$1,146,000 between June 30, 2017 (as previously estimated) and June 30, 2018 (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 2017-18 year was \$12,313,000 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 2018-19 year is \$12,823,000 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 2017-18 SIR = \$500,000	Current Report 2018-19 SIR = \$500,000	Change
(A) Ultimate Loss and ALAE:	\$8,338,000	\$8,492,000	\$154,000
(B) Offset for Investment Income:	(\$974,000)	(\$1,009,000)	(\$35,000)
(C) Recommended Loss and ALAE Funding:	7,364,000	7,483,000	119,000
(D) 80% Risk Margin:	1,429,000	1,437,000	8,000
(E) Non-Claim Related Expenses:	\$3,520,000	\$3,903,000	\$383,000
(F) Total Funding:	\$12,313,000	12,823,000	510,000
(G) Funding per \$100 of Payroll:	4.524	4.66	\$0.14

As you can see, our funding recommendations at the discounted, expected level have increased between 2017-18 and 2018-19, as shown in our prior and current reports respectively.

Our estimates of ultimate loss and ALAE have increased by \$154,000. This is driven primarily by greater than expected claims development in recent years. Investment income is expected to be higher, resulting in an overall increase of \$119,000 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 \$510,000 in our annual funding estimate for loss and LAE. On a rate basis, this is a 3.0% increase.

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 2017-18 and 2018-19 (See Appendix J).
- We estimated the June 30, 2018 asset balance by beginning with the June 30, 2017 asset balance, and adjusting for anticipated revenue and expense for 2017-18 (see Appendix K).
- We received loss data evaluated as of October 31, 2017 and January 31, 2018 (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 2017-18 will be \$275,199,536 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 1.5% per year. We have assumed that claim severity increases at 2.5% per year, and that claim frequency decreases at 1.0% 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 \$36,525,000 as of June 30, 2018 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 Guidelines for Outstanding Liabilities at
June 30, 2018

(A) Estimated Ultimate Losses Incurred through 6/30/18: (From Appendix F)						\$133,394,000
(B) Estimated Paid Losses through 6/30/18: (From Appendix F)						100,788,000
(C) Estimated Liability for Claims Outstanding at 6/30/18: (From Appendix F)						<u>\$32,606,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 6/30/18: (Based on a factor of 5.25% of (C))						1,712,000
(E) Total Outstanding Liability for Claims at 6/30/18: ((C) + (D))						<u>\$34,318,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.5%.): (Appendix H, Page 1, (H))						0.861
(G) Discounted Outstanding Liability for Claims at 6/30/18: ((E) x (F))						<u>\$29,551,000</u>
		Marginally Acceptable		Recommended		Conservative
Confidence Level of Adequacy:		70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Appendix I)		1.084	1.117	1.155	1.202	1.263
(I) Margin for Adverse Experience: ((G) x [(H) - 1])		2,482,000	3,457,000	4,580,000	5,969,000	7,772,000
(J) Total Required Assets at 6/30/18: ((G) + (I))		<u>\$32,033,000</u>	<u>\$33,008,000</u>	<u>\$34,131,000</u>	<u>\$35,520,000</u>	<u>\$37,323,000</u>
(K) Estimated Total Assets at 6/30/18: (From Appendix K)		\$36,525,000	\$36,525,000	\$36,525,000	\$36,525,000	\$36,525,000
(L) Indicated Funding Redundancy/ (Deficiency): ((K) - (J))		<u>\$4,492,000</u>	<u>\$3,517,000</u>	<u>\$2,394,000</u>	<u>\$1,005,000</u>	<u>(\$798,000)</u>

Workers' Compensation - Workers' Compensation
Funding Options for Program Year 2018-2019 (SIR = \$500,000)
One-Year Funding Plan

	Dollar Amount	Payroll Rate			
(A) Estimated Ultimate Losses Incurred in Accident Year 2018-2019: (From Appendix F)	\$8,492,000	\$3.086			
(B) Estimated Claims Administration Fees Incurred in Accident Year 2018-2019: (Included in Row (I))	0	0.000			
(C) Total Claims Costs Incurred in Accident Year 2018-2019: ((A) + (B))	<u>\$8,492,000</u>	<u>\$3.086</u>			
(D) Loss Discount Factor (Based on a Discount Rate of 2.5%.): (Appendix H, Page 2, (F))	0.881				
(E) Discounted Total Claims Costs Incurred in Accident Year 2018-2019: ((C) x (D))	<u>\$7,483,000</u>	<u>\$2.719</u>			
	<u>Marginally Acceptable</u>		<u>Recommended</u>		<u>Conservative</u>
	70%	75%	80%	85%	90%
(F) Confidence Level Factor: (From Appendix I)	1.103	1.144	1.192	1.250	1.327
(G) Margin for Adverse Experience: ((E) x [(F) - 1])	771,000	1,078,000	1,437,000	1,871,000	2,447,000
(H) Recommended Funding in 2018-2019 for Claims Costs and Other Expenses: ((E) + (G))	<u>\$8,254,000</u>	<u>\$8,561,000</u>	<u>\$8,920,000</u>	<u>\$9,354,000</u>	<u>\$9,930,000</u>
(I) Other Budgeted Program Expenses: (Provided by the Authority)	3,903,000	3,903,000	3,903,000	3,903,000	3,903,000
(J) Recommended Funding in 2018-2019 for Claims Costs, Other Expenses, and Non Claims Related Expenses:	<u>\$12,157,000</u>	<u>\$12,464,000</u>	<u>\$12,823,000</u>	<u>\$13,257,000</u>	<u>\$13,833,000</u>
(K) Rate per \$100 of Payroll: ((K) / \$2,751,995)	\$4.418	\$4.529	\$4.660	\$4.817	\$5.027
(L) Prior Rate at 80% Confidence	\$4.524	\$4.394	\$4.524	\$4.681	\$4.891
(M) Indicated Change in Rate	-2.3%	3.1%	3.0%	2.9%	2.8%

Payroll rates are per hundred dollars of 2017-2018 payroll of \$275,199,500.

Workers' Compensation - Workers' Compensation

Funding Options for Program Year 2018-2019 (SIR = \$500,000)
One-Year Funding Plan at the 80% Confidence Level

	Dollar Amount	Payroll Rate
(A) Estimated Ultimate Losses Incurred in Accident Year 2018-2019: (From Appendix F)	\$8,492,000	\$3.086
(B) Loss Discount Factor (Based on a Discount Rate of 2.5%): (Appendix H, Page 2, (F))	0.881	
(C) Discounted Total Claims Costs Incurred in Accident Year 2018-2019: ((A) x (B))	<u>\$7,483,000</u>	<u>\$2.719</u>
(D) 80% Confidence Level Factor: (From Appendix I)	1.192	1.192
(E) Margin for Adverse Experience: ((C) x [(D) - 1])	1,437,000	\$0.522
(F) Recommended Funding in 2018-2019 for Claims Costs and Other Expenses ((C) + (E))	<u>\$8,920,000</u>	<u>\$3.241</u>
(G) Other Budgeted Program Expenses: (Provided by the Authority)		
Excess Premium	\$1,713,000	\$0.622
Claims Administration	373,000	0.136
Department Personnel	812,000	0.295
DOC Expense Paid	202,000	0.073
G&A Expense Paid	779,000	0.283
Capital Equipment	24,000	0.009
Total	<u>\$3,903,000</u>	<u>\$1.418</u>
(H) Recommended Funding in 2018-2019 for Claims Costs, Other Expenses, and Non Claims Related Expenses: ((F) + (G))	<u>\$12,823,000</u>	
(I) Rate per \$100 of Payroll: ((H) / \$2,751,995)	\$4.660	
(J) Prior Rate (at 80% Confidence Level)	\$4.524	
(K) Indicated Change in Rate	3.0%	

Payroll rates are per hundred dollars of 2017-2018 payroll of \$275,199,500.

Workers' Compensation - Workers' Compensation

IBNR as of 6/30/18 at Expected Claims Level

Accident Year	Estimated Ultimate (A)	Reported as of 1/31/18 (B)	Estimated IBNR as of 1/31/18 (C)	Estimated Percent of IBNR Reported Between 2/1/18 and 6/30/18 (D)	Estimated IBNR Reported (E)	Estimated IBNR as of 6/30/18 (F)
Prior	\$24,147,000	\$24,002,108	\$144,892	0.9%	\$1,000	\$143,892
1997-1998	3,597,000	3,571,508	25,492	0.0%	0	25,492
1998-1999	3,300,031	3,300,031	0	11.0%	0	0
1999-2000	3,010,000	2,974,631	35,369	8.2%	3,000	32,369
2000-2001	4,050,000	3,989,881	60,119	13.2%	8,000	52,119
2001-2002	2,455,000	2,406,856	48,144	9.8%	5,000	43,144
2002-2003	3,871,000	3,772,754	98,246	11.3%	11,000	87,246
2003-2004	3,465,000	3,347,740	117,260	11.1%	13,000	104,260
2004-2005	2,841,000	2,721,420	119,580	8.7%	10,000	109,580
2005-2006	3,310,000	3,139,969	170,031	7.1%	12,000	158,031
2006-2007	3,833,000	3,598,681	234,319	7.3%	17,000	217,319
2007-2008	4,713,000	4,371,905	341,095	7.2%	25,000	316,095
2008-2009	5,337,000	4,878,586	458,414	6.9%	32,000	426,414
2009-2010	7,533,000	6,761,894	771,106	7.1%	55,000	716,106
2010-2011	6,770,000	5,953,879	816,121	7.1%	58,000	758,121
2011-2012	6,105,000	5,240,335	864,665	6.8%	59,000	805,665
2012-2013	6,291,000	5,126,921	1,164,079	6.8%	79,000	1,085,079
2013-2014	7,544,000	6,435,438	1,108,562	8.6%	95,000	1,013,562
2014-2015	7,261,000	5,867,076	1,393,924	8.7%	121,000	1,272,924
2015-2016	6,860,000	4,538,671	2,321,329	18.1%	420,000	1,901,329
2016-2017	8,840,000	5,474,159	3,365,841	18.4%	619,000	2,746,841
2017-2018	8,261,000	1,191,664	3,627,000	19.9%	1,407,000	5,662,336
Totals	\$133,394,031	\$112,666,107	\$17,285,588		\$3,050,000	\$17,677,924

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 2/1/18 and 6/30/18. 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 6/30/18. 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	\$24,146,121	\$23,897,678			\$23,985,472	\$24,147,000	
1997-1998	3,596,509	3,683,789	3,592,836	3,655,222	3,047,385	3,597,000	
1998-1999	3,329,731	3,498,033	3,326,534	3,467,885	2,944,800	3,300,031	
1999-2000	3,010,327	3,051,446	3,016,468	3,081,103	3,485,284	3,010,000	
2000-2001	4,049,729	4,055,513	4,042,726	4,015,728	3,521,848	4,050,000	
2001-2002	2,454,993	2,483,573	2,459,540	2,496,064	2,634,329	2,455,000	
2002-2003	3,870,846	3,989,253	3,876,708	4,005,849	4,159,680	3,871,000	
2003-2004	3,464,911	3,511,213	3,471,617	3,524,017	3,643,695	3,465,000	
2004-2005	2,841,162	2,796,758	2,827,028	2,761,507	2,515,308	2,841,000	
2005-2006	3,309,527	3,245,555	3,299,991	3,232,192	3,138,422	3,310,000	
2006-2007	3,832,595	4,016,467	3,831,456	3,985,047	3,815,916	3,833,000	
2007-2008	4,712,914	4,822,967	4,696,219	4,772,432	4,505,204	4,713,000	
2008-2009	5,337,173	5,623,817	5,257,412	5,401,382	4,405,776	5,337,000	
2009-2010	7,532,750	7,813,065	7,416,758	7,524,918	6,422,118	7,533,000	
2010-2011	6,769,560	7,085,592	6,656,349	6,793,835	5,854,752	6,770,000	
2011-2012	6,104,990	6,538,722	6,115,557	6,433,176	6,163,768	6,105,000	
2012-2013	6,147,178	7,065,444	6,149,601	6,774,589	6,096,139	6,291,000	
2013-2014	8,031,427	8,060,455	7,690,679	7,396,983	6,101,700	7,544,000	
2014-2015	7,756,274	7,710,572	7,523,673	7,290,977	6,707,520	7,261,000	
2015-2016	6,817,084	5,746,030	6,903,843	6,523,503	6,893,433	6,860,000	
2016-2017	11,249,397	8,534,804	9,430,805	7,915,034	8,132,320	8,840,000	
Totals						\$125,133,031	
						Projected Losses for the Year 2017-2018 (G)	\$8,261,000
						Projected Losses for the Year 2018-2019 (H)	\$8,492,000

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	\$20,710,239	\$20,621,527			\$20,709,464	\$20,710,000
1997-1998	2,540,146	2,530,723	2,540,238	2,531,347	2,541,000	2,541,000
1998-1999	2,459,007	2,485,868	2,459,010	2,485,876	2,441,880	2,441,914
1999-2000	2,873,243	2,816,120	2,873,428	2,818,720	2,872,820	2,873,000
2000-2001	2,885,977	2,860,243	2,886,270	2,859,927	2,885,883	2,886,000
2001-2002	2,144,508	2,129,859	2,144,823	2,130,038	2,145,005	2,145,000
2002-2003	3,316,469	3,286,522	3,317,089	3,288,094	3,315,900	3,316,000
2003-2004	2,817,791	2,759,624	2,818,505	2,760,572	2,817,964	2,818,000
2004-2005	1,930,387	1,888,125	1,931,059	1,889,796	1,929,978	1,930,000
2005-2006	2,388,672	2,369,204	2,389,801	2,371,037	2,389,065	2,389,000
2006-2007	2,881,381	2,912,622	2,880,262	2,911,163	2,881,185	2,881,000
2007-2008	3,374,456	3,432,188	3,373,655	3,428,208	3,374,096	3,374,000
2008-2009	3,273,460	3,269,927	3,273,432	3,270,053	3,272,922	3,273,000
2009-2010	4,733,087	4,657,804	4,734,259	4,661,280	4,732,948	4,733,000
2010-2011	4,278,832	4,291,356	4,277,527	4,289,175	4,279,008	4,279,000
2011-2012	4,467,948	4,369,617	4,469,248	4,380,524	4,468,022	4,468,000
2012-2013	4,349,942	4,569,217	4,355,119	4,549,271	4,382,854	4,405,000
2013-2014	5,012,824	4,849,057	4,981,543	4,783,569	4,351,380	4,972,000
2014-2015	4,692,039	4,611,529	4,699,747	4,663,256	4,743,340	4,682,000
2015-2016	3,888,026	3,890,101	4,054,907	4,340,896	4,834,494	4,085,000
2016-2017	6,754,654	5,819,446	6,263,272	5,521,724	5,656,266	5,892,000
Totals						\$91,093,914
						Projected Losses for the Year 2017-2018 (G)
						\$5,697,000
						Projected Losses for the Year 2018-2019 (H)
						\$5,809,000

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)
1997-1998	2,541,000	1.450	3,684,450	1,339,868	2.750
1998-1999	2,441,914	1.280	3,125,650	1,376,725	2.270
1999-2000	2,873,000	1.139	3,272,347	1,418,394	2.307
2000-2001	2,886,000	1.055	3,044,730	1,537,092	1.981
2001-2002	2,145,000	1.044	2,239,380	1,608,166	1.393
2002-2003	3,316,000	1.084	3,594,544	1,983,847	1.812
2003-2004	2,818,000	1.323	3,728,214	2,279,997	1.635
2004-2005	1,930,000	1.683	3,248,190	2,339,047	1.389
2005-2006	2,389,000	1.798	4,295,422	2,665,841	1.611
2006-2007	2,881,000	1.678	4,834,318	2,805,866	1.723
2007-2008	3,374,000	1.536	5,182,464	3,053,804	1.697
2008-2009	3,273,000	1.412	4,621,476	3,108,645	1.487
2009-2010	4,733,000	1.275	6,034,575	3,057,257	1.974
2010-2011	4,279,000	1.213	5,190,427	2,837,573	1.829
2011-2012	4,468,000	1.208	5,397,344	2,686,806	2.009
2012-2013	4,405,000	1.200	5,286,000	2,568,039	2.058
2013-2014	4,972,000	1.173	5,832,156	2,548,584	2.288
2014-2015	4,682,000	1.121	5,248,522	2,599,285	2.019
2015-2016	4,085,000	1.088	4,444,480	2,610,156	1.703
2016-2017	5,892,000	1.046	6,163,032	2,710,988	2.273
Totals	\$70,383,914		\$88,467,721	47,135,980	\$1.877
12/13-16/17	24,036,000		26,974,190	13,037,052	2.069
13/14-16/17	19,631,000		21,688,190	10,469,013	2.072
				(F) Selected Limited Rate:	\$2.070
				Prior:	\$2.100
Program Year:		2017-2018	2018-2019		
(G) Factor to SIR:		1.450	1.462		
(H) Trend Factor:		1.000	1.015		
(I) Program Rate:		\$3.002	\$3.072		
(J) Trended Payroll (\$00):		2,751,995	2,764,269		
(K) Projected Program Losses:		8,261,000	8,492,000		
(L) Projected ULAE:		0	0		
(M) Projected Loss and ULAE:		\$8,261,000	\$8,492,000		

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 1/31/18 (B)	Reported Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Reported Losses of 1/31/18 (E)	Reported Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$20,607,203	1.005	\$20,710,239	\$24,002,108	1.006	\$24,146,121
1997-1998	2,524,996	1.006	2,540,146	3,571,508	1.007	3,596,509
1998-1999	2,441,914	1.007	2,459,007	3,300,031	1.009	3,329,731
1999-2000	2,850,439	1.008	2,873,243	2,974,631	1.012	3,010,327
2000-2001	2,857,403	1.010	2,885,977	3,989,881	1.015	4,049,729
2001-2002	2,119,079	1.012	2,144,508	2,406,856	1.020	2,454,993
2002-2003	3,270,679	1.014	3,316,469	3,772,754	1.026	3,870,846
2003-2004	2,773,416	1.016	2,817,791	3,347,740	1.035	3,464,911
2004-2005	1,894,394	1.019	1,930,387	2,721,420	1.044	2,841,162
2005-2006	2,337,252	1.022	2,388,672	3,139,969	1.054	3,309,527
2006-2007	2,811,103	1.025	2,881,381	3,598,681	1.065	3,832,595
2007-2008	3,282,545	1.028	3,374,456	4,371,905	1.078	4,712,914
2008-2009	3,171,957	1.032	3,273,460	4,878,586	1.094	5,337,173
2009-2010	4,568,617	1.036	4,733,087	6,761,894	1.114	7,532,750
2010-2011	4,106,365	1.042	4,278,832	5,953,879	1.137	6,769,560
2011-2012	4,259,245	1.049	4,467,948	5,240,335	1.165	6,104,990
2012-2013	4,111,476	1.058	4,349,942	5,126,921	1.199	6,147,178
2013-2014	4,693,655	1.068	5,012,824	6,435,438	1.248	8,031,427
2014-2015	4,320,478	1.086	4,692,039	5,867,076	1.322	7,756,274
2015-2016	3,294,937	1.180	3,888,026	4,538,671	1.502	6,817,084
2016-2017	4,374,776	1.544	6,754,654	5,474,159	2.055	11,249,397
Totals	\$86,671,929		\$91,773,088	\$111,474,443		\$128,365,198

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 1/31/18.
- (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 1/31/18.
- (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
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	3,306,331
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	3,164,983	
2009-2010	2,602,432	4,053,760	4,429,533	4,477,022	4,494,974	4,609,502	4,553,153	4,546,822		
2010-2011	2,177,724	3,372,980	4,085,603	4,032,840	4,121,809	4,146,894	4,092,088			
2011-2012	2,237,306	3,866,321	4,575,307	4,563,313	4,364,372	4,309,630				
2012-2013	2,524,608	3,910,912	4,509,109	4,473,393	4,164,864					
2013-2014	2,243,390	3,662,902	4,672,697	4,745,090						
2014-2015	2,324,025	3,623,639	4,253,968							
2015-2016	2,305,550	3,289,103								
2016-2017	3,232,999									

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
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	1.006
2007-2008	1.350	1.131	1.044	1.007	1.018	1.004	0.989	0.978	1.024	
2008-2009	1.403	1.196	1.038	1.014	1.013	1.021	0.962	0.992		
2009-2010	1.558	1.093	1.011	1.004	1.025	0.988	0.999			
2010-2011	1.549	1.211	0.987	1.022	1.006	0.987				
2011-2012	1.728	1.183	0.997	0.956	0.987					
2012-2013	1.549	1.153	0.992	0.931						
2013-2014	1.633	1.276	1.015							
2014-2015	1.559	1.174								
2015-2016	1.427									

	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	1.528	1.165	1.024	0.990	0.989	0.994	1.007	1.001	1.003	1.001
Dollar-weighted										
Averages										
3-yr	1.539	1.200	1.002	0.968	1.007	0.996	0.985	0.993	1.010	1.009
4-yr	1.542	1.196	0.998	0.977	1.008	0.998	0.989	0.993	1.012	1.013
CSAC										
Factors	1.470	1.120	1.025	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Prior	1.597	1.190	1.025	1.011	1.009	1.008	1.007	1.005	1.004	1.003
Selected	1.574	1.188	1.025	1.011	1.009	1.008	1.007	1.005	1.004	1.003
Cumulated	2.061	1.309	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
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	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	2,524,193	
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	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	2,840,427			
2000-2001	2,835,624	2,863,397	2,845,041	2,843,750	2,858,324	2,851,367	2,868,196				
2001-2002	2,073,809	2,095,122	2,100,381	2,100,930	2,087,693	2,119,079					
2002-2003	3,148,384	3,166,634	3,236,611	3,236,611	3,248,679						
2003-2004	2,714,758	2,731,291	2,721,192	2,773,416							
2004-2005	1,892,804	1,894,394	1,894,394								
2005-2006	2,322,143	2,321,752									
2006-2007	2,787,715										
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											

	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
1996-1997		0.997	1.014	1.005	1.004	1.008	1.000	0.998	1.000	1.000	
1997-1998	0.997	1.007	1.000	1.000	1.001	1.003	1.016	1.005	1.000		
1998-1999	1.002	0.998	1.003	1.007	0.999	0.986	0.999	1.000			
1999-2000	0.994	1.003	1.016	1.009	0.996	1.002	1.011				
2000-2001	1.010	0.994	1.000	1.005	0.998	1.006					
2001-2002	1.010	1.003	1.000	0.994	1.015						
2002-2003	1.006	1.022	1.000	1.004							
2003-2004	1.006	0.996	1.019								
2004-2005	1.001	1.000									
2005-2006	1.000										
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
Average Dollar-weighted Averages	1.003	1.002	1.007	1.003	1.002	1.001	1.007	1.001	1.000	1.000	
3-yr	1.003	1.008	1.007	1.002	1.002	0.998	1.009	1.001			
4-yr	1.004	1.007	1.005	1.004	1.001	0.999	1.007				
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
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	1,137,897
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	1,711,000	
2009-2010	109,738	958,571	1,846,507	2,104,489	2,106,983	2,027,198	2,153,320	2,164,285		
2010-2011	26,296	147,111	710,579	882,450	984,740	1,517,245	1,711,916			
2011-2012	12,432	301,624	693,432	901,461	978,919	997,234				
2012-2013	23,515	555,651	1,179,714	1,402,266	1,124,921					
2013-2014	410,909	740,759	1,445,494	1,686,044						
2014-2015	11,126	500,392	1,099,634							
2015-2016	465,565	1,268,794								
2016-2017	510,404									

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
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	1.047
2007-2008	2.653	2.422	3.306	1.107	1.602	1.068	0.961	0.896	1.294	
2008-2009	1.324	1.057	1.209	1.113	1.067	1.043	1.001	0.986		
2009-2010	8.735	1.926	1.140	1.001	0.962	1.062	1.005			
2010-2011	5.595	4.830	1.242	1.116	1.541	1.128				
2011-2012	24.263	2.299	1.300	1.086	1.019					
2012-2013	23.630	2.123	1.189	0.802						
2013-2014	1.803	1.951	1.166							
2014-2015	44.975	2.198								
2015-2016	2.725									

	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	12.856	2.251	1.649	1.103	1.155	1.033	1.009	1.067	1.080	1.023
Dollar-weighted										
Averages										
3-yr	2.828	2.073	1.202	0.969	1.116	1.075	0.994	0.968	1.175	1.113
4-yr	3.365	2.106	1.209	0.982	1.102	1.074	0.993	1.006	1.136	1.090
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
1996-1997		486,762	486,762	523,587	524,505	533,206	536,035	644,690	633,076	622,694	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	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	1,308,116		
1999-2000	287,171	287,171	287,171	287,171	291,174	213,674	213,674	213,674			
2000-2001	1,284,376	1,284,376	1,401,238	1,512,460	1,512,460	1,620,209	1,428,676				
2001-2002	189,161	195,282	195,282	287,579	287,579	287,579					
2002-2003	495,136	495,136	495,136	498,434	508,346						
2003-2004	514,076	523,685	531,955	574,324							
2004-2005	691,610	699,021	827,027								
2005-2006	770,723	762,651									
2006-2007	776,458										
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											
	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
1996-1997		1.000	1.076	1.002	1.017	1.005	1.203	0.982	0.984	1.000	
1997-1998	0.969	1.087	0.965	0.989	1.131	1.014	0.991	1.000	1.000		
1998-1999	1.000	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	1.000				
2000-2001	1.000	1.091	1.079	1.000	1.071	0.882					
2001-2002	1.032	1.000	1.473	1.000	1.000						
2002-2003	1.000	1.000	1.007	1.020							
2003-2004	1.019	1.016	1.080								
2004-2005	1.011	1.183									
2005-2006	0.990										
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
Average Dollar-weighted Averages	1.002	1.042	1.085	1.004	0.992	0.980	1.049	0.994	0.992	1.000	
3-yr	1.005	1.079	1.113	1.004	1.014	0.939	0.996	0.996			
4-yr	1.004	1.071	1.095	1.005	1.009	0.962	1.028				
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	1.030	1.030	1.025	1.025	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 1/31/18 (B)	Paid Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Paid Losses of 1/31/18 (E)	Paid Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$20,397,158	1.011	\$20,621,527	\$23,111,874	1.034	\$23,897,678
1997-1998	2,495,782	1.014	2,530,723	3,515,066	1.048	3,683,789
1998-1999	2,441,914	1.018	2,485,868	3,300,031	1.060	3,498,033
1999-2000	2,755,499	1.022	2,816,120	2,854,486	1.069	3,051,446
2000-2001	2,787,761	1.026	2,860,243	3,762,071	1.078	4,055,513
2001-2002	2,067,824	1.030	2,129,859	2,282,696	1.088	2,483,573
2002-2003	3,175,384	1.035	3,286,522	3,623,300	1.101	3,989,253
2003-2004	2,653,485	1.040	2,759,624	3,137,813	1.119	3,511,213
2004-2005	1,806,818	1.045	1,888,125	2,459,770	1.137	2,796,758
2005-2006	2,256,385	1.050	2,369,204	2,814,879	1.153	3,245,555
2006-2007	2,755,555	1.057	2,912,622	3,424,098	1.173	4,016,467
2007-2008	3,225,741	1.064	3,432,188	4,029,212	1.197	4,822,967
2008-2009	3,047,462	1.073	3,269,927	4,590,871	1.225	5,623,817
2009-2010	4,296,867	1.084	4,657,804	6,195,928	1.261	7,813,065
2010-2011	3,908,339	1.098	4,291,356	5,400,604	1.312	7,085,592
2011-2012	3,897,963	1.121	4,369,617	4,738,204	1.380	6,538,722
2012-2013	3,942,379	1.159	4,569,217	4,803,157	1.471	7,065,444
2013-2014	3,964,887	1.223	4,849,057	5,018,963	1.606	8,060,455
2014-2015	3,395,824	1.358	4,611,529	4,188,252	1.841	7,710,572
2015-2016	2,269,604	1.714	3,890,101	2,409,237	2.385	5,746,030
2016-2017	1,986,159	2.930	5,819,446	2,061,049	4.141	8,534,804
Totals	\$79,528,790		\$90,420,679	\$97,721,561		\$127,230,746

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 1/31/18.
- (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 1/31/18.
- (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	<u>Limited 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
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	3,221,684
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	3,029,659	
2009-2010	733,213	2,021,035	2,929,847	3,429,600	3,722,672	3,939,986	4,144,551	4,254,971		
2010-2011	717,578	1,851,382	2,847,009	3,258,339	3,446,942	3,666,267	3,848,021			
2011-2012	792,545	2,113,114	3,082,130	3,582,660	3,768,252	3,831,285				
2012-2013	805,718	2,348,117	3,123,194	3,685,449	3,861,213					
2013-2014	679,124	2,064,510	3,020,560	3,695,251						
2014-2015	793,301	1,960,348	3,001,051							
2015-2016	700,558	1,696,714								
2016-2017	1,062,343									

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
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	1.002
2007-2008	2.761	1.399	1.235	1.081	1.041	1.023	1.017	1.005	1.029	
2008-2009	2.541	1.331	1.172	1.091	1.038	1.036	1.012	1.012		
2009-2010	2.756	1.450	1.171	1.085	1.058	1.052	1.027			
2010-2011	2.580	1.538	1.144	1.058	1.064	1.050				
2011-2012	2.666	1.459	1.162	1.052	1.017					
2012-2013	2.914	1.330	1.180	1.048						
2013-2014	3.040	1.463	1.223							
2014-2015	2.471	1.531								
2015-2016	2.422									

	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	2.683	1.434	1.186	1.063	1.042	1.032	1.020	1.018	1.012	1.008
Dollar-weighted										
Averages										
3-yr	2.633	1.435	1.188	1.052	1.046	1.047	1.019	1.022	1.015	1.011
4-yr	2.709	1.441	1.178	1.060	1.044	1.041	1.018	1.025	1.014	1.010
CSAC										
Factors	2.500	1.400	1.170	1.090	1.050	1.033	1.020	1.015	1.012	1.010
Prior	2.799	1.432	1.176	1.073	1.045	1.025	1.018	1.010	1.009	1.008
Selected	2.781	1.434	1.177	1.071	1.045	1.025	1.018	1.010	1.009	1.008
Cumulated	5.974	2.148	1.498	1.273	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
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	2,130,438
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	2,495,116	
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	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	2,745,205			
2000-2001	2,735,479	2,769,470	2,771,681	2,777,286	2,782,711	2,783,907	2,786,168				
2001-2002	1,986,754	2,013,602	2,035,187	2,040,694	2,065,439	2,067,297					
2002-2003	3,082,679	3,091,063	3,104,747	3,105,822	3,116,338						
2003-2004	2,570,920	2,638,576	2,645,119	2,653,021							
2004-2005	1,752,928	1,789,302	1,799,773								
2005-2006	2,253,154	2,255,469									
2006-2007	2,755,514										
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											

	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
1996-1997		1.000	1.005	1.005	1.001	1.004	1.000	1.003	1.000	1.000	
1997-1998	1.002	1.000	1.001	1.001	1.001	1.003	1.016	1.004	1.002		
1998-1999	1.002	1.005	1.007	1.002	1.002	1.007	1.000	1.000			
1999-2000	1.004	1.004	1.041	1.004	1.004	1.001	1.005				
2000-2001	1.012	1.001	1.002	1.002	1.000	1.001					
2001-2002	1.014	1.011	1.003	1.012	1.001						
2002-2003	1.003	1.004	1.000	1.003							
2003-2004	1.026	1.002	1.003								
2004-2005	1.021	1.006									
2005-2006	1.001										
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
Average Dollar-weighted Averages	1.009	1.004	1.008	1.004	1.002	1.003	1.005	1.002	1.001	1.000	
3-yr	1.016	1.004	1.002	1.005	1.002	1.003	1.007	1.002			
4-yr	1.012	1.005	1.002	1.005	1.002	1.003	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
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	702,777
2008-2009		409,752	520,694	775,648	967,526	1,124,067	1,363,726	1,432,732	1,532,287	
2009-2010		75,514	783,857	1,175,394	1,572,595	1,653,273	1,786,930	1,864,737		
2010-2011			131,557	277,293	431,600	796,249	1,295,679			
2011-2012		18,227	242,003	492,976	734,362	837,218				
2012-2013		61,835	208,508	747,704	794,300					
2013-2014		349,619	551,822	957,449						
2014-2015		116,525	435,375							
2015-2016										
2016-2017	20,698									
	<u>Paid Loss Development Factors:</u>									
	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
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	1.160
2007-2008			11.373	1.333	1.556	1.165	1.072	1.054	1.111	
2008-2009		1.271	1.490	1.247	1.162	1.213	1.051	1.069		
2009-2010		10.380	1.500	1.338	1.051	1.081	1.044			
2010-2011			2.108	1.556	1.845	1.627				
2011-2012		13.277	2.037	1.490	1.140					
2012-2013		3.372	3.586	1.062						
2013-2014		1.578	1.735							
2014-2015		3.736								
2015-2016										
	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		5.120	3.039	1.628	1.328	1.213	1.074	1.079	1.086	1.079
3-yr		2.265	2.193	1.291	1.200	1.244	1.050	1.066	1.072	1.140
4-yr		2.632	2.183	1.312	1.190	1.235	1.046	1.090	1.077	1.108
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

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
1996-1997		357,523	362,830	389,886	413,678	429,177	436,473	533,527	622,694	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	1,243,119	
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	1,308,116		
1999-2000	51,312	51,312	51,312	58,525	68,548	79,372	90,911	96,377			
2000-2001	692,043	740,551	813,551	858,217	877,336	924,697	959,522				
2001-2002	172,006	184,612	185,887	199,550	214,453	214,674					
2002-2003	421,025	427,009	433,081	440,088	443,539						
2003-2004	474,720	484,329	484,329	484,329							
2004-2005	626,133	634,932	648,198								
2005-2006	507,599	547,090									
2006-2007	652,336										
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											

	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
1996-1997		1.015	1.075	1.061	1.037	1.017	1.222	1.167	1.000	1.000	
1997-1998	1.019	1.005	1.006	1.065	1.007	1.014	1.016	1.022	1.032		
1998-1999	1.024	1.008	1.011	1.000	1.000	1.000	1.000	1.000			
1999-2000	1.000	1.000	1.141	1.171	1.158	1.145	1.060				
2000-2001	1.070	1.099	1.055	1.022	1.054	1.038					
2001-2002	1.073	1.007	1.074	1.075	1.001						
2002-2003	1.014	1.014	1.016	1.008							
2003-2004	1.020	1.000	1.000								
2004-2005	1.014	1.021									
2005-2006	1.078										
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
Average Dollar-weighted Averages	1.035	1.019	1.047	1.057	1.043	1.043	1.075	1.063	1.016	1.000	
3-yr	1.036	1.013	1.019	1.025	1.050	1.020	1.009	1.038			
4-yr	1.031	1.012	1.034	1.031	1.024	1.018	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 1/31/18 (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)
1997-1998	1,339,868	3,571,508	1.007	0.007	2.274	21,328	3,592,836
1998-1999	1,376,725	3,300,031	1.009	0.009	2.139	26,503	3,326,534
1999-2000	1,418,394	2,974,631	1.012	0.012	2.458	41,837	3,016,468
2000-2001	1,537,092	3,989,881	1.015	0.015	2.292	52,845	4,042,726
2001-2002	1,608,166	2,406,856	1.020	0.020	1.638	52,684	2,459,540
2002-2003	1,983,847	3,772,754	1.026	0.025	2.096	103,954	3,876,708
2003-2004	2,279,997	3,347,740	1.035	0.034	1.598	123,877	3,471,617
2004-2005	2,339,047	2,721,420	1.044	0.042	1.075	105,608	2,827,028
2005-2006	2,665,841	3,139,969	1.054	0.051	1.177	160,022	3,299,991
2006-2007	2,805,866	3,598,681	1.065	0.061	1.360	232,775	3,831,456
2007-2008	3,053,804	4,371,905	1.078	0.072	1.475	324,314	4,696,219
2008-2009	3,108,645	4,878,586	1.094	0.086	1.417	378,826	5,257,412
2009-2010	3,057,257	6,761,894	1.114	0.102	2.100	654,864	7,416,758
2010-2011	2,837,573	5,953,879	1.137	0.120	2.063	702,470	6,656,349
2011-2012	2,686,806	5,240,335	1.165	0.142	2.294	875,222	6,115,557
2012-2013	2,568,039	5,126,921	1.199	0.166	2.399	1,022,680	6,149,601
2013-2014	2,548,584	6,435,438	1.248	0.199	2.475	1,255,241	7,690,679
2014-2015	2,599,285	5,867,076	1.322	0.244	2.612	1,656,597	7,523,673
2015-2016	2,610,156	4,538,671	1.502	0.334	2.713	2,365,172	6,903,843
2016-2017	2,710,988	5,474,159	2.055	0.513	2.845	3,956,646	9,430,805
Totals	47,135,980	\$87,472,335				\$14,113,465	\$101,585,800

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 1/31/18 (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)
1997-1998	1,339,868	3,515,066	1.048	0.046	2.274	140,156	3,655,222
1998-1999	1,376,725	3,300,031	1.060	0.057	2.139	167,854	3,467,885
1999-2000	1,418,394	2,854,486	1.069	0.065	2.458	226,617	3,081,103
2000-2001	1,537,092	3,762,071	1.078	0.072	2.292	253,657	4,015,728
2001-2002	1,608,166	2,282,696	1.088	0.081	1.638	213,368	2,496,064
2002-2003	1,983,847	3,623,300	1.101	0.092	2.096	382,549	4,005,849
2003-2004	2,279,997	3,137,813	1.119	0.106	1.598	386,204	3,524,017
2004-2005	2,339,047	2,459,770	1.137	0.120	1.075	301,737	2,761,507
2005-2006	2,665,841	2,814,879	1.153	0.133	1.177	417,313	3,232,192
2006-2007	2,805,866	3,424,098	1.173	0.147	1.360	560,949	3,985,047
2007-2008	3,053,804	4,029,212	1.197	0.165	1.475	743,220	4,772,432
2008-2009	3,108,645	4,590,871	1.225	0.184	1.417	810,511	5,401,382
2009-2010	3,057,257	6,195,928	1.261	0.207	2.100	1,328,990	7,524,918
2010-2011	2,837,573	5,400,604	1.312	0.238	2.063	1,393,231	6,793,835
2011-2012	2,686,806	4,738,204	1.380	0.275	2.294	1,694,972	6,433,176
2012-2013	2,568,039	4,803,157	1.471	0.320	2.399	1,971,432	6,774,589
2013-2014	2,548,584	5,018,963	1.606	0.377	2.475	2,378,020	7,396,983
2014-2015	2,599,285	4,188,252	1.841	0.457	2.612	3,102,725	7,290,977
2015-2016	2,610,156	2,409,237	2.385	0.581	2.713	4,114,266	6,523,503
2016-2017	2,710,988	2,061,049	4.141	0.759	2.845	5,853,985	7,915,034
Totals	47,135,980	\$74,609,687				\$26,441,756	\$101,051,443

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)
1997-1998	1,339,868	2,541,000	1.450	3,684,450	2.750	1.896	1.199	2.274
1998-1999	1,376,725	2,441,914	1.280	3,125,650	2.270	1.774	1.206	2.139
1999-2000	1,418,394	2,873,000	1.139	3,272,347	2.307	2.026	1.213	2.458
2000-2001	1,537,092	2,886,000	1.055	3,044,730	1.981	1.878	1.220	2.292
2001-2002	1,608,166	2,145,000	1.044	2,239,380	1.393	1.334	1.228	1.638
2002-2003	1,983,847	3,316,000	1.084	3,594,544	1.812	1.671	1.254	2.096
2003-2004	2,279,997	2,818,000	1.323	3,728,214	1.635	1.236	1.293	1.598
2004-2005	2,339,047	1,930,000	1.683	3,248,190	1.389	0.825	1.303	1.075
2005-2006	2,665,841	2,389,000	1.798	4,295,422	1.611	0.896	1.314	1.177
2006-2007	2,805,866	2,881,000	1.678	4,834,318	1.723	1.027	1.324	1.360
2007-2008	3,053,804	3,374,000	1.536	5,182,464	1.697	1.105	1.335	1.475
2008-2009	3,108,645	3,273,000	1.412	4,621,476	1.487	1.053	1.346	1.417
2009-2010	3,057,257	4,733,000	1.275	6,034,575	1.974	1.548	1.357	2.100
2010-2011	2,837,573	4,279,000	1.213	5,190,427	1.829	1.508	1.368	2.063
2011-2012	2,686,806	4,468,000	1.208	5,397,344	2.009	1.663	1.380	2.294
2012-2013	2,568,039	4,405,000	1.200	5,286,000	2.058	1.725	1.391	2.399
2013-2014	2,548,584	4,972,000	1.173	5,832,156	2.288	1.765	1.402	2.475
2014-2015	2,599,285	4,652,000	1.121	5,214,892	2.006	1.847	1.414	2.612
2015-2016	2,610,156	3,889,000	1.088	4,231,232	1.621	1.903	1.426	2.713
2016-2017	2,710,988	6,287,000	1.046	6,576,202	2.426	1.979	1.438	2.845
Total/Avg	47,135,980	\$70,552,914		\$88,634,013	\$1.880			
12/13-15/16	10,326,064	17,918,000		20,564,280	\$1.991			
11/12-16/17	15,723,858	28,673,000		32,537,826	\$2.069			
				Selected Limited Rate:	\$2.070			
				Prior:	\$2.145			

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 2011-2012 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	\$4,144	5,788	\$23,985,472
1997-1998	8,395	363	3,047,385
1998-1999	8,180	360	2,944,800
1999-2000	9,196	379	3,485,284
2000-2001	10,328	341	3,521,848
2001-2002	7,817	337	2,634,329
2002-2003	9,904	420	4,159,680
2003-2004	8,415	433	3,643,695
2004-2005	7,026	358	2,515,308
2005-2006	8,414	373	3,138,422
2006-2007	9,516	401	3,815,916
2007-2008	10,778	418	4,505,204
2008-2009	12,624	349	4,405,776
2009-2010	15,702	409	6,422,118
2010-2011	16,824	348	5,854,752
2011-2012	18,236	338	6,163,768
2012-2013	17,773	343	6,096,139
2013-2014	18,490	330	6,101,700
2014-2015	19,728	340	6,707,520
2015-2016	20,701	333	6,893,433
2016-2017	21,920	371	8,132,320
Total		13,132	\$118,174,869

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	\$20,710,000	5,788	\$3,578	2.406	\$8,609	\$3,578	1.158	\$4,144
1997-1998	2,541,000	363	7,000	1.764	12,348	7,000	1.199	8,395
1998-1999	2,441,914	360	6,783	1.543	10,466	6,783	1.206	8,180
1999-2000	2,873,000	379	7,580	1.358	10,294	7,580	1.213	9,196
2000-2001	2,886,000	341	8,463	1.246	10,545	8,463	1.220	10,328
2001-2002	2,145,000	337	6,365	1.221	7,772	6,365	1.228	7,817
2002-2003	3,316,000	420	7,895	1.256	9,916	7,895	1.254	9,904
2003-2004	2,818,000	433	6,508	1.517	9,873	6,508	1.293	8,415
2004-2005	1,930,000	358	5,391	1.911	10,302	5,391	1.303	7,026
2005-2006	2,389,000	373	6,405	2.023	12,957	6,405	1.314	8,414
2006-2007	2,881,000	401	7,185	1.869	13,429	7,185	1.324	9,516
2007-2008	3,374,000	418	8,072	1.694	13,674	8,072	1.335	10,778
2008-2009	3,273,000	349	9,378	1.542	14,461	9,378	1.346	12,624
2009-2010	4,733,000	409	11,572	1.379	15,958	11,572	1.357	15,702
2010-2011	4,279,000	348	12,296	1.299	15,973	12,296	1.368	16,824
2011-2012	4,468,000	338	13,219	1.281	16,934	13,219	1.380	18,236
2012-2013	4,405,000	343	12,843	1.260	16,182	12,778	1.391	17,773
2013-2014	4,972,000	330	15,067	1.221	18,397	13,186	1.402	18,490
2014-2015	4,682,000	340	13,771	1.154	15,892	13,951	1.414	19,728
2015-2016	4,085,000	333	12,267	1.109	13,604	14,518	1.426	20,701
2016-2017	5,892,000	371	15,881	1.056	16,770	15,246	1.438	21,920

Average Limited Severity: \$13,065
Average 12/13-15/16 Limited Severity: 16,019
Average 12/13-16/17 Limited Severity: 16,169

Selected Limited Severity: \$16,100
Prior: \$16,750

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	5,788	5,786	5,788	0.0		0.810	
1997-1998	363	361	363	134.0	2.709	0.819	2.219
1998-1999	360	363	360	137.7	2.615	0.827	2.163
1999-2000	379	376	379	141.8	2.672	0.835	2.231
2000-2001	341	338	341	153.7	2.218	0.843	1.870
2001-2002	337	339	337	160.8	2.096	0.852	1.786
2002-2003	420	421	420	198.4	2.117	0.860	1.821
2003-2004	433	434	433	228.0	1.899	0.868	1.648
2004-2005	358	358	358	233.9	1.531	0.877	1.343
2005-2006	373	375	373	266.6	1.399	0.887	1.241
2006-2007	401	406	401	280.6	1.429	0.896	1.280
2007-2008	418	423	418	305.4	1.369	0.905	1.239
2008-2009	349	351	349	310.9	1.123	0.914	1.026
2009-2010	409	405	409	305.7	1.338	0.924	1.236
2010-2011	348	348	348	283.8	1.226	0.933	1.144
2011-2012	338	340	338	268.7	1.258	0.942	1.185
2012-2013	343	358	343	256.8	1.336	0.952	1.272
2013-2014	330	329	330	254.9	1.295	0.961	1.244
2014-2015	340	336	340	259.9	1.308	0.970	1.269
2015-2016	333	349	333	261.0	1.276	0.979	1.249
2016-2017	371	388	371	271.1	1.369	0.990	1.355
Total	13,132	13,184	13,132	4,713.6			1.403
11/12-15/16	1,684	1,712	1,684	1,301.3			1.243
					(H) Selected 2017-2018 Frequency:		1.310
					Prior:		1.335
Program Year:				2017-2018	2018-2019		
(I) Trend Factor:				1.000	0.990		
(J) Selected Frequency:				1.310	1.297		
(K) Est. Payroll (\$000,000):				275.2	276.4		
(L) Ultimate Claims:				361	359		

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 1.310 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 1/31/2018 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	5,788	1.000	5,788	
1997-1998	363	1.000	363	2.219
1998-1999	360	1.000	360	2.163
1999-2000	379	1.000	379	2.231
2000-2001	341	1.000	341	1.870
2001-2002	337	1.000	337	1.785
2002-2003	420	1.000	420	1.821
2003-2004	433	1.000	433	1.648
2004-2005	358	1.000	358	1.342
2005-2006	373	1.000	373	1.241
2006-2007	401	1.000	401	1.281
2007-2008	418	1.000	418	1.239
2008-2009	349	1.000	349	1.026
2009-2010	409	1.000	409	1.236
2010-2011	348	1.000	348	1.144
2011-2012	338	1.000	338	1.185
2012-2013	343	1.000	343	1.272
2013-2014	329	1.003	330	1.244
2014-2015	338	1.007	340	1.269
2015-2016	329	1.011	333	1.249
2016-2017	356	1.041	371	1.355
Total	13,110		13,132	1.403

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 1/31/2018 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	5,763	1.004	5,786	
1997-1998	359	1.005	361	2.207
1998-1999	360	1.007	363	2.181
1999-2000	373	1.009	376	2.213
2000-2001	334	1.011	338	1.854
2001-2002	335	1.013	339	1.796
2002-2003	415	1.015	421	1.825
2003-2004	427	1.017	434	1.652
2004-2005	351	1.020	358	1.342
2005-2006	366	1.024	375	1.248
2006-2007	395	1.028	406	1.296
2007-2008	410	1.032	423	1.254
2008-2009	338	1.037	351	1.032
2009-2010	389	1.042	405	1.224
2010-2011	331	1.051	348	1.144
2011-2012	320	1.064	340	1.192
2012-2013	331	1.083	358	1.327
2013-2014	296	1.113	329	1.241
2014-2015	288	1.166	336	1.254
2015-2016	284	1.228	349	1.309
2016-2017	263	1.477	388	1.417
Total	12,728		13,184	1.414

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
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	358
2005-2006			370	371	371	372	372	372	372	372	373	373	
2006-2007		399	400	400	400	400	400	401	401	401	401		
2007-2008	388	406	412	413	416	417	418	418	418	418			
2008-2009	324	346	347	349	349	349	349	349	349				
2009-2010	386	405	407	408	409	410	409	409					
2010-2011	330	346	346	347	347	348	348						
2011-2012	308	332	334	336	338	338							
2012-2013	321	338	339	341	343								
2013-2014	299	322	325	328									
2014-2015	302	331	337										
2015-2016	306	328											
2016-2017	337												

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
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	1.000
2004-2005				1.000	1.006	1.000	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	1.003	1.000		
2006-2007		1.003	1.000	1.000	1.000	1.000	1.003	1.000	1.000	1.000			
2007-2008	1.046	1.015	1.002	1.007	1.002	1.002	1.000	1.000	1.000				
2008-2009	1.068	1.003	1.006	1.000	1.000	1.000	1.000	1.000					
2009-2010	1.049	1.005	1.002	1.002	1.002	0.998	1.000						
2010-2011	1.048	1.000	1.003	1.000	1.003	1.000							
2011-2012	1.078	1.006	1.006	1.006	1.000								
2012-2013	1.053	1.003	1.006	1.006									
2013-2014	1.077	1.009	1.009										
2014-2015	1.096	1.018											
2015-2016	1.072												
Average	1.065	1.007	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	1.082	1.010	1.007	1.004	1.002	0.999	1.000	1.000	1.000	1.001	1.000	1.000	1.000
4-yr	1.074	1.009	1.006	1.003	1.001	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	1.063	1.005	1.004	1.003	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.065	1.006	1.004	1.003	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulated	1.081	1.015	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
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	351
2005-2006			324	338	338	348	354	356	359	361	364	366	
2006-2007		340	357	359	373	379	385	388	393	395	394		
2007-2008	224	337	348	363	380	386	393	396	407	410			
2008-2009	189	282	289	304	315	319	324	334	337				
2009-2010	178	302	317	340	356	363	376	387					
2010-2011	161	263	276	296	311	322	331						
2011-2012	164	252	263	284	305	315							
2012-2013	185	267	281	301	321								
2013-2014	171	252	261	286									
2014-2015	164	254	279										
2015-2016	123	268											
2016-2017	178												

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
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	1.000
2004-2005				1.028	1.015	1.015	1.018	0.997	1.003	1.003	1.009	1.000	
2005-2006			1.043	1.000	1.030	1.017	1.006	1.008	1.006	1.008	1.005		
2006-2007		1.050	1.006	1.039	1.016	1.016	1.008	1.013	1.005	0.997			
2007-2008	1.504	1.033	1.043	1.047	1.016	1.018	1.008	1.028	1.007				
2008-2009	1.492	1.025	1.052	1.036	1.013	1.016	1.031	1.009					
2009-2010	1.697	1.050	1.073	1.047	1.020	1.036	1.029						
2010-2011	1.634	1.049	1.072	1.051	1.035	1.028							
2011-2012	1.537	1.044	1.080	1.074	1.033								
2012-2013	1.443	1.052	1.071	1.066									
2013-2014	1.474	1.036	1.096										
2014-2015	1.549	1.098											
2015-2016	2.179												
Average	1.612	1.049	1.060	1.043	1.024	1.019	1.013	1.008	1.007	1.004	1.005	1.003	1.003
Claim-weighted													
Averages													
3-yr	1.690	1.062	1.082	1.064	1.029	1.027	1.022	1.017	1.006	1.003	1.008	1.002	1.003
4-yr	1.619	1.058	1.080	1.059	1.025	1.024	1.018	1.015	1.005	1.000	1.006	1.003	1.001
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	1.525	1.044	1.059	1.040	1.018	1.015	1.010	1.005	1.005	1.005	1.004	1.004	1.004
Selected	1.543	1.045	1.059	1.041	1.019	1.016	1.011	1.006	1.005	1.005	1.004	1.004	1.004
Cumulated	1.945	1.261	1.206	1.139	1.095	1.074	1.057	1.046	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	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to
		2017-2018 Loss Rate Level (B)	2018-2019 Loss Rate Level (C)	2019-2020 Loss Rate Level (D)	2020-2021 Loss Rate Level (E)	2017-2018 Frequency Level (F)	2018-2019 Frequency Level (G)	2019-2020 Frequency Level (H)	2020-2021 Frequency Level (I)	2017-2018 Severity Level (J)
Prior	1.433	1.958	1.987	2.016	2.046	0.810	0.802	0.794	0.786	2.406
1997-1998	1.077	1.450	1.471	1.493	1.516	0.819	0.810	0.802	0.794	1.764
1998-1999	0.965	1.280	1.299	1.318	1.338	0.827	0.818	0.810	0.802	1.543
1999-2000	0.871	1.139	1.156	1.173	1.190	0.835	0.827	0.818	0.810	1.358
2000-2001	0.819	1.055	1.071	1.087	1.103	0.843	0.835	0.826	0.818	1.246
2001-2002	0.823	1.044	1.060	1.075	1.091	0.852	0.843	0.834	0.826	1.221
2002-2003	0.868	1.084	1.100	1.116	1.133	0.860	0.851	0.842	0.834	1.256
2003-2004	1.074	1.323	1.342	1.362	1.382	0.868	0.859	0.851	0.842	1.517
2004-2005	1.387	1.683	1.707	1.732	1.758	0.877	0.868	0.860	0.851	1.911
2005-2006	1.505	1.798	1.825	1.851	1.879	0.887	0.878	0.869	0.860	2.023
2006-2007	1.425	1.678	1.703	1.728	1.754	0.896	0.887	0.878	0.869	1.869
2007-2008	1.323	1.536	1.558	1.581	1.605	0.905	0.896	0.887	0.878	1.694
2008-2009	1.235	1.412	1.433	1.454	1.476	0.914	0.905	0.896	0.887	1.542
2009-2010	1.132	1.275	1.294	1.313	1.333	0.924	0.914	0.905	0.896	1.379
2010-2011	1.093	1.213	1.231	1.249	1.268	0.933	0.923	0.914	0.905	1.299
2011-2012	1.104	1.208	1.226	1.244	1.262	0.942	0.933	0.923	0.914	1.281
2012-2013	1.113	1.200	1.217	1.235	1.254	0.952	0.942	0.932	0.923	1.260
2013-2014	1.106	1.173	1.190	1.208	1.226	0.961	0.951	0.941	0.932	1.221
2014-2015	1.072	1.121	1.137	1.154	1.171	0.970	0.960	0.951	0.941	1.154
2015-2016	1.055	1.088	1.104	1.120	1.137	0.979	0.969	0.960	0.950	1.109
2016-2017	1.030	1.046	1.061	1.077	1.093	0.990	0.980	0.970	0.960	1.056
2017-2018	1.000	1.000	1.015	1.030	1.045	1.000	0.990	0.980	0.970	1.000
2018-2019	1.000	--	1.000	1.015	1.030	--	1.000	0.990	0.980	--
2019-2020	1.000	--	--	1.000	1.015	--	--	1.000	0.990	--
2020-2021	1.000	--	--	--	1.000	--	--	--	1.000	--

Notes:

- (A) Based on WCIRB.
- (B) - (E) (A) adjusted for a 1.5% annual loss rate trend.
- (F) - (I) (A) adjusted for a -1.0% 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	\$20,710,000	5,788	1.433	5,127		
1997-1998	2,541,000	363	1.077	7,540	1,339,868	2.709
1998-1999	2,441,914	360	0.965	6,548	1,376,725	2.615
1999-2000	2,873,000	379	0.871	6,605	1,418,394	2.672
2000-2001	2,886,000	341	0.819	6,935	1,537,092	2.218
2001-2002	2,145,000	337	0.823	5,238	1,608,166	2.096
2002-2003	3,316,000	420	0.868	6,851	1,983,847	2.117
2003-2004	2,818,000	433	1.074	6,991	2,279,997	1.899
2004-2005	1,930,000	358	1.387	7,476	2,339,047	1.531
2005-2006	2,389,000	373	1.505	9,637	2,665,841	1.399
2006-2007	2,881,000	401	1.425	10,236	2,805,866	1.429
2007-2008	3,374,000	418	1.323	10,680	3,053,804	1.369
2008-2009	3,273,000	349	1.235	11,582	3,108,645	1.123
2009-2010	4,733,000	409	1.132	13,104	3,057,257	1.338
2010-2011	4,279,000	348	1.093	13,440	2,837,573	1.226
2011-2012	4,468,000	338	1.104	14,598	2,686,806	1.258
2012-2013	4,405,000	343	1.113	14,297	2,568,039	1.336
2013-2014	4,972,000	330	1.106	16,659	2,548,584	1.295
2014-2015	4,652,000	340	1.072	14,665	2,599,285	1.308
2015-2016	3,889,000	333	1.055	12,327	2,610,156	1.276
2016-2017	6,287,000	371	1.030	17,459	2,710,988	1.369

	<u>Severity Trend Factors</u>	<u>Frequency Trend Factors</u>
Latest 10 x 2016-2017	1.037	0.996
Latest 5 x 2016-2017	0.969	1.001
Prior	1.025	0.980
Default	1.025	0.980
Selected Residual Trend	1.025	0.990

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>1/31/2018</u>	<u>Calendar Period</u>	
		<u>2/1/2018</u> <u>to</u> <u>6/30/2018</u>	<u>7/1/2018</u> <u>to</u> <u>6/30/2019</u>
Prior			
Ultimate Loss	\$38,104,031	\$38,104,031	\$38,104,031
Paid in Calendar Period	-	(14,530)	221,212
Paid to Date	36,543,528	36,528,998	36,750,210
Outstanding Liability	1,560,503	1,575,033	1,353,821
2001-2002			
Ultimate Loss	\$2,455,000	\$2,455,000	\$2,455,000
Paid in Calendar Period	-	7,237	18,322
Paid to Date	2,282,696	2,289,933	2,308,255
Outstanding Liability	172,304	165,067	146,745
2002-2003			
Ultimate Loss	\$3,871,000	\$3,871,000	\$3,871,000
Paid in Calendar Period	-	15,605	22,745
Paid to Date	3,623,300	3,638,905	3,661,650
Outstanding Liability	247,700	232,095	209,350
2003-2004			
Ultimate Loss	\$3,465,000	\$3,465,000	\$3,465,000
Paid in Calendar Period	-	22,249	40,557
Paid to Date	3,137,813	3,160,062	3,200,619
Outstanding Liability	327,187	304,938	264,381
2004-2005			
Ultimate Loss	\$2,841,000	\$2,841,000	\$2,841,000
Paid in Calendar Period	-	14,868	52,756
Paid to Date	2,459,770	2,474,638	2,527,394
Outstanding Liability	381,230	366,362	313,606
2005-2006			
Ultimate Loss	\$3,310,000	\$3,310,000	\$3,310,000
Paid in Calendar Period	-	19,805	43,254
Paid to Date	2,814,879	2,834,684	2,877,938
Outstanding Liability	495,121	475,316	432,062
2006-2007			
Ultimate Loss	\$3,833,000	\$3,833,000	\$3,833,000
Paid in Calendar Period	-	18,401	37,488
Paid to Date	3,424,098	3,442,499	3,479,987
Outstanding Liability	408,902	390,501	353,013

Workers' Compensation - Workers' Compensation

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>1/31/2018</u>	<u>Calendar Period</u>	
		<u>2/1/2018</u> <u>to</u> <u>6/30/2018</u>	<u>7/1/2018</u> <u>to</u> <u>6/30/2019</u>
2007-2008			
Ultimate Loss	\$4,713,000	\$4,713,000	\$4,713,000
Paid in Calendar Period	-	29,403	69,365
Paid to Date	4,029,212	4,058,615	4,127,980
Outstanding Liability	683,788	654,385	585,020
2008-2009			
Ultimate Loss	\$5,337,000	\$5,337,000	\$5,337,000
Paid in Calendar Period	-	35,814	70,321
Paid to Date	4,590,871	4,626,685	4,697,006
Outstanding Liability	746,129	710,315	639,994
2009-2010			
Ultimate Loss	\$7,533,000	\$7,533,000	\$7,533,000
Paid in Calendar Period	-	73,539	132,671
Paid to Date	6,195,928	6,269,467	6,402,138
Outstanding Liability	1,337,072	1,263,533	1,130,862
2010-2011			
Ultimate Loss	\$6,770,000	\$6,770,000	\$6,770,000
Paid in Calendar Period	-	84,903	157,993
Paid to Date	5,400,604	5,485,507	5,643,500
Outstanding Liability	1,369,396	1,284,493	1,126,500
2011-2012			
Ultimate Loss	\$6,105,000	\$6,105,000	\$6,105,000
Paid in Calendar Period	-	82,008	177,301
Paid to Date	4,738,204	4,820,212	4,997,513
Outstanding Liability	1,366,796	1,284,788	1,107,487
2012-2013			
Ultimate Loss	\$6,291,000	\$6,291,000	\$6,291,000
Paid in Calendar Period	-	102,661	184,229
Paid to Date	4,803,157	4,905,818	5,090,047
Outstanding Liability	1,487,843	1,385,182	1,200,953
2013-2014			
Ultimate Loss	\$7,544,000	\$7,544,000	\$7,544,000
Paid in Calendar Period	-	176,753	352,243
Paid to Date	5,018,963	5,195,716	5,547,959
Outstanding Liability	2,525,037	2,348,284	1,996,041

Workers' Compensation - Workers' Compensation

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>1/31/2018</u>	<u>Calendar Period</u>	
		<u>2/1/2018</u> <u>to</u> <u>6/30/2018</u>	<u>7/1/2018</u> <u>to</u> <u>6/30/2019</u>
2014-2015			
Ultimate Loss	\$7,261,000	\$7,261,000	\$7,261,000
Paid in Calendar Period	-	288,838	423,154
Paid to Date	4,188,252	4,477,090	4,900,244
Outstanding Liability	3,072,748	2,783,910	2,360,756
2015-2016			
Ultimate Loss	\$6,860,000	\$6,860,000	\$6,860,000
Paid in Calendar Period	-	489,584	788,275
Paid to Date	2,409,237	2,898,821	3,687,096
Outstanding Liability	4,450,763	3,961,179	3,172,904
2016-2017			
Ultimate Loss	\$8,840,000	\$8,840,000	\$8,840,000
Paid in Calendar Period	-	793,137	1,364,766
Paid to Date	2,061,049	2,854,186	4,218,952
Outstanding Liability	6,778,951	5,985,814	4,621,048
2017-2018			
Ultimate Loss	\$4,819,000	\$8,261,000	\$8,261,000
Paid in Calendar Period	-	424,400	1,791,802
Paid to Date	401,738	826,138	2,617,940
Outstanding Liability	4,417,262	7,434,862	5,643,060
2018-2019			
Ultimate Loss	-	-	\$8,492,000
Paid in Calendar Period	-	-	993,564
Paid to Date	-	-	993,564
Outstanding Liability	-	-	7,498,436
Totals			
Ultimate Loss	\$129,952,031	\$133,394,031	\$141,886,031
Paid in Calendar Period	-	2,664,675	6,942,018
Paid to Date	98,123,299	100,787,974	107,729,992
Outstanding Liability	31,828,732	32,606,057	34,156,039
Total Outstanding ULAE	0	0	0
Outstanding Liability plus ULAE	31,828,732	32,606,057	34,156,039

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 2015-2016, \$489,584 is expected to be paid between 2/1/18 and 6/30/18, \$2,898,821 will have been paid by 6/30/18, and the reserve for remaining payments on these claims should be \$3,961,179.
- 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, $\$788,275 = \$3,961,179 \times 19.9\%$.
- Paid to Date is Paid in Calendar Period plus Paid to Date from previous calendar period. For example, $\$3,687,096 = \$788,275 + \$2,898,821$.
- Outstanding Liability is Ultimate Loss minus Paid to Date. For example, $\$3,961,179 = \$6,860,000 - \$2,898,821$.

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 1/31/18:</u>		<u>Expected</u>	<u>Discounted</u>
<u>Current (Short Term)</u>	Loss and ALAE:	\$2,240,275	\$2,212,786
	ULAE:	117,614	116,171
	Short-Term Loss and LAE:	<u>\$2,357,889</u>	<u>\$2,328,957</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$29,588,457	\$25,174,312
	ULAE:	1,553,386	1,321,644
	Long-Term Loss and LAE:	<u>\$31,141,843</u>	<u>\$26,495,956</u>
<u>Total Liability</u>	Loss and ALAE:	\$31,828,732	\$27,387,098
	ULAE:	1,671,000	1,437,815
	Total Loss and LAE:	<u>\$33,499,732</u>	<u>\$28,824,913</u>
<u>Liabilities as of 6/30/18:</u>			
<u>Current (Short Term)</u>	Loss and ALAE:	\$5,948,454	\$5,875,464
	ULAE:	312,327	308,495
	Short-Term Loss and LAE:	<u>\$6,260,781</u>	<u>\$6,183,959</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$26,657,603	\$22,201,102
	ULAE:	1,399,673	1,165,681
	Long-Term Loss and LAE:	<u>\$28,057,276</u>	<u>\$23,366,783</u>
<u>Total Liability</u>	Loss and ALAE:	\$32,606,057	\$28,076,566
	ULAE:	1,712,000	1,474,176
	Total Loss and LAE:	<u>\$34,318,057</u>	<u>\$29,550,742</u>

		<u>Discounted with a Margin for Contingencies</u>				
		<u>70%</u>	<u>75%</u>	<u>80%</u>	<u>85%</u>	<u>90%</u>
		<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>
<u>Liabilities as of 1/31/18:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$2,398,660	\$2,471,682	\$2,555,768	\$2,659,769	\$2,794,749
	ULAE:	125,929	129,763	134,178	139,638	146,724
	Short-Term Loss and LAE:	<u>\$2,524,589</u>	<u>\$2,601,445</u>	<u>\$2,689,946</u>	<u>\$2,799,407</u>	<u>\$2,941,473</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$27,288,954	\$28,119,706	\$29,076,330	\$30,259,523	\$31,795,156
	ULAE:	1,432,663	1,476,277	1,526,499	1,588,615	1,669,236
	Long-Term Loss and LAE:	<u>\$28,721,617</u>	<u>\$29,595,983</u>	<u>\$30,602,829</u>	<u>\$31,848,138</u>	<u>\$33,464,392</u>
<u>Total Liability</u>	Loss and ALAE:	\$29,687,614	\$30,591,388	\$31,632,098	\$32,919,292	\$34,589,905
	ULAE:	1,558,592	1,606,040	1,660,677	1,728,253	1,815,960
	Total Loss and LAE:	<u>\$31,246,206</u>	<u>\$32,197,428</u>	<u>\$33,292,775</u>	<u>\$34,647,545</u>	<u>\$36,405,865</u>
<u>Liabilities as of 6/30/18:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$6,369,003	\$6,562,893	\$6,786,161	\$7,062,308	\$7,420,711
	ULAE:	334,409	344,589	356,312	370,811	389,629
	Short-Term Loss and LAE:	<u>\$6,703,412</u>	<u>\$6,907,482</u>	<u>\$7,142,473</u>	<u>\$7,433,119</u>	<u>\$7,810,340</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$24,065,995	\$24,798,631	\$25,642,273	\$26,685,724	\$28,039,992
	ULAE:	1,263,597	1,302,066	1,346,361	1,401,149	1,472,255
	Long-Term Loss and LAE:	<u>\$25,329,592</u>	<u>\$26,100,697</u>	<u>\$26,988,634</u>	<u>\$28,086,873</u>	<u>\$29,512,247</u>
<u>Total Liability</u>	Loss and ALAE:	\$30,434,998	\$31,361,524	\$32,428,434	\$33,748,032	\$35,460,703
	ULAE:	1,598,006	1,646,655	1,702,673	1,771,960	1,861,884
	Total Loss and LAE:	<u>\$32,033,004</u>	<u>\$33,008,179</u>	<u>\$34,131,107</u>	<u>\$35,519,992</u>	<u>\$37,322,587</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 1/31/18 (A)	Discount Factor (B)	Discounted Reserve at 1/31/18 (C)	Full Value of Reserve at 6/30/18 (D)	Discount Factor (E)	Discounted Reserve at 6/30/18 (F)
Prior	\$1,035,126	0.988	\$1,022,425	\$1,081,707	0.988	\$1,068,434
1997-1998	81,934	0.979	80,194	72,102	0.988	71,217
1998-1999	0	0.958	0	0	0.966	0
1999-2000	155,514	0.940	146,204	147,116	0.947	139,368
2000-2001	287,929	0.923	265,806	274,108	0.930	254,940
2001-2002	172,304	0.907	156,363	165,067	0.914	150,791
2002-2003	247,700	0.893	221,271	232,095	0.899	208,667
2003-2004	327,187	0.880	287,911	304,938	0.885	269,947
2004-2005	381,230	0.868	330,867	366,362	0.873	319,672
2005-2006	495,121	0.858	424,651	475,316	0.861	409,424
2006-2007	408,902	0.849	347,356	390,501	0.852	332,900
2007-2008	683,788	0.842	575,967	654,385	0.845	553,134
2008-2009	746,129	0.836	623,863	710,315	0.838	595,376
2009-2010	1,337,072	0.833	1,113,610	1,263,533	0.833	1,052,855
2010-2011	1,369,396	0.833	1,140,521	1,284,493	0.832	1,069,117
2011-2012	1,366,796	0.834	1,139,320	1,284,788	0.834	1,071,021
2012-2013	1,487,843	0.835	1,242,145	1,385,182	0.834	1,154,555
2013-2014	2,525,037	0.838	2,116,040	2,348,284	0.837	1,964,958
2014-2015	3,072,748	0.844	2,593,671	2,783,910	0.840	2,337,885
2015-2016	4,450,763	0.856	3,808,502	3,961,179	0.850	3,367,421
2016-2017	6,778,951	0.869	5,890,195	5,985,814	0.864	5,168,826
2017-2018	4,417,262	0.874	3,860,216	7,434,862	0.876	6,516,058
Totals	\$31,828,732		\$27,387,098	\$32,606,057		\$28,076,566

(G) Discount Factor at 1/31/18 for Overall Reserve: 0.860
(H) Discount Factor at 6/30/18 for Overall Reserve: 0.861

Notes:

- (A) From Appendix F, Outstanding Liability at 1/31/18.
- (B) Based on Appendix H, Page 2, Column (E).
- (C) (A) x (B).
- (D) From Appendix F, Outstanding Liability at 6/30/18.
- (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	7.7%	2.5%	0.076	0.077	0.988
21	0.9%	2.5%	0.083	0.086	0.966
20	1.0%	2.5%	0.091	0.096	0.947
19	1.0%	2.5%	0.098	0.106	0.930
18	0.9%	2.5%	0.104	0.114	0.914
17	1.0%	2.5%	0.112	0.124	0.899
16	1.0%	2.5%	0.119	0.134	0.885
15	1.0%	2.5%	0.126	0.145	0.873
14	1.2%	2.5%	0.134	0.156	0.861
13	1.4%	2.5%	0.145	0.170	0.852
12	1.6%	2.5%	0.158	0.186	0.845
11	1.7%	2.5%	0.170	0.203	0.838
10	2.0%	2.5%	0.186	0.224	0.833
9	2.8%	2.5%	0.209	0.251	0.832
8	3.5%	2.5%	0.239	0.287	0.834
7	3.8%	2.5%	0.270	0.324	0.834
6	5.1%	2.5%	0.314	0.375	0.837
5	5.9%	2.5%	0.365	0.434	0.840
4	9.7%	2.5%	0.452	0.532	0.850
3	14.6%	2.5%	0.585	0.678	0.864
2	20.7%	2.5%	0.775	0.885	0.876
1	11.5%	2.5%	0.870	1.000	0.870
(G) Discount Factor for Future Funding:					0.881

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, $77.5\% = [58.5\% / 1.025] + [20.7\% / (1.012)]$.
- (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%	1.449	1.361
90%	1.327	1.263
85%	1.250	1.202
80%	1.192	1.155
75%	1.144	1.117
70%	1.103	1.084
65%	1.066	1.054
60%	1.032	1.027
55%	1.001	1.002
50%	0.970	0.977
45%	0.941	0.954
40%	0.912	0.931
35%	0.883	0.907
30%	0.853	0.884
25%	0.822	0.858

To read table: For the above retention, there is a 90% chance that final loss settlements will be less than 1.327 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	6/30/2000	1990-2000	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)
7/1/2018	6/30/2019	2018-2019	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 6/30/18

(A) <u>Total Assets as of 6/30/17:</u>		\$34,560,000
(B) <u>Total Income to Fund during 2017-2018</u>		
Contributions:		12,287,000
Interest:		200,000
Other:		0
Total Income:		<u>\$12,487,000</u>
(C) <u>Total Payments from Fund during 2017-2018</u>		
Loss and ALAE:		\$6,742,000
Excess Premium	Rate: \$0.6127	1,686,000
Claims Administration		388,000
Department Personnel		769,000
DOC Expense Paid		202,000
G&A Expense Paid		705,000
Capital Equipment		<u>30,000</u>
Total Payments:		<u>\$10,522,000</u>
(D) <u>Estimated Total Assets as of 6/30/18:</u>		\$36,525,000

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

Estimated Total Assets as of 6/30/19

(A) <u>Estimated Total Assets as of 6/30/18:</u>		\$36,525,000
(B) <u>Total Income to Fund during 2018-2019</u>		
Contributions:		\$12,823,000
Interest:		211,000
Other:		0
Total Income:		<u>\$13,034,000</u>
(C) <u>Total Payments from Fund during 2018-2019</u>		
Loss and ALAE:		\$6,942,000
Excess Premium	Rate: \$0.6197	\$1,713,000
Claims Administration		373,000
Department Personnel		812,000
DOC Expense Paid		202,000
G&A Expense Paid		779,000
Capital Equipment		<u>24,000</u>
Total Payments:		<u>\$10,845,000</u>
(D) <u>Estimated Total Assets as of 6/30/19:</u>		\$38,714,000

Notes:

- (A) Appendix K, Page 1, Line (D).
- (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 1/31/18

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	\$24,988,313	\$0	\$0	\$24,988,313	\$986,205	\$4,381,110	\$20,607,203	\$3,394,905	\$24,002,108	\$24,002,108
1997-1998	4,131,031	0	0	4,131,031	559,523	1,606,035	2,524,996	1,046,512	3,571,508	3,571,508
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	2,974,631	0	0	2,974,631	0	124,191	2,850,439	124,191	2,974,631	2,974,631
2000-2001	4,305,855	0	0	4,305,855	315,974	1,448,451	2,857,403	1,132,477	3,989,881	3,989,881
2001-2002	2,406,856	0	0	2,406,856	0	287,777	2,119,079	287,777	2,406,856	2,406,856
2002-2003	3,772,754	0	0	3,772,754	0	502,075	3,270,679	502,075	3,772,754	3,772,754
2003-2004	4,157,598	0	0	4,157,598	809,858	1,384,182	2,773,416	574,325	3,347,740	3,347,740
2004-2005	3,259,540	0	0	3,259,540	538,120	1,365,147	1,894,394	827,027	2,721,420	2,721,420
2005-2006	3,447,281	0	0	3,447,281	307,312	1,110,029	2,337,252	802,718	3,139,969	3,139,969
2006-2007	3,598,681	0	0	3,598,681	0	787,578	2,811,103	787,578	3,598,681	3,598,681
2007-2008	4,371,905	0	0	4,371,905	0	1,089,360	3,282,545	1,089,360	4,371,905	4,371,905
2008-2009	20,003,091	0	0	20,003,091	15,124,505	16,831,134	3,171,957	1,706,629	4,878,586	4,878,586
2009-2010	8,690,501	0	0	8,690,501	1,928,607	4,121,884	4,568,617	2,193,277	6,761,894	6,761,894
2010-2011	6,292,150	0	0	6,292,150	338,271	2,185,785	4,106,365	1,847,514	5,953,879	5,953,879
2011-2012	5,240,335	0	0	5,240,335	0	981,090	4,259,245	981,090	5,240,335	5,240,335
2012-2013	5,126,921	0	0	5,126,921	0	1,015,445	4,111,476	1,015,445	5,126,921	5,126,921
2013-2014	6,547,338	0	0	6,547,338	111,900	1,853,683	4,693,655	1,741,784	6,435,438	6,435,438
2014-2015	6,201,755	0	0	6,201,755	334,679	1,881,277	4,320,478	1,546,598	5,867,076	5,867,076
2015-2016	5,127,385	0	0	5,127,385	588,715	1,832,448	3,294,937	1,243,733	4,538,671	4,538,671
2016-2017	5,778,002	0	0	5,778,002	303,843	1,403,226	4,374,776	1,099,383	5,474,159	5,474,159
2017-2018	1,191,664	0	0	1,191,664	0	16,170	1,175,494	16,170	1,191,664	1,191,664
Total	\$136,464,431	\$0	\$0	\$136,464,431	\$23,798,325	\$48,617,009	\$87,847,423	\$24,818,683	\$112,666,106	\$112,666,106

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 1/31/18

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	\$24,025,345	\$0	\$0	\$24,025,345	\$913,470	\$3,628,186	\$20,397,158	\$2,714,716	\$23,111,874	\$23,111,874
1997-1998	3,829,891	0	0	3,829,891	314,825	1,334,110	2,495,782	1,019,285	3,515,066	3,515,066
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	2,854,486	0	0	2,854,486	0	98,987	2,755,499	98,987	2,854,486	2,854,486
2000-2001	3,764,899	0	0	3,764,899	2,828	977,138	2,787,761	974,309	3,762,071	3,762,071
2001-2002	2,282,696	0	0	2,282,696	0	214,872	2,067,824	214,872	2,282,696	2,282,696
2002-2003	3,623,300	0	0	3,623,300	0	447,916	3,175,384	447,916	3,623,300	3,623,300
2003-2004	3,947,671	0	0	3,947,671	809,858	1,294,187	2,653,485	484,329	3,137,813	3,137,813
2004-2005	2,676,561	0	0	2,676,561	216,792	869,743	1,806,818	652,952	2,459,770	2,459,770
2005-2006	2,814,879	0	0	2,814,879	0	558,494	2,256,385	558,494	2,814,879	2,814,879
2006-2007	3,424,098	0	0	3,424,098	0	668,543	2,755,555	668,543	3,424,098	3,424,098
2007-2008	4,029,212	0	0	4,029,212	0	803,471	3,225,741	803,471	4,029,212	4,029,212
2008-2009	8,166,573	0	0	8,166,573	3,575,703	5,119,112	3,047,462	1,543,409	4,590,871	4,590,871
2009-2010	8,124,534	0	0	8,124,534	1,928,607	3,827,667	4,296,867	1,899,060	6,195,928	6,195,928
2010-2011	5,618,349	0	0	5,618,349	217,745	1,710,010	3,908,339	1,492,264	5,400,604	5,400,604
2011-2012	4,738,204	0	0	4,738,204	0	840,241	3,897,963	840,241	4,738,204	4,738,204
2012-2013	4,803,157	0	0	4,803,157	0	860,778	3,942,379	860,778	4,803,157	4,803,157
2013-2014	5,130,862	0	0	5,130,862	111,900	1,165,976	3,964,887	1,054,076	5,018,963	5,018,963
2014-2015	4,460,871	0	0	4,460,871	272,619	1,065,047	3,395,824	792,428	4,188,252	4,188,252
2015-2016	2,409,237	0	0	2,409,237	0	139,633	2,269,604	139,633	2,409,237	2,409,237
2016-2017	2,061,049	0	0	2,061,049	0	74,890	1,986,159	74,890	2,061,049	2,061,049
2017-2018	401,738	0	0	401,738	0	0	401,738	0	401,738	401,738
Total	\$108,038,459	\$0	\$0	\$108,038,459	\$9,915,161	\$28,107,931	\$79,930,528	\$18,192,769	\$98,123,298	\$98,123,298

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 1/31/18

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	\$962,968	\$0	\$0	\$962,968	\$72,735	\$752,924	\$210,045	\$680,189	\$890,233	\$890,233
1997-1998	301,139	0	0	301,139	244,698	271,925	29,215	27,227	56,441	56,441
1998-1999	0	0	0	0	0	0	0	0	0	0
1999-2000	120,144	0	0	120,144	0	25,204	94,940	25,204	120,144	120,144
2000-2001	540,956	0	0	540,956	313,146	471,314	69,642	158,168	227,810	227,810
2001-2002	124,160	0	0	124,160	0	72,905	51,255	72,905	124,160	124,160
2002-2003	149,455	0	0	149,455	0	54,160	95,295	54,160	149,455	149,455
2003-2004	209,927	0	0	209,927	0	89,996	119,931	89,996	209,927	209,927
2004-2005	582,979	0	0	582,979	321,328	495,404	87,575	174,075	261,651	261,651
2005-2006	632,402	0	0	632,402	307,312	551,535	80,866	244,224	325,090	325,090
2006-2007	174,583	0	0	174,583	0	119,036	55,547	119,036	174,583	174,583
2007-2008	342,694	0	0	342,694	0	285,889	56,805	285,889	342,694	342,694
2008-2009	11,836,518	0	0	11,836,518	11,548,803	11,712,022	124,495	163,220	287,715	287,715
2009-2010	565,966	0	0	565,966	0	294,216	271,750	294,216	565,966	565,966
2010-2011	673,801	0	0	673,801	120,525	475,775	198,025	355,250	553,275	553,275
2011-2012	502,131	0	0	502,131	0	140,849	361,282	140,849	502,131	502,131
2012-2013	323,764	0	0	323,764	0	154,667	169,097	154,667	323,764	323,764
2013-2014	1,416,476	0	0	1,416,476	0	687,707	728,768	687,707	1,416,476	1,416,476
2014-2015	1,740,884	0	0	1,740,884	62,060	816,230	924,654	754,170	1,678,823	1,678,823
2015-2016	2,718,149	0	0	2,718,149	588,715	1,692,816	1,025,333	1,104,101	2,129,434	2,129,434
2016-2017	3,716,953	0	0	3,716,953	303,843	1,328,336	2,388,617	1,024,493	3,413,110	3,413,110
2017-2018	789,926	0	0	789,926	0	16,170	773,756	16,170	789,926	789,926
Total	\$28,425,972	\$0	\$0	\$28,425,972	\$13,883,164	\$20,509,078	\$7,916,894	\$6,625,914	\$14,542,808	\$14,542,808

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 1/31/18

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	5,788	0	0	5,788	5,763	0	0	5,763	25	25
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	379	0	0	379	373	0	0	373	6	6
2000-2001	341	0	0	341	334	0	0	334	7	7
2001-2002	337	0	0	337	335	0	0	335	2	2
2002-2003	420	0	0	420	415	0	0	415	5	5
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	366	0	0	366	7	7
2006-2007	401	0	0	401	395	0	0	395	6	6
2007-2008	418	0	0	418	410	0	0	410	8	8
2008-2009	349	0	0	349	338	0	0	338	11	11
2009-2010	409	0	0	409	389	0	0	389	20	20
2010-2011	348	0	0	348	331	0	0	331	17	17
2011-2012	338	0	0	338	320	0	0	320	18	18
2012-2013	343	0	0	343	331	0	0	331	12	12
2013-2014	329	0	0	329	296	0	0	296	33	33
2014-2015	338	0	0	338	288	0	0	288	50	50
2015-2016	329	0	0	329	284	0	0	284	45	45
2016-2017	356	0	0	356	263	0	0	263	93	93
2017-2018	164	0	0	164	66	0	0	66	98	98
Total	13,274	0	0	13,274	12,794	0	0	12,794	480	480

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)
1997-1998			817,990				1.638
1998-1999			861,530				1.598
1999-2000			909,810				1.559
2000-2001			1,010,580				1.521
2001-2002			1,083,670				1.484
2002-2003			1,370,060				1.448
2003-2004			1,613,586				1.413
2004-2005			1,696,191				1.379
2005-2006			1,982,038				1.345
2006-2007			2,138,617				1.312
2007-2008			2,385,784				1.280
2008-2009			2,488,907				1.249
2009-2010			2,508,004				1.219
2010-2011			2,386,521				1.189
2011-2012			2,316,212				1.160
2012-2013			2,268,586				1.132
2013-2014			2,308,500				1.104
2014-2015			2,413,449				1.077
2015-2016			2,483,498				1.051
2016-2017			2,644,866				1.025
2017-2018			2,751,995				1.000
2018-2019			2,764,269				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)
1997-1998			1,339,868				1,339,868
1998-1999			1,376,725				1,376,725
1999-2000			1,418,394				1,418,394
2000-2001			1,537,092				1,537,092
2001-2002			1,608,166				1,608,166
2002-2003			1,983,847				1,983,847
2003-2004			2,279,997				2,279,997
2004-2005			2,339,047				2,339,047
2005-2006			2,665,841				2,665,841
2006-2007			2,805,866				2,805,866
2007-2008			3,053,804				3,053,804
2008-2009			3,108,645				3,108,645
2009-2010			3,057,257				3,057,257
2010-2011			2,837,573				2,837,573
2011-2012			2,686,806				2,686,806
2012-2013			2,568,039				2,568,039
2013-2014			2,548,584				2,548,584
2014-2015			2,599,285				2,599,285
2015-2016			2,610,156				2,610,156
2016-2017			2,710,988				2,710,988
2017-2018			2,751,995				2,751,995
2018-2019			2,764,269				2,764,269
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)).