Bickmore

Actuarial Review of the Funding Requirements for the Excess General Liability Program

Outstanding Liabilities as of December 31, 2016 and June 30, 2017
Forecast for Program Year 2017-18

Presented to
ACCEL

April 27, 2017

Bickmore

Thursday, April 27, 2017

Authority for California Cities Excess Liability
c/o Alliant Insurance Services
Attn: Mike Simmons, Pool Administrator
100 Pine Street, 11th Floor
San Francisco, California 94111

Re: Actuarial Review of the Funding Requirements for the Excess Liability Program

Dear Mr. Simmons:

As you requested, we have completed our actuarial review of the funding requirements for the Authority for California Cities Excess Liability's (ACCEL, the Authority) excess liability program. Our conclusions are documented in the text and exhibits that follow.

At the undiscounted expected level, we estimate the program's liability for outstanding loss and allocated loss adjustment expenses (ALAE) to be approximately $17,294,000 as of June 30, 2017. We understand the Authority has chosen to record its liability with recognition of investment income at 2% per year. Discounted for anticipated investment income, we estimate the program's liability for outstanding loss and ALAE will be $15,959,000 as of that date. Further, we recommend the Authority fund a risk margin for potential adverse experience. Including a margin for adverse experience at the 85% confidence level, the Authority's required funding as of June 30, 2017 is projected to be $23,252,000.

Historically, ACCEL's outstanding liability has been comprised the liabilities of two separately funded pools:

- The first pool covered the layer from $500,000 to $1,000,000 per occurrence (the $500K pool) and operated during program years 1986-87 to 1989-90. This pool was funded by those members with $500,000 self-insured retentions during that period. All claims for this pool have been closed and there are no unpaid losses remaining.

- The second pool is for the layer above $1,000,000 per occurrence (the $1,000K pool) and is funded by all members.

The tables below shows our estimates of the program's claims liabilities as of December 31, 2016 and June 30, 2017, on both undiscounted and discounted bases for various confidence levels:

Outstanding Liability as of December 31, 2016
at Various Confidence Levels
$500K and $1,000K Pools Combined

Confidence Level	Undiscounted	Discounted
Expected	$16,947,000	$15,815,000
70%	19,929,000	18,598,000
75%	21,251,000	19,832,000
80%	22,777,000	21,255,000
85%	24,692,000	23,042,000
90%	27,217,000	25,399,000
95%	31,369,000	29,273,000

Outstanding Liability as of June 30, 2017
at Various Confidence Levels
$500K and $1,000K pools combined

Confidence Level	Undiscounted	Discounted
Expected	$17,294,000	$15,959,000
70%	20,337,000	18,767,000
75%	21,686,000	20,012,000
80%	23,243,000	21,448,000
85%	25,197,000	23,252,000
90%	27,773,000	25,629,000
95%	32,010,000	29,539,000

Our funding guidelines for the program's outstanding liabilities do not include any provision for reinsurance premiums, claims administration fees, and other administrative costs associated with the ACCEL program.

According to the accounting regulations of the Governmental Accounting Standards Board, unallocated loss adjustment expenses (ULAE) associated with the claims should be recognized as part of the program's claims liability. ULAE is the additional cost to administer all claims to final settlement, which may be years into the future (e.g. claims adjusters' salaries, taxes, etc.). Our undiscounted expected estimate of unpaid ULAE is $560,000 as of June 30, 2017. This estimate is 3.5% of the sum of all IBNR reserves and half of case reserves as of June 30, 2017.

We present funding recommendations for claims incurred during program year 2017-18 at several confidence levels in the table below. Our recommendations are displayed as rates per $100 of payroll for various layers. The recommended funding includes anticipated investment income at 2% per year.

Funding Guidelines for Discounted Claims Incurred in 2017-2018

Layer	Expected	75%	80%	85%	90%
$1M-2M	$0.192	$0.246	$0.266	$0.290	$0.322
$1M-3M	0.305	0.391	0.422	0.461	0.512
$1M-4M	0.355	0.425	0.455	0.491	0.536
$1M-5M	0.384	0.492	0.531	0.580	0.644
$5M-10M	0.125	0.160	0.173	0.189	0.210
$6M-10M	0.097	0.124	0.134	0.147	0.163
$7M-10M	0.071	0.091	0.098	0.107	0.119
$8M-10M	0.046	0.059	0.064	0.070	0.077
$9M-10M	0.023	0.029	0.032	0.035	0.039
$10M-15M	0.106	0.136	0.147	0.160	0.178

The following table details the calculation of our funding guidelines in dollars at various confidence levels for the program's 2017-18 claims by different layers:

Funding Amount Guidelines for Discounted Claims Incurred in 2017-2018

Layer	Expected	75%	80%	85%	90%
$1M-2M	$2,371,000	$3,038,000	$3,285,000	$3,581,000	$3,976,000
$1M-3M	3,766,000	4,828,000	5,211,000	5,693,000	6,323,000
$1M-4M	4,384,000	5,619,000	6,063,000	6,619,000	7,360,000
$1M-5M	4,742,000	6,076,000	6,557,000	7,162,000	7,953,000
$5M-10M	1,544,000	1,976,000	2,136,000	2,334,000	2,593,000
$6M-10M	1,198,000	1,531,000	1,655,000	1,815,000	2,013,000
$7M-10M	877,000	1,124,000	1,210,000	1,321,000	1,470,000
$8M-10M	568,000	729,000	790,000	864,000	951,000
$9M-10M	284,000	358,000	395,000	432,000	482,000
$10M-15M	1,309,000	1,679,000	1,815,000	1,976,000	2,198,000

As with the program's outstanding claims, the Authority should fund a margin for adverse experience in addition to the expected cost of claims. We would recommend funding excess liability programs at the 80% to 90% confidence level.

The analysis which made it possible for us to draw our conclusions is based on the data provided by the Authority's program manager Alliant Insurance Services (Alliant). We have accepted all of this information without audit.

All actuarial estimates of liability claims costs are subject to uncertainty because of the complexity of the process that determines the costs. This is especially true of excess liability claims costs. For this reason, sound management practices suggest that actual funding should be in excess of expected claim activity. We generally recommend funding at the 80% to 90% confidence levels for excess liability programs, after recognition of investment income.

The first section of the attached report outlines the scope of our study, its background, and our conclusions, recommendations, detailed funding recommendations, assumptions, and approach to the project. The entire report has been developed for the internal use of the ACCEL, its auditors, and the representatives of its members. It is not intended for general circulation.

We appreciate the opportunity to be of service to ACCEL in preparing this report. Please feel free to call Mike Harrington at (916) 244-1162, Derek Burkhalter at (916) 244-1167, or David Kim at (916) 244-1166 with any questions you may have concerning this report.

Sincerely,

Bickmore

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

Derek Burkhalter, ACAS, MAAA
Manager, Property and Casualty Actuarial Services, Bickmore
Associate, Casualty Actuarial Society
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David Kim, MA
Senior Actuarial Analyst, Property and Casualty Actuarial Services, Bickmore

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I. BACKGROUND AND PURPOSE OF STUDY

The Authority for California Cities Excess Liability (ACCEL, the Authority) began operations on April 1, 1986. Its purpose is to provide excess liability coverage and to purchase commercial excess insurance on a group basis for California cities. The Authority provides coverage above each member's self-insured retention (SIR), subject to an upper pool limit. Currently the pool covers the layer from $1,000,000 to $5,000,000 for each of its members.

The program currently includes twelve members: Anaheim, Bakersfield, Burbank, Modesto, Monterey, Mountain View, Ontario, Palo Alto, Santa Barbara, Santa Cruz, Santa Monica, and Visalia.

ACCEL provided an optional coverage of $500,000 excess of $500,000 per occurrence (the $500K pool) and operated during program years 1986-87 to 1989-90. This pool was funded by those members with $500,000 self-insured retentions during that period. This coverage is no longer available.

Prior to July 1, 1990, the Authority pooled losses incurred by its members up to $10,000,000. Effective July 1, 1990, ACCEL created a reinsurance pool within the $9,000,000 excess of $1,000,000 layer by purchasing $5,000,000 excess of $5,000,000 coverage. On July 1, 1997, ACCEL further reduced its exposure and purchased coverage of $17,000,000 excess of $3,000,000 coverage.

Due to favorable market conditions, ACCEL purchased coverage of $19,000,000 excess of $1,000,000 effective July 1, 1998. Six members with an SIR of $500,000 purchased additional coverage of $500,000 excess of $500,000. On July 1, 2000, nine members purchased insurance of $19,500,000 excess of $500,000 and two members had coverage of $19,000,000 excess of $1,000,000. The ACCEL layer was fully insured with these limits through June 30, 2003.

Effective July 1, 2003, ACCEL purchased reinsurance covering $20,000,000 excess of $2,000,000 and pooled losses in the layer $1,000,000 excess of $1,000,000. All members had an SIR of $1,000,000. Effective July 1, 2004, ACCEL pooled losses in the layer $2,000,000 excess of $1,000,000. ACCEL has pooled losses in the layer $4,000,000 excess of $1,000,000 for the period between 2005-06 and 2015-16 years. For the 2016-17 year, ACCEL pooled losses in the layer $2,000,000 excess of $1,000,000.

The purpose of this study is to provide a guide to ACCEL in evaluating the adequacy of its established funding for its outstanding claims liabilities as of June 30, 2017 and in determining its contribution level for the 2017-18 fiscal year.

II. CONCLUSIONS AND RECOMMENDATIONS

A. LIABILITY FOR OUTSTANDING CLAIMS

At the undiscounted expected level, we estimate the program's liability for outstanding loss and allocated loss adjustment expenses (ALAE) to be approximately $17,294,000 as of June 30, 2017. We understand the Authority has chosen to record its liability with recognition of investment income at 2% per year. Discounted for anticipated investment income, we estimate the program's liability for outstanding loss and ALAE will be $15,959,000 as of that date. Further, we recommend the Authority fund a risk margin for potential adverse experience. Including a margin for adverse experience at the 85% confidence level, the Authority's required funding as of June 30, 2017 is projected to be $23,252,000.

Historically, ACCEL's outstanding liability has been comprised the liabilities of two separately funded pools:

- The first pool covered the layer from $500,000 to $1,000,000 per occurrence (the $500K pool) and operated during program years 1986-87 to 1989-90. This pool was funded by those members with $500,000 self-insured retentions during that period. All claims for this pool have been closed and there are no unpaid losses remaining.

- The second pool is for the layer above $1,000,000 per occurrence (the $1,000K pool) and is funded by all members.

Our estimates of the program's expected claims liabilities, on both undiscounted and discounted bases, by program year are displayed in the following tables as of December 31, 2016 and June 30, 2017:

Outstanding Liability at the Expected Level as of December 31, 2016 - $500K pool

Program Year	Undiscounted	Discounted
1986-1987	$0	$0
1987-1988	0	0
1988-1989	0	0
1989-1990	0	0
All Years	$0	$0

Outstanding Liability at the Expected Level as of December 31, 2016 - $1,000K pool

Program Year	Undiscounted	Discounted
1986-1987	$0	$0
1987-1988	0	0
1988-1989	0	0
1989-1990	0	0
1990-1991	0	0
1991-1992	1,809	1,676
1992-1993	5,442	5,137
1993-1994	832	782
1994-1995	808	765
1995-1996	859	815
1996-1997	1,030	977
1997-1998	3,537	3,357
1998-2003	0	0
2003-2004	34,915	33,169
2004-2005	1,309,378	1,241,945
2005-2006	42,247	39,860
2006-2007	50,902	48,051
2007-2008	399,868	378,275
2008-2009	66,065	62,431
2009-2010	423,000	400,158
2010-2011	562,841	534,136
2011-2012	1,209,726	1,152,869
2012-2013	1,271,638	1,211,235
2013-2014	1,861,000	1,760,506
2014-2015	3,189,930	2,984,180
2015-2016	4,538,000	4,174,960
2016-2017	1,973,000	1,779,646
All Years	$16,946,827	$15,814,930

Note that the $1,000K pool has no outstanding liability associated with the 1998-99 through 2002-03 program years. Due to favorable market conditions, ACCEL purchased complete reinsurance for its members during that time.

Outstanding Liability at the Expected Level as of June 30, 2017 - $500K pool

Program Year	Undiscounted	Discounted
1986-1987	$0	$0
1987-1988	0	0
1988-1989	0	0
1989-1990	0	0
All Years	$0	$0

Outstanding Liability at the Expected Level as of June 30, 2017 - $1,000K pool

Program Year	Undiscounted	Discounted
1986-1987	$0	$0
1987-1988	0	0
1988-1989	0	0
1989-1990	0	0
1990-1991	0	0
1991-1992	0	0
1992-1993	5,442	5,094
1993-1994	832	786
1994-1995	808	767
1995-1996	859	815
1996-1997	1,030	977
1997-1998	1,769	1,678
1998-2003	0	0
2003-2004	29,782	28,323
2004-2005	1,095,949	1,036,768
2005-2006	38,783	36,495
2006-2007	47,033	44,541
2007-2008	326,692	308,724
2008-2009	57,609	54,440
2009-2010	359,550	340,494
2010-2011	494,737	470,495
2011-2012	988,346	943,871
2012-2013	1,022,397	971,277
2013-2014	1,626,514	1,532,176
2014-2015	2,899,646	2,693,771
2015-2016	4,365,556	3,977,022
2016-2017	3,930,216	3,509,683
All Years	$17,293,551	$15,958,197

The tables below shows our estimates of the program's claims liabilities as of December 31, 2016 and June 30, 2017, on both undiscounted and discounted bases for various confidence levels:

Outstanding Liability as of December 31, 2016
at Various Confidence Levels
$500K and $1,000K Pools Combined

Confidence Level	Undiscounted	Discounted
Expected	$16,947,000	$15,815,000
70%	19,929,000	18,598,000
75%	21,251,000	19,832,000
80%	22,777,000	21,255,000
85%	24,692,000	23,042,000
90%	27,217,000	25,399,000
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Outstanding Liability as of June 30, 2017
at Various Confidence Levels
$500K and $1,000K Pools Combined

Confidence Level	Undiscounted	Discounted
Expected	$17,294,000	$15,959,000
70%	20,337,000	18,767,000
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80%	23,243,000	21,448,000
85%	25,197,000	23,252,000
90%	27,773,000	25,629,000
95%	32,010,000	29,539,000

The estimated program outstanding liabilities shown above do not include any provision for reinsurance premiums, claims administration fees, and other administrative costs associated with the ACCEL program.

According to the accounting regulations of the Governmental Accounting Standards Board, unallocated loss adjustment expenses (ULAE) associated with the claims should be recognized as part of the program's claims liability. ULAE is the additional cost to administer all claims to final settlement, which may be years into the future (e.g. claims adjusters' salaries, taxes, etc.). Our undiscounted expected estimate of unpaid ULAE is $560,000 as of June 30, 2017. This estimate is 3.5% of the sum of all IBNR reserves and half of case reserves as of June 30, 2017.

B. FUNDING RATES FOR FUTURE CLAIMS

Our funding guidelines are displayed as rates per $100 of payroll and dollars for various layers. The funding guidelines include anticipated investment income at 2% per year.

Funding Rate Guidelines for Discounted Claims Incurred in 2017-2018

Layer	Expected	75%	80%	85%	90%
$1M-2M	$0.192	$0.246	$0.266	$0.290	$0.322
$1M-3M	0.305	0.391	0.422	0.461	0.512
$1M-4M	0.355	0.425	0.455	0.491	0.536
$1M-5M	0.384	0.492	0.531	0.580	0.644
$5M-10M	0.125	0.160	0.173	0.189	0.210
$6M-10M	0.097	0.124	0.134	0.147	0.163
$7M-10M	0.071	0.091	0.098	0.107	0.119
$8M-10M	0.046	0.059	0.064	0.070	0.077
$9M-10M	0.023	0.029	0.032	0.035	0.039
$10M-15M	0.106	0.136	0.147	0.160	0.178

Funding Amount Guidelines for Discounted Claims Incurred in 2017-2018

Layer	Expected	75%	80%	85%	90%
$1M-2M	$2,371,000	$3,038,000	$3,285,000	$3,581,000	$3,976,000
$1M-3M	3,766,000	4,828,000	5,211,000	5,693,000	6,323,000
$1M-4M	4,384,000	5,619,000	6,063,000	6,619,000	7,360,000
$1M-5M	4,742,000	6,076,000	6,557,000	7,162,000	7,953,000
$5M-10M	1,544,000	1,976,000	2,136,000	2,334,000	2,593,000
$6M-10M	1,198,000	1,531,000	1,655,000	1,815,000	2,013,000
$7M-10M	877,000	1,124,000	1,210,000	1,321,000	1,470,000
$8M-10M	568,000	729,000	790,000	864,000	951,000
$9M-10M	284,000	358,000	395,000	432,000	482,000
$10M-15M	1,309,000	1,679,000	1,815,000	1,976,000	2,198,000

The estimated program costs shown above do not include any provision for reinsurance premiums, claims administration fees, and other administrative costs associated with the ACCEL program.

C. FUNDING GUIDELINES

We generally recommend funding of excess liability programs to the 85% confidence level, with a recommended range of the 80% to 90% confidence levels. We generally consider funding to the 75% confidence level to be marginally acceptable, and to the 95% confidence level to be conservative. However, these should only be considered general guidelines, as we also strongly believe that the confidence level to which any future year is funded should be evaluated in light of the relative certainty of the underlying assumptions, the other budgetary constraints of those contributing to the program, and the relative risk it is believed appropriate to assume at a particular point in time. This means formulating both short-term and long-term funding goals, which may be the same in some years and different in others.

In general, we recommend considerable conservatism in refunding excess contributions, especially in light of the hardship imposed upon the members when assessments are necessary. It is always possible to refund excess contributions later, but contributions that appear to be excess that are refunded too soon may prove to be very difficult to re-collect later. For years for which assessments have not yet been levied, we recommend a staggered schedule of returns that begins when a year reaches a certain level of maturity. For example, the Authority might develop a guideline returning excess contributions on a year five to six years old that is funded above the 90% confidence level, on a year seven to nine years old that is funded above the 85% confidence level, and on a year ten or more years old that is funded above the 80% confidence level. Refunds are made at the discretion of the Board.

We understand the program's outstanding loss and loss adjustment expense liabilities are funded at the 85% discounted confidence level. This target applies to the outstanding liabilities in total, not on an individual program year basis. Funding in excess of the 90% discounted confidence level is available for dividends at the Board's discretion.

D. COMPARISON WITH PRIOR RESULTS

The following table details the changes in our estimates of the Authority's ultimate losses by program year from those of the prior report:

Comparison with Prior
$500K and $1,000 Pools Combined
Undiscounted Estimated Ultimate Losses

Program Year	Prior Report	Current Report	Change
1987-1988	$0	$0	$0
1987-1988	1,224,542	1,224,542	0
1988-1989	0	0	0
1989-1990	0	0	0
1990-1991	0	0	0
1991-1992	2,503,000	2,503,000	0
1992-1993	10,545,000	10,544,000	(1,000)
1993-1994	878,000	878,000	0
1994-1995	1,441,000	1,440,000	(1,000)
1995-1996	913,000	913,000	0
1996-1997	2,391,000	2,390,000	(1,000)
1997-1998	2,088,000	2,087,000	(1,000)
1998-2003	0	0	0
2003-2004	3,565,000	3,561,000	(4,000)
2004-2005	8,968,000	8,963,000	(5,000)
2005-2006	4,503,000	4,500,000	(3,000)
2006-2007	685,000	672,000	(13,000)
2007-2008	2,777,000	5,251,000	2,474,000
2008-2009	3,286,000	3,254,000	(32,000)
2009-2010	585,000	423,000	(162,000)
2010-2011	1,150,000	938,000	(212,000)
2011-2012	2,107,000	1,212,000	(895,000)
2012-2013	3,414,000	2,859,000	(555,000)
2013-2014	2,942,000	1,861,000	(1,081,000)
2014-2015	4,177,000	7,261,000	3,084,000
2015-2016	4,577,000	4,538,000	(39,000)
All Years	$64,719,542	$67,272,542	$2,553,000

As shown, overall we have increased our estimates of the program's ultimate losses by $2,553,000 from those displayed in our prior actuarial report dated April 11, 2016. The increase is mainly due to adverse loss development in the 2007-08 and 2014-15 program years, offset by favorable loss development in all other years.

At the time of the prior report, we estimated the liability for outstanding claims as of June 30, 2016 to be $16,483,000 at the discounted, expected level. Our current estimate as of June 30, 2017, is $15,958,000, a decrease in our assessment of the Authority's outstanding liabilities, as shown below:

Comparison with Prior
$500K and $1,000 Pools Combined
Outstanding Claim Liabilities for Loss and ALAE

	Prior Report at June 30, 2016	Current Report at June 30, 2017	Change
Case Reserves:	$2,728,000	$2,615,000	($113,000)
IBNR Reserves:	15,146,000	14,679,000	(467,000)
Total Reserves:	$17,874,000	$17,294,000	($580,000)
Offset for Investment Income:	(1,391,000)	(1,336,000)	55,000
Total Outstanding Claim Liabilities:	$16,483,000	$15,958,000	($525,000)

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

Estimated case reserves have decreased since the prior evaluation. Our estimate of IBNR reserves has also decreased as a result of the change in ACCEL pool coverage for the 2016-17 year. The overall result is a decrease of $580,000 in total claim reserves. This decrease in reserves leads to a smaller offset for investment income. The net change due to the above factors is an overall decrease of $525,000 in our estimate of outstanding claim liabilities for loss and ALAE.

The following table displays a comparison of the Authority's projected funding rates from current and prior reports by various layers.

Comparison with Prior
Undiscounted Expected Funding Rates

Layer	Prior Report 2016-17	Current Report 2017-18	Percent Change
$1M-2M	$0.203	$0.213	4.9%
$1M-3M	0.323	0.338	4.6%
$1M-4M	0.380	0.394	3.7%
$1M-5M	0.407	0.426	4.7%
$5M-10M	0.133	0.139	4.5%

As you can see, our projected funding rates for the 2017-18 program year have increased for all layers.

E. 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 an excess pooling 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 you have provided to us. We have accepted all of this information without audit and relied on its accuracy in preparing our estimates for this report. As always, the accuracy and relevance of our conclusions and recommendations are highly dependent on the accuracy and relevance of the underlying data.

- In ACCEL's case, we were provided a list of claims with incurred losses greater than $25,000 as of December 31, 2016 from individual member cities. This file included ground up losses and allocated loss adjustment expenses reported separately for each claimant. We were also provided with pool loss runs as of December 31, 2016.

- We were provided with payrolls by City for the 1986-87 through 2015-16 program years. The estimated payroll for 2016-17 and 2017-18 was calculated using a 1.5% trend per year.

- We have assumed that the future development of incurred and paid losses can be reasonably predicted on the basis of the development of such losses in the recent past. We have also assumed that the historical development patterns for a large group of California public entities with a self-insured excess liability program in the aggregate form a reasonable basis of comparison to the patterns from the Authority's data.

- We have assumed that there is a continuing relationship between past and future loss costs and between loss costs and payroll. These assumptions can be tenuous in a changing legal and social environment such as we face today.

- It is not possible to predict future claims costs precisely. Most of the cost of liability claims arises from a small number of incidents involving serious injury. Thus, changes in the circumstances surrounding these claims can have large effects on total costs. Therefore, the actual costs of the covered liability claims could differ significantly from our estimates.

- We cannot predict and have not attempted to predict the impact of future law changes and court rulings on liability claims costs. This is one major reason why we believe our funding recommendations are reasonable now, but should not be extrapolated into the future.

- At your instruction, we have assumed that funds held for investment will generate an annual return of 2% in the long run.

- We estimate that the costs associated with liability claims in the $100,000 to $1,000,000 per occurrence layer are increasing at 4% per year after changes in exposure. 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 payments and allocated loss adjustment expenses. We have not provided estimates for claims adjustment expenses not allocated to particular cases, reinsurance premiums, and Authority administrative expenses.

- We have assumed that all reinsurance coverage purchased by the Authority will prove to be valid and fully collectible.

- Our funding recommendations do not include provision for catastrophic events not in the program's history, such as earthquakes, flooding, fire or mass civil disorder.

F. OVERALL ANALYTICAL APPROACH

The approach we have taken in developing this analysis is firmly grounded in the Authority's loss and exposure data. Our approach to the problem of estimating the program's ultimate pooled loss costs is a multi-step process. We estimated the cost of the $100,000 to $1 million layer. We then constructed a mathematical equation for the distribution of the Authority's losses by size by trending and developing the Authority's individual claims from the 2007-08 through 2015-16 program years.

Next, using the loss distribution, the $100,000 – $1,000,000 ultimate loss rate, and our selected loss development patterns, we then estimated the ultimate losses of the excess layers for which the Authority is responsible.

The following actuarial techniques were applied to ACCEL's loss data to estimate the ultimate cost of claims in the $100,000 - $1,000,000 layer:

- Incurred Loss Development
- Paid Loss Development
- Bornhuetter-Ferguson Based on Incurred Losses
- Bornhuetter-Ferguson Based on Paid Losses
- Frequency Times Severity

Actuarial judgment was used to select among the ultimate losses indicated by the above methods.

The following actuarial techniques were applied to ACCEL's loss data to estimate the ultimate losses in the program's actual pooled layers:

- Incurred Loss Development
- Paid Loss Development
- Bornhuetter-Ferguson

Again, actuarial judgment was used to select among the ultimate losses indicated by the above methods, with heavy emphasis applied to the two methods based on incurred losses.

Authority for California Cities Excess Liability

Projected 2017-18 Funding Guidelines

Layer	Estimated 2017-18 Payroll (A)	Expected Ultimate Losses (B)	Discount Factor (C)	Discounted Expected Ultimate Losses (D)	70% Confidence Level (E)	75% Confidence Level (E)	80% Confidence Level (E)	85% Confidence Level (E)	90% Confidence Level (E)	95% Confidence Level (E)
$1M-2M	$12,349,080	$2,630,354	90.2%	$2,371,023	$2,840,288	$3,037,874	$3,284,855	$3,581,233	$3,976,404	$4,630,905
$1M-3M	12,349,080	4,173,989	90.2%	3,766,469	4,507,414	4,828,490	5,211,312	5,692,926	6,322,729	7,360,052
$1M-4M	12,349,080	4,865,538	90.2%	4,383,923	5,248,359	5,618,831	6,063,398	6,619,107	7,360,052	8,557,912
$1M-5M	12,349,080	5,260,708	90.2%	4,742,047	5,668,228	6,075,747	6,557,361	7,162,466	7,952,808	9,261,810
$5M-10M	12,349,080	1,716,522	90.2%	1,543,635	1,852,362	1,975,853	2,136,391	2,333,976	2,593,307	3,013,176
$6M-10M	12,349,080	1,333,701	90.2%	1,197,861	1,432,493	1,531,286	1,654,777	1,815,315	2,012,900	2,333,976
$7M-10M	12,349,080	975,577	90.2%	876,785	1,049,672	1,123,766	1,210,210	1,321,352	1,469,541	1,716,522
$8M-10M	12,349,080	629,803	90.2%	568,058	679,199	728,596	790,341	864,436	950,879	1,111,417
$9M-10M	12,349,080	308,727	90.2%	284,029	345,774	358,123	395,171	432,218	481,614	555,709
$10M-15M	12,349,080	1,457,191	90.2%	1,309,002	1,568,333	1,679,475	1,815,315	1,975,853	2,198,136	2,556,260

(A) Provided by ACCEL.
(B) (A) times funding rates from Exhibit 1, Page 2, (A).
(C) From Exhibit 3.
(D) (A) times funding rates from Exhibit 1, Page 2, (C).
(E) (A) times funding rates from Exhibit 1, Page 2, (D).

Authority for California Cities Excess Liability

Projected 2017-18 Funding Guidelines
Loss Rates per $100 of Payroll

Layer	Expected Loss Rate Per $100 of Payroll (A)	Discount Factor (B)	Discounted Expected Loss Rate Per $100 of Payroll (C)	70% Confidence Level (D)	75% Confidence Level (D)	80% Confidence Level (D)	85% Confidence Level (D)	90% Confidence Level (D)	95% Confidence Level (D)
$1M-2M	$0.213	90.2%	$0.192	$0.230	$0.246	$0.266	$0.290	$0.322	$0.375
$1M-3M	0.338	90.2%	0.305	0.365	0.391	0.422	0.461	0.512	0.596
$1M-4M	0.394	90.2%	0.355	0.425	0.455	0.491	0.536	0.596	0.693
$1M-5M	0.426	90.2%	0.384	0.459	0.492	0.531	0.580	0.644	0.750
$5M-10M	0.139	90.2%	0.125	0.150	0.160	0.173	0.189	0.210	0.244
$6M-10M	0.108	90.2%	0.097	0.116	0.124	0.134	0.147	0.163	0.189
$7M-10M	0.079	90.2%	0.071	0.085	0.091	0.098	0.107	0.119	0.139
$8M-10M	0.051	90.2%	0.046	0.055	0.059	0.064	0.070	0.077	0.090
$9M-10M	0.025	90.2%	0.023	0.028	0.029	0.032	0.035	0.039	0.045
$10M-15M	0.118	90.2%	0.106	0.127	0.136	0.147	0.160	0.178	0.207

Notes:
(A) From Exhibit 1, Page 3 and members' loss distribution.
(B) From Exhibit 3.
(C) (A) * (B)
(D) (C) times Confidence Level Factor from Exhibit 4.

Authority for California Cities Excess Liability
ACCEL Pooled Layer

Selected Base Loss Rate ($100K - $1M Layer)

(A)	Estimated based on $1M Ultimate Less $100K Ultimate	N/A
(B)	Estimated based on $100K - $1M Analysis:	$0.926
(C)	Selected Base Loss Rate ($100K - $1M Layer):	$0.926

Authority for California Cities Excess Liability
ACCEL Pooled Layer

Funding Guidelines for Outstanding Losses
as of December 31, 2016 and June 30, 2017

		December 31, 2016	June 30, 2017
(A)	Estimated Ultimate Losses Incurred as of:	$69,246,000	$71,219,000
(B)	Estimated Paid Losses as of:	52,299,000	53,925,000
(C)	Estimated Liability for Claims Outstanding as of:	$16,947,000	$17,294,000
(D)	Outstanding Liability Discount Factor:	93.3%	92.3%
(E)	Discounted Outstanding Liability for Claims as of:	$15,815,000	$15,959,000
(F)	Risk Margin at 85% Confidence Level:	7,227,000	7,293,000
(G)	Required Funding at the 85% confidence Level:	$23,042,000	$23,252,000

Notes:

(A) From Appendix A, Page 1, Column (A).
(B) Provided by ACCEL
(C) (A) - (B)
(D) From Exhibit 3
(E) (C) * (D)
(F) (E) * Confidence Level Factor from Exhibit 4
(G) (E) + (F)

Authority for California Cities Excess Liability
ACCEL Pooled Layer

Discount Factors

	Age	Accident Year Paid Loss Development Factor	Payment Pattern	Full Value Reserve	2.0% Discounted Reserve	Discounted Factor
1987-1988	30.0	1.000	0.0%	0.0%	0.0%	100.0%
1988-1989	29.0	1.000	0.0%	0.0%	0.0%	100.0%
1989-1990	28.0	1.000	0.0%	0.0%	0.0%	100.0%
1990-1991	27.0	1.000	0.0%	0.0%	0.0%	100.0%
1991-1992	26.0	1.000	0.0%	0.0%	0.0%	100.0%
1992-1993	25.0	1.000	0.0%	0.0%	0.0%	92.6%
1993-1994	24.0	1.000	0.0%	0.0%	0.0%	83.4%
1994-1995	23.0	1.000	0.0%	0.1%	0.1%	83.4%
1995-1996	22.0	1.001	0.0%	0.1%	0.1%	90.1%
1996-1997	21.0	1.001	0.1%	0.2%	0.2%	95.2%
1997-1998	20.0	1.002	0.1%	0.3%	0.3%	93.6%
1998-1999	19.0	1.003	0.2%	0.5%	0.5%	94.5%
1999-2000	18.0	1.005	0.2%	0.7%	0.7%	94.9%
2000-2001	17.0	1.007	0.3%	1.0%	0.9%	94.9%
2001-2002	16.0	1.010	0.4%	1.4%	1.3%	94.9%
2002-2003	15.0	1.014	0.6%	2.0%	1.9%	94.9%
2003-2004	14.0	1.020	1.0%	2.9%	2.8%	95.1%
2004-2005	13.0	1.030	0.9%	3.8%	3.6%	94.6%
2005-2006	12.0	1.040	0.9%	4.8%	4.5%	94.1%
2006-2007	11.0	1.050	2.8%	7.6%	7.2%	94.7%
2007-2008	10.0	1.082	2.7%	10.2%	9.7%	94.5%
2008-2009	9.0	1.114	4.3%	14.5%	13.7%	94.5%
2009-2010	8.0	1.170	7.0%	21.6%	20.4%	94.7%
2010-2011	7.0	1.275	12.5%	34.1%	32.4%	95.1%
2011-2012	6.0	1.517	22.0%	56.1%	53.6%	95.5%
2012-2013	5.0	2.276	18.8%	74.9%	71.1%	95.0%
2013-2014	4.0	3.983	16.7%	91.6%	86.3%	94.2%
2014-2015	3.0	11.949	7.5%	99.2%	92.1%	92.9%
2015-2016	2.0	119.490	0.8%	100.0%	91.1%	91.1%
2016-2017	1.0	2,389.800	0.0%	100.0%	89.3%	89.3%

Discount Factor for Future Funding: 0.902

Accident Year	Accident Year Paid Loss Development Factor	Full Value Reserve	2.0% Discounted Reserve	12/31/16 Outstanding Loss	Discounted Factor	12/31/16 Discounted Outstanding Loss	6/30/17 Outstanding Loss	Discounted Factor	6/30/17 Discounted Outstanding Loss
1986-1987	1.000	0.00%	0.00%	0	100.0%	0	0	100.0%	0
1987-1988	1.000	0.00%	0.00%	0	96.3%	0	0	92.6%	0
1988-1989	1.000	0.00%	0.00%	0	88.0%	0	0	83.4%	0
1989-1990	1.000	0.00%	0.00%	0	83.4%	0	0	83.4%	0
1986-1987	1.000	0.00%	0.00%	0	100.0%	0	0	100.0%	0
1987-1988	1.000	0.00%	0.00%	0	96.3%	0	0	92.6%	0
1988-1989	1.000	0.01%	0.01%	0	88.0%	0	0	83.4%	0
1989-1990	1.000	0.02%	0.02%	0	83.4%	0	0	83.4%	0
1990-1991	1.000	0.04%	0.04%	0	86.8%	0	0	90.1%	0
1991-1992	1.001	0.06%	0.06%	1,809	92.7%	1,676	0	95.2%	0
1992-1993	1.001	0.10%	0.10%	5,442	94.4%	5,137	5,442	93.6%	5,094
1993-1994	1.002	0.20%	0.19%	832	94.1%	782	832	94.5%	786
1994-1995	1.003	0.30%	0.29%	808	94.7%	765	808	94.9%	767
1995-1996	1.005	0.50%	0.48%	859	94.9%	815	859	94.9%	815
1996-1997	1.007	0.70%	0.66%	1,030	94.9%	977	1,030	94.9%	977
1997-1998	1.010	0.99%	0.94%	3,537	94.9%	3,357	1,769	94.9%	1,678
2003-2004	1.014	1.38%	1.31%	34,915	95.0%	33,169	29,782	95.1%	28,323
2004-2005	1.020	1.96%	1.86%	1,309,378	94.9%	1,241,945	1,095,949	94.6%	1,036,768
2005-2006	1.030	2.91%	2.77%	42,247	94.4%	39,860	38,783	94.1%	36,495
2006-2007	1.040	3.85%	3.64%	50,902	94.4%	48,051	47,033	94.7%	44,541
2007-2008	1.050	4.76%	4.47%	399,868	94.6%	378,275	326,692	94.5%	308,724
2008-2009	1.082	7.58%	7.17%	66,065	94.5%	62,431	57,609	94.5%	54,440
2009-2010	1.114	10.23%	9.66%	423,000	94.6%	400,158	359,550	94.7%	340,494
2010-2011	1.275	21.57%	20.70%	562,841	94.9%	534,136	494,737	95.1%	470,495
2011-2012	1.517	34.08%	32.68%	1,209,726	95.3%	1,152,869	988,346	95.5%	943,871
2012-2013	2.276	56.06%	53.80%	1,271,638	95.3%	1,211,235	1,022,397	95.0%	971,277
2013-2014	3.983	74.89%	71.39%	1,861,000	94.6%	1,760,506	1,626,514	94.2%	1,532,176
2014-2015	11.949	91.63%	86.56%	3,189,930	93.6%	2,984,180	2,899,646	92.9%	2,693,771
2015-2016	119.490	99.16%	92.32%	4,538,000	92.0%	4,174,960	4,365,556	91.1%	3,977,022
2016-2017	2,389.800	99.96%	91.30%	1,973,000	90.2%	1,779,646	3,930,216	89.3%	3,509,683
			Total	16,946,827		15,814,930	17,293,551		15,958,197
		Discount Factor for Outstanding:		93.3%			92.3%		

Authority for California Cities Excess Liability
ACCEL Pooled Layer

Confidence Level Factors

Probability	Projected Funding Factor	Outstanding Liability Factor
95	1.953	1.851
90	1.678	1.606
85	1.511	1.457
80	1.384	1.344
75	1.282	1.254
70	1.196	1.176
65	1.119	1.108
60	1.049	1.045
55	0.984	0.987
50	0.923	0.932
45	0.865	0.880
40	0.807	0.829
35	0.750	0.777
30	0.692	0.726
25	0.631	0.671

Exhibit 5

Authority for California Cities Excess Liability
ACCEL Pooled Layer

Large Losses

Member (A)	Date of Loss (B)	Fiscal Year (C)	Status (D)	Paid Losses (E)	Reported Incurred Losses (F)
Santa Monica	9/5/07	2007-08	Closed	1,583,936	1,583,936
Bakersfield	11/24/07	2007-08	Closed	3,500,000	3,500,000
Ontario	3/20/08	2007-08	Closed	1,515,035	1,515,035
Ontario	4/26/08	2007-08	Closed	2,242,573	2,242,573
Bakersfield	7/10/08	2008-09	Closed	2,104,604	2,104,604
Mountain View	9/1/08	2008-09	Open	213,124	1,300,000
Anaheim	10/28/08	2008-09	Closed	1,832,712	1,832,712
Burbank	4/10/09	2008-09	Open	1,989,491	1,999,149
Burbank	5/1/09	2008-09	Open	4,522,660	4,690,490
Modesto	12/30/10	2010-11	Open	1,375,244	1,375,729
Santa Cruz	3/25/11	2010-11	Closed	1,203,470	1,203,470
Anaheim	7/21/12	2012-13	Open	577,822	2,000,000
Visalia	10/26/12	2012-13	Open	994,357	3,000,000
Santa Monica	11/20/12	2012-13	Closed	1,279,170	1,279,170
Anaheim	4/30/13	2012-13	Open	2,158,500	3,317,000
Santa Monica	9/24/13	2013-14	Open	107,202	3,000,000
Mountain View	10/1/13	2013-14	Open	76,141	1,600,000
Bakersfield	1/28/14	2013-14	Open	3,184	5,000,000
Santa Monica	4/10/14	2013-14	Open	4,767	1,500,000
Santa Monica	5/26/14	2013-14	Closed	1,000,897	1,000,897
Anaheim	9/17/14	2014-15	Open	0	6,000,000
Burbank	11/18/14	2014-15	Closed	173	1,050,000
Modesto	1/12/15	2014-15	Open	48,758	1,900,000
Santa Monica	4/21/15	2014-15	Open	2,214,252	2,214,252
Santa Cruz	4/26/15	2014-15	Open	53,939	1,000,000
Santa Monica	5/12/15	2014-15	Closed	3,856,820	3,856,820
Anaheim	7/10/15	2015-16	Open	36,624	1,500,000
Ontario	9/7/16	2016-17	Open	0	1,000,000
Ontario	11/1/16	2016-17	Open	0	1,000,000

Authority for California Cities Excess Liability
ACCEL Layer

Outstanding Liability at December 31, 2016

Accident Year	Ultimate Losses (A)	12/31/16 Reported Loss (B)	12/31/16 IBNR (C)	12/31/16 Paid Loss (D)	12/31/16 Case Reserves (E)	12/31/16 Outstanding Loss (F)
1986-1987	0	0	0	0	0	0
1987-1988	500,000	500,000	0	500,000	0	0
1988-1989	0	0	0	0	0	0
1989-1990	0	0	0	0	0	0
Totals	$500,000	$500,000	$0	$500,000	$0	$0
1986-1987	0	0	0	0	0	0
1987-1988	724,542	724,542	0	724,542	0	0
1988-1989	0	0	0	0	0	0
1989-1990	0	0	0	0	0	0
1990-1991	0	0	0	0	0	0
1991-1992	2,503,000	2,501,191	1,809	2,501,191	0	1,809
1992-1993	10,544,000	10,538,558	5,442	10,538,558	0	5,442
1993-1994	878,000	877,168	832	877,168	0	832
1994-1995	1,440,000	1,439,192	808	1,439,192	0	808
1995-1996	913,000	912,141	859	912,141	0	859
1996-1997	2,390,000	2,388,970	1,030	2,388,970	0	1,030
1997-1998	2,087,000	2,083,463	3,537	2,083,463	0	3,537
2003-2004	3,561,000	3,526,085	34,915	3,526,085	0	34,915
2004-2005	8,963,000	8,903,622	59,378	7,653,622	1,250,000	1,309,378
2005-2006	4,500,000	4,457,753	42,247	4,457,753	0	42,247
2006-2007	672,000	621,098	50,902	621,098	0	50,902
2007-2008	5,251,000	5,206,132	44,868	4,851,132	355,000	399,868
2008-2009	3,254,000	3,187,935	66,065	3,187,935	0	66,065
2009-2010	423,000	0	423,000	0	0	423,000
2010-2011	938,000	375,159	562,841	375,159	0	562,841
2011-2012	1,212,000	2,274	1,209,726	2,274	0	1,209,726
2012-2013	2,859,000	1,587,362	1,271,638	1,587,362	0	1,271,638
2013-2014	1,861,000	0	1,861,000	0	0	1,861,000
2014-2015	7,261,000	4,071,070	3,189,930	4,071,070	0	3,189,930
2015-2016	4,538,000	0	4,538,000	0	0	4,538,000
2016-2017	1,973,000	0	1,973,000	0	0	1,973,000
Totals	$68,745,542	$53,403,715	$15,341,827	$51,798,715	$1,605,000	$16,946,827
Grand Totals	$69,245,542	$53,903,715	$15,341,827	$52,298,715	$1,605,000	$16,946,827

Notes:

(A) From Appendix A, Page 3, Column (E).
(B) Provided by ACCEL
(C) (A) - (B)
(D) Provided by ACCEL
(F) (B) - (D)
(F) (D) - (A)

Authority for California Cities Excess Liability
ACCEL Layer

Outstanding Liability at June 30, 2017

Accident Year	Ultimate Losses (A)	6/30/2017 Reported Loss (B)	6/30/2017 IBNR (C)	6/30/2017 Paid Loss (D)	6/30/2017 Case Reserves (E)	6/30/2017 Outstanding Loss (F)
1986-1987	0	0	0	0	0	0
1987-1988	500,000	500,000	0	500,000	0	0
1988-1989	0	0	0	0	0	0
1989-1990	0	0	0	0	0	0
Totals	$500,000	$500,000	$0	$500,000	$0	$0
1986-1987	0	0	0	0	0	0
1987-1988	724,542	724,542	0	724,542	0	0
1988-1989	0	0	0	0	0	0
1989-1990	0	0	0	0	0	0
1990-1991	0	0	0	0	0	0
1991-1992	2,503,000	2,503,000	0	2,503,000	0	0
1992-1993	10,544,000	10,544,000	0	10,538,558	5,442	5,442
1993-1994	878,000	878,000	0	877,168	832	832
1994-1995	1,440,000	1,440,000	0	1,439,192	808	808
1995-1996	913,000	913,000	0	912,141	859	859
1996-1997	2,390,000	2,390,000	0	2,388,970	1,030	1,030
1997-1998	2,087,000	2,087,000	0	2,085,232	1,769	1,769
2003-2004	3,561,000	3,536,490	24,510	3,531,218	5,272	29,782
2004-2005	8,963,000	8,908,966	54,034	7,867,051	1,041,915	1,095,949
2005-2006	4,500,000	4,461,217	38,783	4,461,217	0	38,783
2006-2007	672,000	624,967	47,033	624,967	0	47,033
2007-2008	5,251,000	5,209,093	41,907	4,924,308	284,785	326,692
2008-2009	3,254,000	3,197,647	56,353	3,196,391	1,255	57,609
2009-2010	423,000	68,949	354,051	63,450	5,499	359,550
2010-2011	938,000	443,263	494,737	443,263	0	494,737
2011-2012	1,212,000	336,158	875,842	223,654	112,505	988,346
2012-2013	2,859,000	1,938,334	920,666	1,836,603	101,731	1,022,397
2013-2014	1,861,000	550,856	1,310,144	234,486	316,370	1,626,514
2014-2015	7,261,000	4,664,397	2,596,603	4,361,354	303,043	2,899,646
2015-2016	4,538,000	549,098	3,988,902	172,444	376,654	4,365,556
2016-2017	3,946,000	71,028	3,874,972	15,784	55,244	3,930,216
Totals	$70,718,542	$56,040,005	$14,678,537	$53,424,991	$2,615,014	$17,293,551
Grand Totals	$71,218,542	$56,540,005	$14,678,537	$53,924,991	$2,615,014	$17,293,551

Notes:

(A) From Appendix A, Page 3, Column (E).
(B) Projected based on Appendix A, Page 4, Column (B).
(C) (A) - (B)
(D) Projected based on Appendix A, Page 5, Column (B).
(F) (B) - (D)
(F) (D) - (A)

Authority for California Cities Excess Liability
ACCEL Layer

Estimated Ultimate Losses

Accident Year	Reported Loss Development Method (A)	Paid Loss Development Method (B)	Expected Loss Method (C)	Prior Estimate of Ultimate Losses (D)	Selected Estimate of Ultimate Losses (E)
1986-1987	0	0		0	0
1987-1988	500,000	500,000		500,000	500,000
1988-1989	0	0		0	0
1989-1990	0	0		0	0
Totals	$500,000	$500,000		$500,000	$500,000
1986-1987	0	0		0	0
1987-1988	724,542	724,542		724,542	724,542
1988-1989	0	0		0	0
1989-1990	0	0		0	0
1990-1991	0	0		0	0
1991-1992	2,501,191	2,503,692		2,503,000	2,503,000
1992-1993	10,538,558	10,549,097		10,545,000	10,544,000
1993-1994	877,168	878,045		878,000	878,000
1994-1995	1,439,192	1,440,631		1,441,000	1,440,000
1995-1996	912,141	913,053		913,000	913,000
1996-1997	2,388,970	2,391,359		2,391,000	2,390,000
1997-1998	2,083,463	2,087,630		2,088,000	2,087,000
2003-2004	3,561,346	3,596,607	3,536,000	3,565,000	3,561,000
2004-2005	9,001,562	7,883,231	8,924,000	8,968,000	8,963,000
2005-2006	4,511,246	4,636,063	4,489,000	4,503,000	4,500,000
2006-2007	629,172	652,153	658,000	685,000	672,000
2007-2008	5,284,224	5,248,925	5,251,000	2,777,000	5,251,000
2008-2009	3,251,694	3,551,360	3,254,000	3,286,000	3,254,000
2009-2010	0	0	100,000	585,000	423,000
2010-2011	390,165	478,328	513,000	1,150,000	938,000
2011-2012	2,483	3,450	317,000	2,107,000	1,212,000
2012-2013	1,950,868	3,612,836	2,303,000	3,414,000	2,859,000
2013-2014	0	0	1,861,000	2,942,000	1,861,000
2014-2015	15,014,106	48,645,215	7,261,000	4,177,000	7,261,000
2015-2016	0	0	4,538,000	4,577,000	4,538,000
2016-2017	0	0	3,946,000		3,946,000
Totals	$65,062,091	$99,796,217	$46,951,000	$64,219,542	$70,718,542
Grand Totals	$65,562,091	$100,296,217		$64,719,542	$71,218,542

Notes:

(A) From Appendix A, Page 4, Column (C).
(B) From Appendix A, Page 5, Column (C).
(C) From Appendix A, Page 6, Column (K).
(D) From prior actuarial study.
(E) Selected based on (A) through (D).

Authority for California Cities Excess Liability
ACCEL Layer

Reported Loss Development

Accident Year	Reported Losses as of 12/31/16 (A)	Reported Loss Development Factor (B)	Estimated Ultimate Losses (C)
1986-1987	0	1.000	0
1987-1988	500,000	1.000	500,000
1988-1989	0	1.000	0
1989-1990	0	1.000	0
Totals	$500,000		$500,000
1986-1987	0	1.000	0
1987-1988	724,542	1.000	724,542
1988-1989	0	1.000	0
1989-1990	0	1.000	0
1990-1991	0	1.000	0
1991-1992	2,501,191	1.000	2,501,191
1992-1993	10,538,558	1.000	10,538,558
1993-1994	877,168	1.000	877,168
1994-1995	1,439,192	1.000	1,439,192
1995-1996	912,141	1.000	912,141
1996-1997	2,388,970	1.000	2,388,970
1997-1998	2,083,463	1.000	2,083,463
2003-2004	3,526,085	1.010	3,561,346
2004-2005	8,903,622	1.011	9,001,562
2005-2006	4,457,753	1.012	4,511,246
2006-2007	621,098	1.013	629,172
2007-2008	5,206,132	1.015	5,284,224
2008-2009	3,187,935	1.020	3,251,694
2009-2010	0	1.030	0
2010-2011	375,159	1.040	390,165
2011-2012	2,274	1.092	2,483
2012-2013	1,587,362	1.229	1,950,868
2013-2014	0	1.844	0
2014-2015	4,071,070	3.688	15,014,106
2015-2016	0	25.816	0
2016-2017	0	516.320	0
Totals	$53,403,715		$65,062,091
Grand Totals	$53,903,715		$65,562,091

Notes:

(A) Provided by ACCEL
(B) (C) from Appendix B, Page 3.
(C) (A) x (B).

Authority for California Cities Excess Liability
ACCEL Layer

Paid Loss Development

Accident Year	Paid Losses as of 12/31/16 (A)	Paid Loss Development Factor (B)	Estimated Ultimate Losses (C)
1986-1987	0	1.000	0
1987-1988	500,000	1.000	500,000
1988-1989	0	1.000	0
1989-1990	0	1.000	0
Totals	$500,000		$500,000
1986-1987	0	1.000	0
1987-1988	724,542	1.000	724,542
1988-1989	0	1.000	0
1989-1990	0	1.000	0
1990-1991	0	1.000	0
1991-1992	2,501,191	1.001	2,503,692
1992-1993	10,538,558	1.001	10,549,097
1993-1994	877,168	1.001	878,045
1994-1995	1,439,192	1.001	1,440,631
1995-1996	912,141	1.001	913,053
1996-1997	2,388,970	1.001	2,391,359
1997-1998	2,083,463	1.002	2,087,630
2003-2004	3,526,085	1.020	3,596,607
2004-2005	7,653,622	1.030	7,883,231
2005-2006	4,457,753	1.040	4,636,063
2006-2007	621,098	1.050	652,153
2007-2008	4,851,132	1.082	5,248,925
2008-2009	3,187,935	1.114	3,551,360
2009-2010	0	1.170	0
2010-2011	375,159	1.275	478,328
2011-2012	2,274	1.517	3,450
2012-2013	1,587,362	2.276	3,612,836
2013-2014	0	3.983	0
2014-2015	4,071,070	11.949	48,645,215
2015-2016	0	119.490	0
2016-2017	0	2,389.800	0
Totals	$51,798,715		$99,796,217
Grand Totals	$52,298,715		$100,296,217

Notes:

(A) Provided by ACCEL
(B) (C) from Appendix B, Page 4.
(C) (A) x (B).

Authority for California Cities Excess Liability
ACCEL Layer

Expected Loss Methods

Program Year	Program Year 2017-2018 $100K-$1M Base Rate (A)	Trend Factor Program Year (B)	Program Year $100K-$1M Base Rate (C)	Factor to Self-Insured Layer (D)	Program Year Self-Insured Expected Rate (E)	Program Year Payroll (F)	Program Year Preliminary Ultimate Losses (G)	Percent of Ultimate Losses Not Reported (H)	Estimated Program Year IBNR at 12/31/16 (I)	Program Year Reported Losses at 12/31/16 (J)	Program Year Estimated Ultimate Losses (K)
2003-2004	$0.926	0.577	0.535	0.230	0.123	$8,308,977	$1,022,000	1.0%	$10,119	$3,526,085	$3,536,000
2004-2005	0.926	0.601	0.556	0.365	0.203	9,374,402	1,903,000	1.1%	20,705	8,903,622	8,924,000
2005-2006	0.926	0.625	0.578	0.460	0.266	9,850,045	2,621,000	1.2%	31,079	4,457,753	4,489,000
2006-2007	0.926	0.650	0.602	0.460	0.277	10,305,894	2,852,000	1.3%	36,600	621,098	658,000
2007-2008	0.926	0.676	0.626	0.460	0.288	10,609,082	3,053,000	1.5%	45,118	5,206,132	5,251,000
2008-2009	0.926	0.703	0.651	0.460	0.299	11,307,152	3,384,000	2.0%	66,353	3,187,935	3,254,000
2009-2010	0.926	0.731	0.677	0.460	0.311	11,075,957	3,447,000	2.9%	100,398	0	100,000
2010-2011	0.926	0.760	0.704	0.460	0.324	11,097,108	3,592,000	3.8%	138,154	375,159	513,000
2011-2012	0.926	0.790	0.732	0.460	0.337	11,095,468	3,735,000	8.4%	314,670	2,274	317,000
2012-2013	0.926	0.822	0.761	0.460	0.350	10,966,401	3,839,000	18.6%	715,322	1,587,362	2,303,000
2013-2014	0.926	0.855	0.792	0.460	0.364	11,164,240	4,065,000	45.8%	1,860,553	0	1,861,000
2014-2015	0.926	0.889	0.823	0.460	0.379	11,556,443	4,376,000	72.9%	3,189,449	4,071,070	7,261,000
2015-2016	0.926	0.925	0.856	0.460	0.394	11,986,752	4,721,000	96.1%	4,538,129	0	4,538,000
2016-2017	0.926	0.962	0.890	0.365	0.325	12,166,570	3,954,000	99.8%	3,946,342	0	3,946,000

Authority for California Cities Excess Liability
ACCEL Layer

Expected Loss Rates

Accident Year	Exposure	Ultimate Loss	On-Level Losses	Loss Rate	Loss Rate Trend	Trended Loss Rate
1986-1987	1,008,086	0	0	0.000	2.279	0.000
1987-1988	998,109	500,000	500,000	0.501	2.191	1.098
1988-1989	1,146,083	0	0	0.000	2.107	0.000
1989-1990	1,208,157	0	0	0.000	2.026	0.000
Totals	$4,360,436	$500,000	$500,000	0.115		0.275
1986-1987	3,105,940	0	0	0.000	3.801	0.000
1987-1988	3,670,691	724,542	724,542	0.197	3.655	0.720
1988-1989	4,030,134	0	0	0.000	3.514	0.000
1989-1990	4,399,059	0	0	0.000	3.379	0.000
1990-1991	4,875,491	0	0	0.000	3.249	0.000
1991-1992	5,277,443	2,503,000	2,503,000	0.474	3.124	1.481
1992-1993	5,310,299	10,544,000	10,544,000	1.986	3.004	5.966
1993-1994	5,635,666	878,000	878,000	0.156	2.888	0.451
1994-1995	6,004,411	1,440,000	1,440,000	0.240	2.777	0.666
1995-1996	6,102,690	913,000	913,000	0.150	2.670	0.401
1996-1997	6,502,472	2,390,000	2,390,000	0.368	2.567	0.945
1997-1998	6,972,985	2,087,000	2,087,000	0.299	2.468	0.738
2003-2004	9,103,267	3,561,000	3,561,000	0.391	1.734	0.678
2004-2005	9,374,402	8,963,000	8,963,000	0.956	1.667	1.594
2005-2006	9,850,045	4,500,000	4,500,000	0.457	1.603	0.733
2006-2007	10,305,894	672,000	672,000	0.065	1.541	0.100
2007-2008	10,609,082	5,251,000	5,251,000	0.495	1.482	0.734
2008-2009	11,307,152	3,254,000	3,254,000	0.288	1.425	0.410
2009-2010	11,075,957	423,000	423,000	0.038	1.370	0.052
2010-2011	11,097,108	938,000	938,000	0.085	1.317	0.112
2011-2012	11,095,468	1,212,000	1,212,000	0.109	1.266	0.138
2012-2013	10,966,401	2,859,000	2,859,000	0.261	1.217	0.318
2013-2014	11,164,240	1,861,000	1,861,000	0.167	1.170	0.195
2014-2015	11,556,443	7,261,000	7,261,000	0.628	1.125	0.707
2015-2016	11,986,752	4,538,000	4,538,000	0.379	1.082	0.410
2016-2017	12,166,570	3,946,000	3,946,000	0.324	1.040	0.337
Totals	$213,546,062	$70,718,542	$70,718,542	0.331		0.688
86/87-97/98	61,887,280	21,479,542	21,479,542	0.347		0.947
				Selected Trend:	1.040	

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Estimated Loss Rates for the $100,000 - $1,000,000 Layer

Accident Year	Estimated Ultimate $100K - $1M Losses (C)	Payroll ($00's) (D)	Loss Trend Factor (E)	Loss Rate at 2016-2017 Level (F)
2007-2008	8,242,000	13,250,743	1.423	0.885
2008-2009	7,943,000	13,783,418	1.369	0.789
2009-2010	5,058,000	13,169,313	1.316	0.505
2010-2011	4,261,000	12,872,645	1.265	0.419
2011-2012	6,394,000	12,560,070	1.217	0.620
2012-2013	9,707,000	12,106,907	1.170	0.938
2013-2014	14,009,000	12,023,886	1.125	1.311
2014-2015	11,783,000	12,145,822	1.082	1.050
2015-2016	11,417,000	12,286,421	1.040	0.966
			Average 2007-08 - 2015-16:	0.831
			Average 2009-10 - 2015-16:	0.830
			Average 2011-12 - 2014-15:	0.980
			Prior 2015-2016 Rate :	0.850
			Selected 2016-2017 Rate :	0.890
			Trend Factor to 2017-2018 :	1.040
			Selected 2017-2018 Rate :	$0.926

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Estimated Ultimate Losses for the $100,000 to $1,000,000 Layer

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)
2006-2007						
2007-2008	8,241,635	8,541,399	8,243,466	8,525,860	8,242,010	8,242,000
2008-2009	7,942,537	7,534,984	7,945,586	7,568,833	7,943,006	7,943,000
2009-2010	5,058,087	5,226,097	5,057,417	5,207,680	5,058,009	5,058,000
2010-2011	3,965,267	4,556,822	3,974,669	4,505,939	4,261,000	4,261,000
2011-2012	6,279,499	6,727,031	6,509,035	7,364,090	7,409,325	6,394,000
2012-2013	9,775,749	12,354,168	9,638,640	10,760,272	8,096,095	9,707,000
2013-2014	19,091,823	16,842,556	16,093,341	11,924,427	14,523,795	14,009,000
2014-2015	20,824,037	13,658,708	15,683,047	10,482,760	12,264,150	11,783,000
2015-2016	19,408,427	19,182,720	12,347,178	10,486,821	12,621,350	11,417,000
Totals						$78,814,000

Notes:

(A) From Appendix B, Page 3, Column (D).
(B) From Appendix B, Page 4, Column (D).
(C) Based on results in Appendix B, Page 5.
(D) Based on results in Appendix B, Page 6.
(E) Based on results in Appendix B, Page 8.
(F) Selected averages of (A), (B), (C), (D), and (E).

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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Reported Loss Development

Accident Year (A)	$100K - $1M Reported Losses as of 12/31/16 (B)	Reported Loss Development Factor (C)	Ultimate $100K - $1M Losses (D)	$100K - $1M Reported Losses of 12/31/16 (E)	Reported Loss Development Factor (F)	Ultimate $100K - $1M Losses (G)
2006-2007	$0	1.013	$0	$0	1.013	$0
2007-2008	8,119,837	1.015	8,241,635	8,119,837	1.015	8,241,635
2008-2009	7,786,801	1.020	7,942,537	7,786,801	1.020	7,942,537
2009-2010	4,910,764	1.030	5,058,087	4,910,764	1.030	5,058,087
2010-2011	3,812,757	1.040	3,965,267	3,812,757	1.040	3,965,267
2011-2012	5,750,457	1.092	6,279,499	5,750,457	1.092	6,279,499
2012-2013	7,954,230	1.229	9,775,749	7,954,230	1.229	9,775,749
2013-2014	13,221,484	1.444	19,091,823	13,221,484	1.444	19,091,823
2014-2015	11,094,319	1.877	20,824,037	11,094,319	1.877	20,824,037
2015-2016	4,308,197	4.505	19,408,427	4,308,197	4.505	19,408,427
Totals	$66,958,846		$100,587,061	$66,958,846		$100,587,061

Notes:

(A) Years are 7/1 to 6/30.
(B) Provided by the Authority. These losses exclude amount over the SIR.
(C) Based upon Industry Loss Development Factors.
(D) (B) x (C). These estimated losses exclude amount over the SIR.
(E) Losses capped at the Authority's SIR. Amounts are provided by the Authority.
(F) Based upon Industry Loss Development Factors.
(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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Paid Loss Development

Accident Year (A)	$100K - $1M Paid Losses as of 12/31/16 (B)	Paid Loss Development Factor (C)	Ultimate $100K - $1M Losses (D)	$100K - $1M Paid Losses of 12/31/16 (E)	Paid Loss Development Factor (F)	Ultimate $100K - $1M Losses (G)
2006-2007	$0	1.036	$0	$0	1.036	$0
2007-2008	8,080,794	1.057	8,541,399	8,080,794	1.057	8,541,399
2008-2009	6,957,511	1.083	7,534,984	6,957,511	1.083	7,534,984
2009-2010	4,641,294	1.126	5,226,097	4,641,294	1.126	5,226,097
2010-2011	3,781,595	1.205	4,556,822	3,781,595	1.205	4,556,822
2011-2012	4,853,558	1.386	6,727,031	4,853,558	1.386	6,727,031
2012-2013	6,368,128	1.940	12,354,168	6,368,128	1.940	12,354,168
2013-2014	5,787,820	2.910	16,842,556	5,787,820	2.910	16,842,556
2014-2015	2,346,857	5.820	13,658,708	2,346,857	5.820	13,658,708
2015-2016	329,600	58.200	19,182,720	329,600	58.200	19,182,720
Totals	$43,147,157		$94,624,485	$43,147,157		$94,624,485

Notes:

(A) Years are 7/1 to 6/30.
(B) Provided by the Authority. These losses exclude amount over the SIR.
(C) Based upon Industry Loss Development Factors.
(D) (B) x (C). These estimated losses exclude amount over the SIR.
(E) Losses capped at the Authority's SIR. Amounts are provided by the Authority.
(F) Based upon Industry Loss Development Factors.
(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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Exposure and Development Method
Based on Reported Losses

Accident Year	Composite Exposure (A)	Reported Losses as of 12/31/16 (B)	Loss Development Factor (C)	Percentage of Losses Yet to Be Reported (D)	Program Rate (E)	Incurred but not Reported (IBNR) (F)	Ultimate Program Losses (G)
2006-2007	0		1.013	0.013	$0.591	$0	
2007-2008	13,250,743	8,119,837	1.015	0.015	0.622	123,629	8,243,466
2008-2009	13,783,418	7,786,801	1.020	0.020	0.576	158,785	7,945,586
2009-2010	13,169,313	4,910,764	1.030	0.029	0.384	146,653	5,057,417
2010-2011	12,872,645	3,812,757	1.040	0.038	0.331	161,912	3,974,669
2011-2012	12,560,070	5,750,457	1.092	0.084	0.719	758,578	6,509,035
2012-2013	12,106,907	7,954,230	1.229	0.186	0.748	1,684,410	9,638,640
2013-2014	12,023,886	13,221,484	1.444	0.307	0.778	2,871,857	16,093,341
2014-2015	12,145,822	11,094,319	1.877	0.467	0.809	4,588,728	15,683,047
2015-2016	12,286,421	4,308,197	4.505	0.778	0.841	8,038,981	12,347,178
Totals	$114,199,225	$66,958,846				$18,533,533	$85,492,379

Notes:

(A) Provided by the Authority.
(B) Provided by the Authority. These losses exclude amounts incurred above the Authority's SIR for each year.
(C) From Appendix B, Page 3, Column (F).
(D) 1 - 1/(C).
(E) From Appendix B, Page 7, Column (H).
(F) (A) x (D) x (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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Exposure and Development Method
Based on Paid Losses

Accident Year	Composite Exposure (A)	Paid Losses as of 12/31/16 (B)	Loss Development Factor (C)	Percentage of Losses Yet to Be Paid (D)	Program Rate (E)	Incurred but not Paid (F)	Ultimate Program Losses (G)
2005-2006	0		1.028	0.027	$0.569	$0	
2006-2007	0		1.036	0.035	0.591	0	
2007-2008	13,250,743	8,080,794	1.057	0.054	0.622	445,066	8,525,860
2008-2009	13,783,418	6,957,511	1.083	0.077	0.576	611,322	7,568,833
2009-2010	13,169,313	4,641,294	1.126	0.112	0.384	566,386	5,207,680
2010-2011	12,872,645	3,781,595	1.205	0.170	0.331	724,344	4,505,939
2011-2012	12,560,070	4,853,558	1.386	0.278	0.719	2,510,532	7,364,090
2012-2013	12,106,907	6,368,128	1.940	0.485	0.748	4,392,144	10,760,272
2013-2014	12,023,886	5,787,820	2.910	0.656	0.778	6,136,607	11,924,427
2014-2015	12,145,822	2,346,857	5.820	0.828	0.809	8,135,903	10,482,760
2015-2016	12,286,421	329,600	58.200	0.983	0.841	10,157,221	10,486,821
Totals	$114,199,225	$43,147,157				$33,679,525	$76,826,682

Notes:

(A) Provided by the Authority.
(B) Provided by the Authority. These losses exclude amounts paid above the Authority's SIR for each year.
(C) From Appendix B, Page 4, Column (F).
(D) 1 - 1/(C).
(E) From Appendix B, Page 7, Column (H).
(F) (A) x (D) x (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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Exposure and Development Method

Accident Year	Composite Exposure (A)	Ultimate $100K - $1M Losses (B)	Trend Factor (C)	Trended $100K - $1M Losses (D)	Trended $100K - $1M Loss Rate (E)	100K - $1M Loss Rate (F)	Factor to SIR (G)	Program Loss Rate (H)
2005-2006	0		1.539			$0.569	1.000	$0.569
2006-2007	0		1.480			0.591	1.000	0.591
2007-2008	13,250,743	8,242,000	1.423	11,728,366	0.885	0.622	1.000	0.622
2008-2009	13,783,418	7,943,000	1.369	10,873,967	0.789	0.576	1.000	0.576
2009-2010	13,169,313	5,058,000	1.316	6,656,328	0.505	0.384	1.000	0.384
2010-2011	12,872,645	4,261,000	1.265	5,390,165	0.419	0.331	1.000	0.331
2011-2012	12,560,070	6,279,000	1.217	7,641,543	0.608	0.719	1.000	0.719
2012-2013	12,106,907	9,776,000	1.170	11,437,920	0.945	0.748	1.000	0.748
2013-2014	12,023,886	17,405,000	1.125	19,580,625	1.628	0.778	1.000	0.778
2014-2015	12,145,822	15,841,000	1.082	17,139,962	1.411	0.809	1.000	0.809
2015-2016	12,286,421	15,841,000	1.040	16,474,640	1.341	0.841	1.000	0.841
Total/Avg	$114,199,225	$90,646,000		$106,923,516	$0.936			
07/08-13/14	89,766,982	58,964,000		73,308,914	$0.817			
07/08-14/15	101,912,804	74,805,000		90,448,876	$0.888			
				Selected $100K - $1M Rate:	$0.875			
				Prior:	$0.850			

Notes:

(A) Provided by the Authority.
(B) Selected average of results from Appendices B and B.
(C) From Appendix E, Column (B).
(D) (B) x (C).
(E) (D) / (A).
(F) Selected $100K - $1M Rate / (C). For 2010-2011 and prior (B) / (A).
(G) Based on a Burr 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.

Authority for California Cities Excess Liability - Liability ($100K - $1M An

Frequency and Severity Method

Accident Year	Ultimate Program Severity (A)	Ultimate Claims (B)	Ultimate Program Losses (C)
2006-2007	$194,030	0	$0
2007-2008	235,486	35	8,242,010
2008-2009	256,226	31	7,943,006
2009-2010	153,273	33	5,058,009
2010-2011	170,440	25	4,261,000
2011-2012	224,525	33	7,409,325
2012-2013	231,317	35	8,096,095
2013-2014	238,095	61	14,523,795
2014-2015	245,283	50	12,264,150
2015-2016	252,427	50	12,621,350
Total		353	$80,418,740

Notes:

(A) From Appendix B, Page 9, Column (H).
(B) From Appendix B, Page 9, 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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Frequency and Severity Method

Accident Year	Ultimate $100K - $1M Losses (A)	Ultimate Claims (B)	Ultimate $100K - $1M Severity (C)	Trend Factor (D)	Trended $100K - $1M Severity (E)	$100K - $1M Severity (F)	Factor to SIR (G)	Program Severity (H)
2006-2007				1.340		$194,030	1.000	$194,030
2007-2008	8,242,000	35	235,486	1.301	306,367	235,486	1.000	235,486
2008-2009	7,943,000	31	256,226	1.264	323,870	256,226	1.000	256,226
2009-2010	5,058,000	33	153,273	1.227	188,066	153,273	1.000	153,273
2010-2011	4,261,000	25	170,440	1.192	203,164	170,440	1.000	170,440
2011-2012	6,394,000	33	193,758	1.158	224,372	224,525	1.000	224,525
2012-2013	9,707,000	35	277,343	1.124	311,734	231,317	1.000	231,317
2013-2014	14,009,000	61	229,656	1.092	250,784	238,095	1.000	238,095
2014-2015	11,783,000	50	235,660	1.060	249,800	245,283	1.000	245,283
2015-2016	11,417,000	50	228,340	1.030	235,190	252,427	1.000	252,427

Average $100K - $1M Severity:	$254,816
Average 07/08-13/14 $100K - $1M Severity:	$258,337
Average 07/08-14/15 $100K - $1M Severity:	$257,270
Selected $100K - $1M Severity:	$260,000
Prior:	$225,000

Notes:

(A) Selected average of results from Appendices B, B, and B.
(B) Appendix B, Page 10, Column (C).
(C) (A) / (B).
(D) From Appendix E, Column (J).
(E) (C) x (D).
(F) Selected Limited Severity / (D).
(G) Based on a Burr 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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Frequency and Severity Method
Projection of Ultimate Claims

Accident Year	Reported Claim Development (A)	Closed Claim Development (B)	Selected Ultimate Claims (C)	Composite Exposure (10,000s) (D)	Claim Frequency (E)	Trend Factor (F)	Trended Claim Frequency (G)
2006-2007	0	0	0			1.105	
2007-2008	35	35	35	1,325.074	0.026	1.094	0.028
2008-2009	31	29	31	1,378.342	0.022	1.083	0.024
2009-2010	33	36	33	1,316.931	0.025	1.072	0.027
2010-2011	25	28	25	1,287.265	0.019	1.062	0.020
2011-2012	33	35	33	1,256.007	0.026	1.051	0.027
2012-2013	35	39	35	1,210.691	0.029	1.041	0.030
2013-2014	61	66	61	1,202.389	0.051	1.030	0.053
2014-2015	50	38	50	1,214.582	0.041	1.020	0.042
2015-2016	65	95	50	1,228.642	0.041	1.010	0.041
Total	368	401	353	11,419.923			0.032
						(H) Selected 2016-2017 Frequency:	0.040

	Program Year:	2016-2017	2017-2018
(I)	Trend Factor:	1.000	1.010
(J)	Selected Frequency:	0.040	0.040
(K)	Composite Exposure:	1,216.657	1,234.908
(L)	Ultimate Claims:	49	49

Notes:

(A) From Appendix B, Page 11, (C).
(B) From Appendix B, Page 12, (C).
(C) Selected from (A) and (B).
(D) From Appendix N, Page 2, (G).
(E) (C) / (D).
(F) From Appendix E.
(G) (E) x (F).
(H) The selected frequency of .040 is based on (G).
(I) From Appendix E.
(J) (H) x (I).
(K) From Appendix N, Page 2, (G).
(L) (J) x (K).

This exhibit summarizes the estimated numbers of claims and shows the estimated frequencies per 10,000 units of composite exposure, Appendix E, page2, Item (G).

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Frequency and Severity Method
Reported Claim Count Development

Accident Year	Claims Reported as of 12/31/2016 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
2006-2007	0	1.017	0	
2007-2008	34	1.022	35	0.029
2008-2009	30	1.032	31	0.024
2009-2010	32	1.042	33	0.027
2010-2011	24	1.052	25	0.021
2011-2012	31	1.063	33	0.028
2012-2013	33	1.074	35	0.030
2013-2014	54	1.128	61	0.052
2014-2015	40	1.241	50	0.042
2015-2016	26	2.482	65	0.053
Total	304		368	0.034

Notes:

(A) Provided by the Authority.
(B) From Appendix B, Page 15.
(C) (A) x (B).
(D) (C) / [Appendix B, Page 10, (D)] x [Appendix B, Page 10, (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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Frequency and Severity Method
Closed Claim Count Development

Accident Year	Claims Closed as of 12/31/2016 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
2006-2007	0	1.061	0	
2007-2008	32	1.082	35	0.029
2008-2009	26	1.109	29	0.023
2009-2010	31	1.164	36	0.029
2010-2011	23	1.222	28	0.023
2011-2012	26	1.344	35	0.029
2012-2013	23	1.680	39	0.034
2013-2014	26	2.520	66	0.057
2014-2015	6	6.300	38	0.032
2015-2016	3	31.500	95	0.078
Total	196		401	0.037

Notes:

(A) Provided by the Authority.
(B) From Appendix B, Page 16.
(C) (A) x (B).
(D) (C) / [Appendix B, Page 10, (D)] x [Appendix B, Page 10, (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.

Authority for California Cities Excess Liability - Liability ($100K - $1M Analysis)

Loss Rate Trend

Accident Year	Payroll	Preliminary Ultimate Loss	Untrended Loss Rate	Trended Loss Rate
2007-2008	13,250,743	8,242,000	0.622	0.885
2008-2009	13,783,418	7,943,000	0.576	0.789
2009-2010	13,169,313	5,058,000	0.384	0.505
2010-2011	12,872,645	4,261,000	0.331	0.419
2011-2012	12,560,070	6,479,000	0.516	0.628
2012-2013	12,106,907	9,856,000	0.814	0.952
2013-2014	12,023,886	14,599,000	1.214	1.366
2014-2015	12,145,822	13,641,000	1.123	1.215
2015-2016	12,286,421	11,839,000	0.964	1.002

Exponential Trends

Years	R-square	Fitted Trend
07/08-13/14	0.275	1.113
11/12-15/16	0.534	1.170
09/10-15/16	0.789	1.242
07/08-15/16	0.476	1.123
	Prior Trend:	1.040
	Selected Trend:	1.040

Authority for California Cities Excess Liability

Historical Payroll by Member

Member	1987-88 Payroll (00)	1988-89 Payroll (00)	1989-90 Payroll (00)	1990-91 Payroll (00)	1991-92 Payroll (00)	1992-93 Payroll (00)	1993-94 Payroll (00)	1994-95 Payroll (00)	1995-96 Payroll (00)	1996-97 Payroll (00)	1997-98 Payroll (00)
Anaheim	863,430	945,634	887,693	997,604	1,032,792	1,017,556	1,106,327	1,138,132	1,159,649	1,186,315	1,183,599
Bakersfield	363,542	385,888	427,532	456,470	479,556	490,078	463,172	544,562	558,232	592,428	626,800
Burbank	403,276	435,541	517,034	546,240	570,952	606,092	612,781	633,112	651,359	628,837	665,202
Gardena	126,061	150,116	155,950	167,690	183,626	0	0	0	0	0	0
Modesto	296,655	340,582	340,582	403,120	486,797	492,189	479,750	496,562	535,022	533,981	596,710
Monterey	0	0	150,186	167,555	177,538	176,550	181,500	206,054	212,611	225,039	235,554
Mountain View	0	0	0	0	0	310,326	292,142	307,338	325,808	341,322	360,295
Ontario	280,023	325,401	368,037	425,392	459,269	440,000	517,000	518,010	524,206	574,396	582,744
Palo Alto	385,839	409,895	441,571	469,616	500,629	526,146	552,171	606,885	575,477	607,900	677,305
Santa Barbara	300,236	342,392	355,513	393,889	438,230	421,442	464,065	494,001	496,728	525,742	562,649
Santa Cruz	0	0	0	0	0	0	0	0	0	164,906	327,837
Santa Monica	530,434	556,978	610,936	682,891	758,378	657,800	770,000	856,975	863,634	912,836	943,294
Visalia	121,195	137,709	144,025	165,025	189,676	172,119	196,757	202,780	199,965	208,770	210,996
Total	3,670,691	4,030,134	4,399,059	4,875,491	5,277,443	5,310,299	5,635,666	6,004,411	6,102,690	6,502,472	6,972,985

Member	1998-99 Payroll (00)	1999-00 Payroll (00)	2000-01 Payroll (00)	2001-02 Payroll (00)	2002-03 Payroll (00)	2003-04 Payroll (00)	2004-05 Payroll (00)	2005-06 Payroll (00)	2006-07 Payroll (00)	2007-08 Payroll (00)	2008-09 Payroll (00)
Anaheim	1,221,632	1,347,535	1,393,423	1,497,038	1,571,861	1,686,921	1,702,110	1,874,760	1,933,055	1,936,850	2,133,195
Bakersfield	656,309	672,981	679,346	710,898	746,845	769,039	775,782	828,105	889,657	928,430	916,017
Burbank	0	0	0	0	0	0	963,640	961,084	1,080,588	1,021,641	1,190,705
Gardena	0	0	0	0	0	0	0	0	0	0	0
Modesto	599,204	621,472	656,651	711,909	761,554	745,169	757,072	777,859	808,720	836,950	811,447
Monterey	246,524	262,721	284,379	307,684	320,894	313,632	313,439	315,127	303,985	340,838	362,102
Mountain View	409,155	408,020	434,816	470,177	517,208	479,749	474,925	505,565	558,760	579,550	628,761
Ontario	589,308	605,886	637,469	683,592	692,474	710,686	732,721	783,778	808,309	827,467	855,991
Palo Alto	722,355	727,013	771,366	875,829	907,965	976,695	964,635	910,388	920,271	964,648	980,859
Santa Barbara	587,051	644,650	658,205	688,383	715,412	731,380	739,835	827,558	767,235	826,778	882,947
Santa Cruz	330,666	368,019	383,500	421,614	414,665	404,596	405,476	415,167	494,206	483,045	537,520
Santa Monica	997,024	1,028,662	1,156,953	1,234,923	1,274,089	1,221,506	1,263,241	1,350,510	1,445,204	1,539,768	1,662,386
Visalia	218,084	237,134	256,559	257,861	290,675	269,603	281,525	300,145	295,903	323,116	345,222
Total	6,577,313	6,924,094	7,312,668	7,859,909	8,213,644	8,308,977	9,374,402	9,850,045	10,305,894	10,609,082	11,307,152

Member	2009-10 Payroll (00)	2010-11 Payroll (00)	2011-12 Payroll (00)	2012-13 Payroll (00)	2013-14 Payroll (00)	2014-15 Payroll (00)	2015-16 Payroll (00)	Projected 2016-17 Payroll (00)	Projected 2017-18 Payroll (00)
Anaheim	2,081,250	2,049,763	1,963,200	1,975,427	2,031,900	2,106,346	2,269,090	2,303,130	2,337,680
Bakersfield	882,235	882,175	913,612	974,793	981,145	1,007,547	1,032,898	1,048,390	1,064,120
Burbank	1,104,309	1,219,034	1,095,927	1,080,687	1,058,814	1,050,336	1,057,419	1,073,280	1,089,380
Gardena	0	0	0	0	0	0	0	0	0
Modesto	796,393	741,932	730,670	723,669	721,682	711,912	761,798	773,230	784,830
Monterey	375,986	371,980	362,541	361,402	362,125	367,532	374,195	379,810	385,510
Mountain View	632,482	629,984	618,793	624,667	633,130	660,314	684,770	695,040	705,470
Ontario	836,504	821,292	837,165	724,834	734,451	774,343	825,770	838,160	850,730
Palo Alto	1,000,933	992,673	1,041,460	919,927	996,990	1,064,558	981,613	996,340	1,011,290
Santa Barbara	844,604	828,178	824,422	865,528	881,841	905,611	929,442	943,380	957,530
Santa Cruz	506,288	506,381	511,940	521,594	544,821	579,725	607,172	616,280	625,520
Santa Monica	1,668,433	1,714,221	1,851,043	1,830,595	1,850,554	1,902,819	2,007,425	2,037,540	2,068,100
Visalia	346,541	339,496	344,696	363,276	366,787	425,402	455,159	461,990	468,920
Total	11,075,957	11,097,108	11,095,468	10,966,401	11,164,240	11,556,443	11,986,752	12,166,570	12,349,080

Note: Data provided by ACCEL.

Authority for California Cities Excess Liability

ULAE as of June 30, 2017

(A)	Selected ULAE Factor	3.5%
(B)	Provision for Unpaid ULAE :	
	IBNR at 6/30/17	$14,679,000
	Half of Case Reserves at 6/30/17	1,308,000
	Computation Base	$15,987,000
	Provision for Unpaid ULAE at 6/30/17	$560,000