



Actuarial Review of the Self-Insured General Liability Program

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

Presented to

Municipal Pooling Authority

July 2017





Wednesday, July 26, 2017

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

Re: Actuarial Review of the Self-Insured Liability Program

Dear Ms. Cox:

As you requested, we have completed our review of Municipal Pooling Authority's (MPA's) self-insured liability program. Assuming an SIR of \$1,000,000 per occurrence, we estimate the ultimate cost of claims and expenses for claims incurred during the 2017-18 program year to be \$4,500,000. This amount includes allocated loss adjustment expenses (ALAE) and a discount for anticipated investment income. But excludes 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 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 the MPA's claims, assuming a 2.0% return on investments per year.

In addition, we estimate the program's liability for outstanding claims to be \$13,197,000 as of June 30, 2017, again including ALAE and ULAE, and discounted for anticipated investment income. Given estimated program assets of \$18,369,000 as of June 30, 2017, the program was funded above the 90% confidence levels.

The \$13,197,000 estimate is the minimum liability to be booked by MPA at June 30, 2017 for its liability program, in accordance with Governmental Accounting Standards Board (GASB) Statement #10. GASB #10 requires MPA to accrue a liability on its financial statements for the ultimate cost of claims and expenses associated with all reported and unreported claims, including ALAE and ULAE. GASB #10 does not prohibit the discounting of losses to recognize investment income.

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

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

	Expected	Marginally Acceptable 70% CL	Recommended Range			Conservative 90% CL
			Low 75% CL	Target 80% CL	High 85% CL	
Loss and ALAE	\$13,215,000	\$14,682,000	\$15,316,000	\$16,056,000	\$16,981,000	\$18,237,000
ULAE	702,000	780,000	813,000	853,000	902,000	969,000
Investment Income Offset	<u>(720,000)</u>	<u>(800,000)</u>	<u>(834,000)</u>	<u>(875,000)</u>	<u>(925,000)</u>	<u>(994,000)</u>
Discounted Loss and LAE	\$13,197,000	\$14,662,000	\$15,295,000	\$16,034,000	\$16,958,000	\$18,212,000
Assets	<u>18,369,000</u>	<u>18,369,000</u>	<u>18,369,000</u>	<u>18,369,000</u>	<u>18,369,000</u>	<u>18,369,000</u>
Surplus or (Deficit)	\$5,172,000	\$3,707,000	\$3,074,000	\$2,335,000	\$1,411,000	\$157,000

GASB #10 does not address an actual asset 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.

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

Municipal Pooling Authority
Self-Insured Liability Program
Loss and LAE Funding Guidelines for 2017-18
Self-Insured Retention (SIR) of \$1,000,000

	Expected	Marginally Acceptable 70% CL	Recommended Range			Conservative 90% CL
			Low 75% CL	Target 80% CL	High 85% CL	
Loss and ALAE	\$4,772,000	\$5,574,000	\$5,960,000	\$6,418,000	\$6,991,000	\$7,755,000
ULAE	0	0	0	0	0	0
Investment Income Offset	<u>(272,000)</u>	<u>(318,000)</u>	<u>(340,000)</u>	<u>(366,000)</u>	<u>(398,000)</u>	<u>(442,000)</u>
Discounted Loss and LAE	\$4,500,000	\$5,256,000	\$5,621,000	\$6,053,000	\$6,593,000	\$7,313,000
Non-Claims Related Expenses	<u>4,252,000</u>	<u>4,252,000</u>	<u>4,252,000</u>	<u>4,252,000</u>	<u>4,252,000</u>	<u>4,252,000</u>
Indicated Funding	\$8,752,000	\$9,508,000	\$9,873,000	\$10,305,000	\$10,845,000	\$11,565,000

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

Municipal Pooling Authority
Self-Insured Liability Program
Loss and LAE Funding Rates Guidelines for 2017-18
Self-Insured Retention (SIR) of \$1,000,000
Discounted at 2.0%

Deductible	Loss &ALAE Deductible to \$1,000,000	Other Expenses	Excess Insurance Premium	Total Funding Rate
\$5,000	\$2.391	\$0.421	\$0.931	\$3.743
\$10,000	2.258	0.421	0.931	3.610
\$25,000	1.999	0.421	0.931	3.351
\$50,000	1.698	0.421	0.931	3.050
\$100,000	1.337	0.421	0.931	2.689

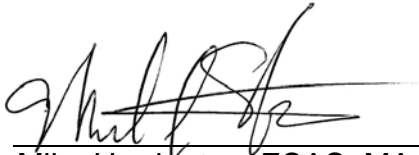
Note that while the projected expenses are for the 2017-18 fiscal year, the rate is a percentage of 2016-17 payroll. This is because in practice MPA collects 2017-18 contributions based on member payroll from 2016-17.

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

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

Sincerely,

Bickmore



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



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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	43

I. BACKGROUND

Municipal Pooling Authority began its self-insured liability program on July 1, 1990. Its current self-insured retention is \$1,000,000. Claims administration services are provided by MPA's Risk Management Department. Additional background on the program is given in Pool - Appendix J.

As of June 30, 2017, MPA is expected to have assets of \$18,369,000 for the program. Additional background on program funding is given in Pool - Exhibit 5.

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

II. CONCLUSIONS AND RECOMMENDATIONS

A. LIABILITY FOR OUTSTANDING CLAIMS

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

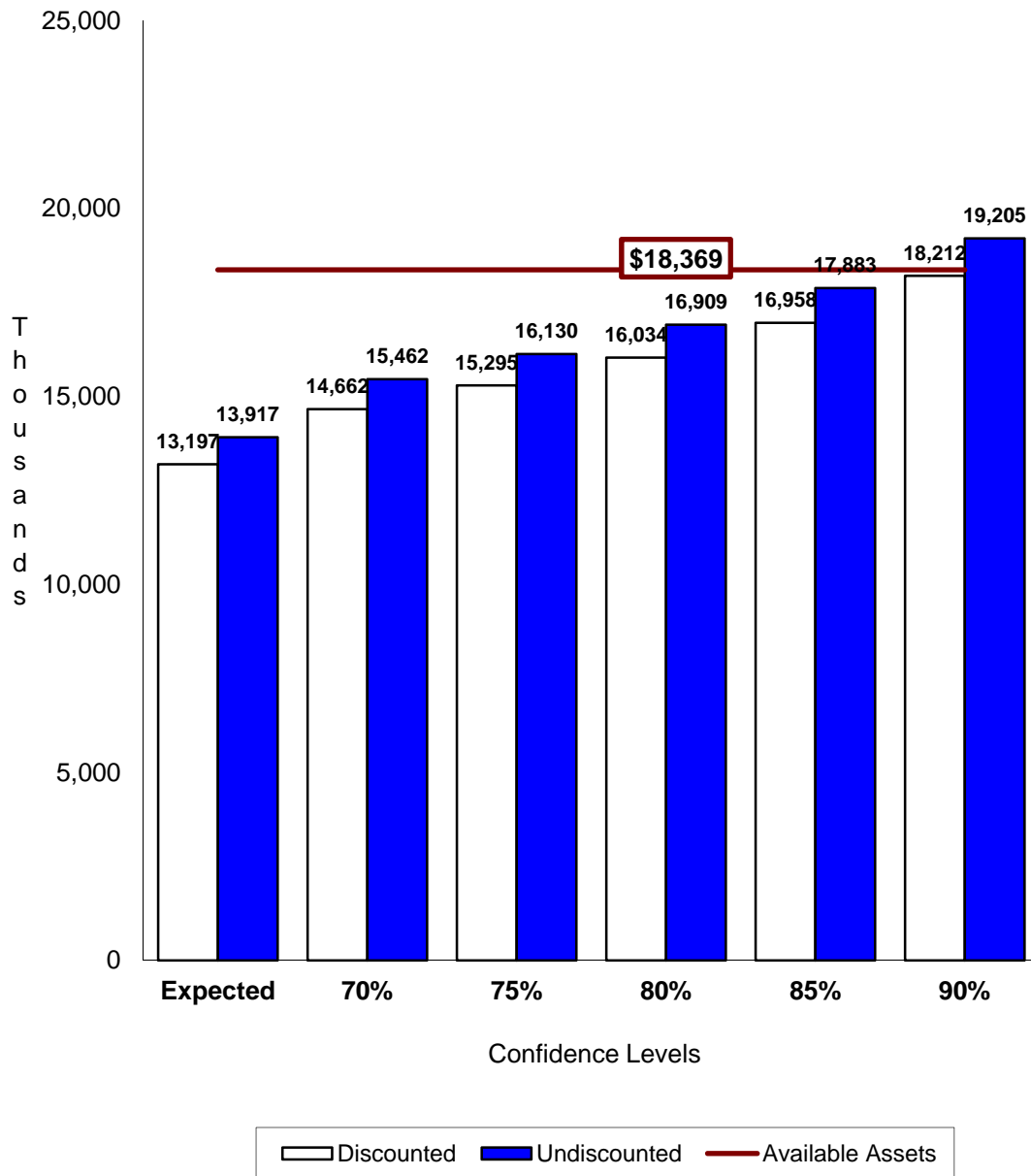
Our best estimate of the full value of MPA's liability for outstanding claims within its self-insured retention (SIR) is \$13,917,000 as of June 30, 2017. This amount includes losses, allocated loss adjustment expenses (ALAE), and unallocated loss adjustment expenses (ULAE). ALAE is the direct cost associated with the defense of individual claims (e.g. legal fees, investigation fees, court charges). ULAE is the cost to administer claims to final settlement, which may be years in the future (e.g. claims adjusters' salaries, taxes).

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

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 2.0%, we estimate the impact of investment income earnings to be about 5.2% if the program is funded within the range indicated in the graphs, resulting in a discounted liability for outstanding claims of \$13,197,000 as of June 30, 2017.

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

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



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

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

Year	Case Reserves	IBNR Reserves	Total Outstanding
Prior	\$35,470	\$0	\$35,470
1996-97	0	0	0
1997-98	0	0	0
1998-99	0	0	0
1999-00	0	0	0
2000-01	0	0	0
2001-02	0	0	0
2002-03	265,639	0	265,639
2003-04	144	0	144
2004-05	338	0	338
2005-06	127,937	0	127,937
2006-07	588	0	588
2007-08	301,112	0	301,112
2008-09	4,305	0	4,306
2009-10	639,408	21,658	661,066
2010-11	426,095	34,508	460,603
2011-12	578,927	99,821	678,748
2012-13	695,971	80,284	776,255
2013-14	598,800	414,038	1,012,838
2014-15	1,140,582	670,804	1,811,386
2015-16	1,613,509	1,341,023	2,954,532
2016-17	1,075,000	3,048,905	4,123,905
Loss and ALAE	\$7,503,825	\$5,711,042	\$13,214,867
ULAE		701,634	701,634
Total	\$7,503,825	\$6,412,676	\$13,916,501

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 funding 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.

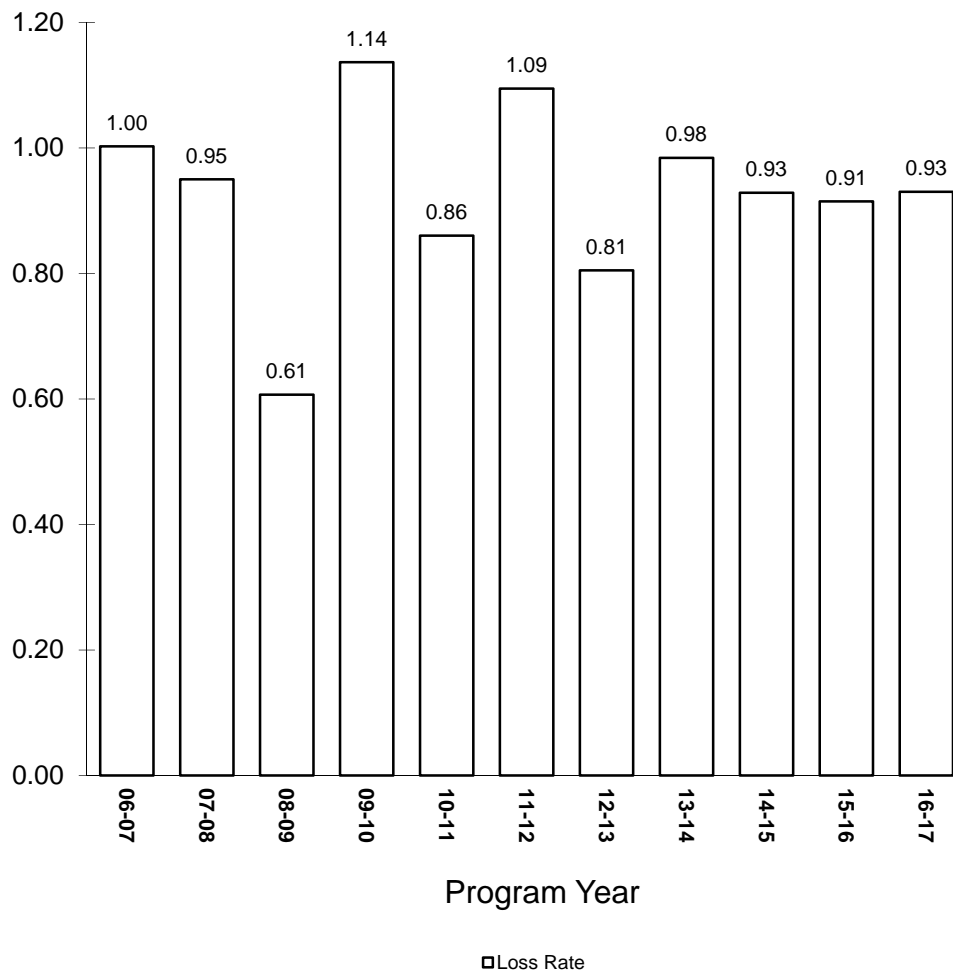
It is estimated that program assets will be \$18,369,000 at June 30, 2017, resulting in the program being funded above the 90% confidence levels.

C. HISTORICAL TRENDS IN THE SELF-INSURANCE PROGRAM

MPA's loss rate (based on losses limited to \$100,000 per occurrence) has varied over the 10 year period shown below. The program's loss rate averaged \$0.91 per \$100 of payroll during the period 2006-07 to 2010-11. Since that time, the loss rate averaged \$0.95. Our projected loss rate for 2016-17 of \$0.93 per \$100 of payroll is based on the average of recent years.

Graph 2

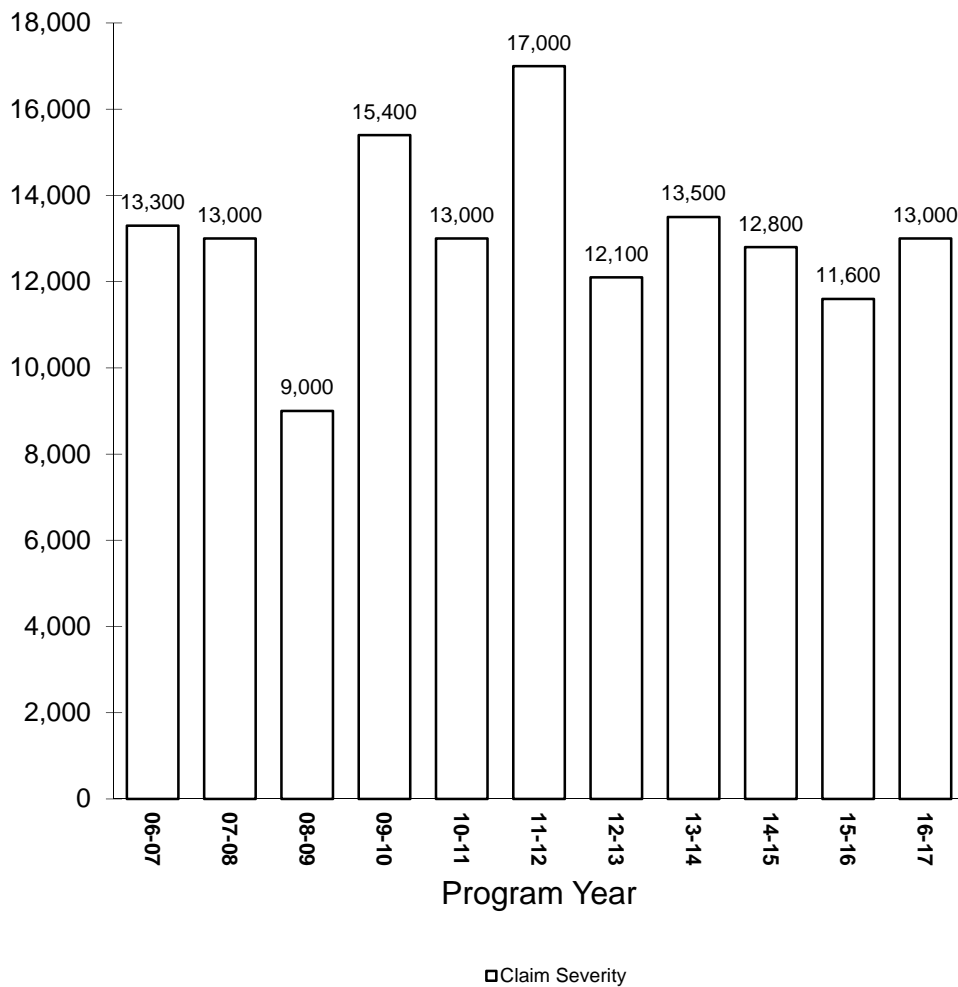
Municipal Pooling Authority
Liability
Dollars of Loss per
\$100 of Payroll



The following chart shows that MPA's average claim size, developed to ultimate and limited to \$100,000 per occurrence, has varied over the last several years, ranging from a low of \$9,000 in 2008-09 to a high of \$17,000 in 2011-12. The projected 2016-17 average cost per claim of \$13,000 based on the average of recent years.

Graph 3

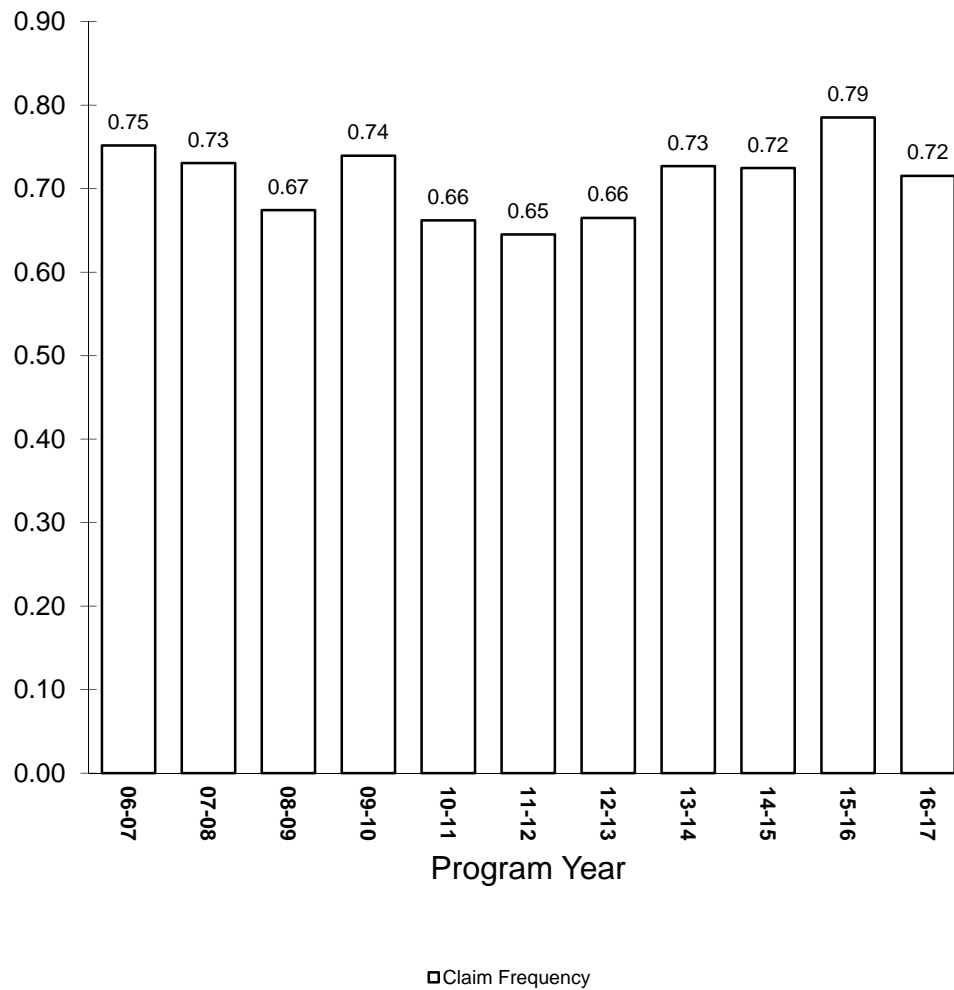
Municipal Pooling Authority
Liability
Dollars of Loss per Claim



The following chart shows that MPA's average number of claims per \$1M of payroll, or frequency. Between 2006-07 and 2011-12, MPA's frequency of claims per \$1 million payroll had been generally decreasing. Since that time, MPA's frequency has been increasing overall. Our projection for 2016-17 is 0.72 based on the average of the most recent five years and the apparent upward trend.

Graph 4

Municipal Pooling Authority
Liability
Number of Claims per
\$1 Million of Payroll



D. COMPARISON WITH PREVIOUS RESULTS

The prior report for Municipal Pooling Authority was dated April 11, 2016. In the table below we display actual versus expected development of incurred losses and ALAE by accident year between the September 30, 2015 evaluation date of the prior report and the September 30, 2016 evaluation date of the current report.

Actual Versus Expected Incurred Loss and ALAE Development

Accident Year	Expected Incurred Development	Actual Incurred Development	Actual Minus Expected
Prior	\$0	\$79,463	\$79,463
1996-97	0	0	0
1997-98	0	0	0
1998-99	0	0	0
1999-00	0	0	0
2000-01	0	(1)	(1)
2001-02	0	0	0
2002-03	0	101,691	101,691
2003-04	0	0	0
2004-05	0	0	0
2005-06	0	0	0
2006-07	2,000	0	(2,000)
2007-08	11,000	45,000	34,000
2008-09	8,000	(55,777)	(63,777)
2009-10	44,000	1,003,361	959,361
2010-11	62,000	4,085	(57,915)
2011-12	137,000	99,003	(37,997)
2012-13	172,000	1,321,006	1,149,006
2013-14	515,000	(47,232)	(562,232)
2014-15	1,196,000	1,846,784	650,784
2015-16	2,135,000	2,158,822	23,822
Total	\$4,282,000	\$6,556,205	\$2,274,205

As shown, actual incurred development was greater than anticipated since the prior report. Based on the assumptions from the prior report, it was expected that incurred losses would increase by \$4,282,000 between the two evaluation dates. However, actual development was approximately \$6,556,205; or about \$2,274,205 more than expected. The greater than anticipated development is primarily due to the 2009-10, 2012-13 and 2014-15 accident years. It should be noted that three of the most recent four years is emerging greater than expected.

In the table below we display actual versus expected development of paid losses and ALAE by accident year between the September 30, 2015 evaluation date of the prior report and the September 30, 2016 evaluation date of the current report.

Actual Versus Expected Paid Loss and ALAE Development

Accident Year	Expected Paid Development	Actual Paid Development	Actual Minus Expected
Prior	\$0	\$35,808	\$35,808
1996-97	0	0	0
1997-98	0	0	0
1998-99	0	0	0
1999-00	0	0	0
2000-01	0	0	0
2001-02	0	0	0
2002-03	71,000	55,755	(15,245)
2003-04	0	0	0
2004-05	0	0	0
2005-06	2,000	(140,000)	(142,000)
2006-07	1,000	0	(1,000)
2007-08	115,000	23,414	(91,586)
2008-09	21,000	2,340	(18,660)
2009-10	227,000	832,635	605,635
2010-11	249,000	220,076	(28,924)
2011-12	554,000	573,426	19,426
2012-13	663,000	1,632,531	969,531
2013-14	1,445,000	1,357,508	(87,492)
2014-15	1,068,000	1,522,615	454,615
2015-16	659,000	496,665	(162,335)
Total	\$5,075,000	\$6,612,773	\$1,537,773

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 \$5,075,000 between the two evaluation dates. However, actual development was approximately \$6,612,773; or about \$1,537,773 more than expected. Similar to the incurred loss development, the greater than anticipated development is primarily due to the 2009-10, 2012-13 and 2014-15 accident years.

In the table below we display the change in our estimates of the program's ultimate losses and ALAE by accident year for years 1998-99 and subsequent since our prior report.

Change in Ultimate Loss and ALAE

Accident Year	Prior Report	Current Report	Change In Ultimate
1998-99	\$4,069,196	\$4,069,196	\$0
1999-00	2,495,245	2,495,245	0
2000-01	3,372,353	3,372,352	(1)
2001-02	2,116,036	2,116,036	0
2002-03	3,505,000	3,607,000	102,000
2003-04	2,210,245	2,210,245	0
2004-05	3,114,000	3,113,942	(58)
2005-06	4,963,000	4,963,000	0
2006-07	5,877,000	5,875,102	(1,898)
2007-08	5,622,000	5,657,000	35,000
2008-09	2,732,000	2,668,000	(64,000)
2009-10	6,428,000	7,392,000	964,000
2010-11	5,066,000	5,014,000	(52,000)
2011-12	6,474,000	6,466,000	(8,000)
2012-13	3,036,000	4,207,000	1,171,000
2013-14	4,917,000	4,581,000	(336,000)
2014-15	4,480,000	5,279,000	799,000
2015-16	5,469,000	5,470,000	1,000
Total	\$75,946,075	\$78,556,118	\$2,610,043

As shown, overall we have increased our estimated ultimate losses by \$2,610,043 since our prior report. This increase can be tied to greater than anticipated loss development between the two reports as previously discussed.

At the time of the prior report, we estimated the liability for outstanding claims as of June 30, 2016 to be \$11,394,000 at the discounted, expected level. Our current estimate as of June 30, 2017, is \$13,197,000, an increase in our assessment of MPA's outstanding liabilities, as shown below:

Outstanding Claim Liabilities for Loss and LAE

	Prior Report at June 30, 2016	Current Report at June 30, 2017	Change
(A) Case Reserves:	\$6,886,000	\$7,504,000	\$618,000
(B) IBNR Reserves:	4,320,000	5,711,000	1,391,000
(C) Claims Administration Reserves:	796,000	702,000	(94,000)
(D) Total Reserves:	\$12,002,000	\$13,917,000	\$1,915,000
(E) Offset for Investment Income:	(608,000)	(720,000)	(112,000)
(F) Total Outstanding Claim Liabilities:	\$11,394,000	\$13,197,000	\$1,803,000

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

The increase in claim reserves (case and IBNR) is driven primarily by greater than expected claims development as previously discussed. Reserves for future claims administration expenses have decreased, resulting in a \$1,915,000 increase in total claim reserves. This increase in reserves leads to a larger offset for investment income. The net change due to the above factors is an overall increase of \$1,803,000 in our estimate of outstanding claim liabilities for loss and LAE.

At the time of the prior report, available assets were estimated to be \$16,011,000 as of June 30, 2016, which corresponded to the then-estimated discounted liability for outstanding claims above the 90% confidence level. Available assets are currently estimated to be \$18,369,000 as of June 30, 2017, which again corresponds to the currently estimated liability for outstanding claims above the 90% confidence levels. It can be summarized as follows:

Funding Margin

	Prior Report at June 30, 2016	Current Report at June 30, 2017	Change
(A) Outstanding Liability at the Discounted Expected Level:	\$11,394,000	\$13,197,000	\$1,803,000
(B) Estimated Assets At June 30:	16,011,000	18,369,000	2,358,000
(C) Surplus:	\$4,617,000	\$5,172,000	\$555,000

As you can see, our estimate of the program’s funding margin at the discounted, expected level has increased by \$555,000 between June 30, 2016 (as previously estimated) and June 30, 2017 (as currently estimated). This is driven by an increase in the estimated fund assets between the two points, partially offset by an increase in the estimated outstanding liability.

At the time of the prior report, our funding estimate for the 2016-17 year was \$8,616,000 at the discounted, 80% confidence level. That amount included allocated loss adjustment expenses (ALAE) and a discount for anticipated investment income, as well as all other program expenses. Our current estimate for the 2017-18 year is \$10,305,000 at the discounted, 80% confidence level, an increase in the program's expected loss costs, as shown in the table below:

Comparison of Funding for Loss and LAE

	Prior Report 2016-17 SIR = \$1,000,000	Current Report 2017-18 SIR = \$1,000,000	Change
(A) Ultimate Loss and ALAE:	\$4,034,000	\$4,772,000	\$738,000
(B) Offset for Investment Income:	(222,000)	(272,000)	(50,000)
(C) Recommended Loss and ALAE Funding:	\$3,812,000	\$4,500,000	688,000
(D) 80% Risk Margin:	1,346,000	1,553,000	207,000
(E) Non-Claim Related Expenses:	3,458,000	4,252,000	794,000
(F) Total Funding:	8,616,000	10,305,000	1,689,000
(G) Rate:	2.996	3.276	0.280

As you can see, our discounted funding recommendations at the 80% confidence level have increased between 2016-17 and 2017-18, as shown in our prior and current reports respectively.

Our estimates of ultimate loss and ALAE have increased by \$738,000. This is driven primarily by greater than expected loss development and an increase in payroll. Investment income is expected to be higher, resulting in an overall increase of \$688,000 in our annual funding estimate for loss and ALAE. The non-claim related expenses have increased substantially, resulting in an overall increase of \$1,689,000 in our annual funding estimate.

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 \$1,000,000 per occurrence for 2016-17 and 2017-18 (See Pool - Appendix J).
- We estimated the June 30, 2017 asset balance by beginning with the June 30, 2016 asset balance, and adjusting for anticipated revenue and expense for 2016-17 (see Pool - Exhibit 5).
- We received loss data evaluated as of September 30, 2016 (See Pool - Appendix K). We also utilized the data from MPA's most recent actuarial study for our assessment of loss development.
- We have assumed that MPA's payroll for 2016-17 and 2017-18 will be \$314,568,000 and \$317,714,000, respectively, based upon information provided by MPA (See Pool - Appendix L).

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 participating in an excess insurance liability program.
- 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 liability 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 liability 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 costs of liability 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.
- We have assumed that the loss rate trend associated with claim costs increases at 2.0% per year. We have assumed that claim severity increases at 2.0% per year, and that claim frequency will remain flat.
- We have assumed that payroll and other inflation-sensitive exposure measures increase 2.5% annually due to inflation.

- At MPA's instruction, we have assumed that assets held for investment will generate an average annual return of 2.0% 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 CARMA 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 \$18,369,000 as of June 30, 2017 for use in this report. This is shown in further detail in Pool - Exhibit 5.

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 liability 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.)

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Funding Guidelines for Outstanding Liabilities at
September 30, 2016

(A) Estimated Ultimate Losses Incurred through 9/30/16: (From Pool - Appendix F)	\$66,723,000
(B) Estimated Paid Losses through 9/30/16: (From Pool - Appendix F)	53,567,000
(C) Estimated Liability for Claims Outstanding at 9/30/16: (From Pool - Appendix F)	<u>\$13,156,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 9/30/16:	699,000
(E) Total Outstanding Liability for Claims at 9/30/16: ((C) + (D))	<u>\$13,855,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.0%) (Pool - Appendix H, Page 1, (G))	0.947
(G) Discounted Outstanding Liability for Claims at 9/30/16: ((E) x (F))	<u>\$13,127,000</u>

		Marginally Acceptable	Recommended			Conservative
Confidence Level of Adequacy:		70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Pool - Appendix I)		1.111	1.159	1.215	1.285	1.380
(I) Margin for Adverse Experience: (((G)-(D)) x ((H) - 1))		1,457,000	2,087,000	2,822,000	3,741,000	4,988,000
(J) Total Required Available Funding at 9/30/16:						
Undiscounted ((C) x (H) + (D))		<u>\$15,393,000</u>	<u>\$16,058,000</u>	<u>\$16,834,000</u>	<u>\$17,804,000</u>	<u>\$19,120,000</u>
NPV ((G) + (I))		14,584,000	15,214,000	15,949,000	16,868,000	18,115,000
(K) Estimated Actual Funding at 9/30/16: From Exhibit 6		\$18,369,000	\$18,369,000	\$18,369,000	\$18,369,000	\$18,369,000
(L) Indicated Funding Redundancy/ (Deficiency): ((K)-(J))						
Undiscounted		<u>\$2,976,000</u>	<u>\$2,311,000</u>	<u>\$1,535,000</u>	<u>\$565,000</u>	<u>(\$751,000)</u>
NPV		3,785,000	3,155,000	2,420,000	1,501,000	254,000

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Funding Guidelines for Outstanding Liabilities at
June 30, 2017

(A) Estimated Ultimate Losses Incurred through 6/30/17: (From Pool - Appendix F)	\$70,103,000
(B) Estimated Paid Losses through 6/30/17: (From Pool - Appendix F)	56,888,000
(C) Estimated Liability for Claims Outstanding at 6/30/17: (From Pool - Appendix F)	<u>\$13,215,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 6/30/17:	702,000
(E) Total Outstanding Liability for Claims at 6/30/17: ((C) + (D))	<u>\$13,917,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.0%) (Pool - Appendix H, Page 1, (H))	0.948
(G) Discounted Outstanding Liability for Claims at 6/30/17: ((E) x (F))	<u>\$13,197,000</u>

Confidence Level of Adequacy:	Marginally Acceptable		Recommended		Conservative
	70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Pool - Appendix I)	1.111	1.159	1.215	1.285	1.380
(I) Margin for Adverse Experience: (((G)-(D)) x ((H) - 1))	1,465,000	2,098,000	2,837,000	3,761,000	5,015,000
(J) Total Required Available Funding at 6/30/17:					
Undiscounted ((C) x (H) + (D))	<u>\$15,462,000</u>	<u>\$16,130,000</u>	<u>\$16,909,000</u>	<u>\$17,883,000</u>	<u>\$19,205,000</u>
NPV ((G) + (I))	14,662,000	15,295,000	16,034,000	16,958,000	18,212,000
(K) Estimated Actual Funding at 6/30/17: From Exhibit 6	\$18,369,000	\$18,369,000	\$18,369,000	\$18,369,000	\$18,369,000
(L) Indicated Funding Redundancy/ (Deficiency): ((K)-(J))					
Undiscounted	<u>\$2,907,000</u>	<u>\$2,239,000</u>	<u>\$1,460,000</u>	<u>\$486,000</u>	<u>(\$836,000)</u>
NPV	3,707,000	3,074,000	2,335,000	1,411,000	157,000

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Funding Options for Program Year 2016-2017 (SIR = \$1,000,000)

	<u>Dollar Amount</u>				
(A) Estimated Ultimate Losses Incurred in Accident Year 2016-2017: (From Pool - Appendix F)	\$4,507,000				
(B) Loss Discount Factor (Based on a Discount Rate of 2.0%.) (Pool - Appendix H, Page 2, (F))	0.943				
(C) Discounted Total Claims Costs Incurred in Accident Year 2016-2017: ((C) x (D))	<u>\$4,250,000</u>				
	<u>Marginally Acceptable</u>	<u>Recommended</u>			<u>Conservative</u>
	70%	75%	80%	85%	90%
(D) Confidence Level Factor: (From Pool - Appendix I)	1.168	1.249	1.345	1.465	1.625
(E) Margin for Adverse Experience: ((C) x [(D) - 1])	714,000	1,058,000	1,466,000	1,976,000	2,656,000
(F) Recommended Funding in 2016-2017 for Claims Costs and Other Expenses ((C) + (E))	<u>\$4,964,000</u>	<u>\$5,308,000</u>	<u>\$5,716,000</u>	<u>\$6,226,000</u>	<u>\$6,906,000</u>
(G) Budgeted Non Claims Related Expenses: (Provided by the Authority)	4,252,000	4,252,000	4,252,000	4,252,000	4,252,000
(H) Total Recommended Funding in 2016-2017 ((F) + (G))	<u>\$9,216,000</u>	<u>\$9,560,000</u>	<u>\$9,968,000</u>	<u>\$10,478,000</u>	<u>\$11,158,000</u>

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Funding Options for Program Year 2017-2018 (SIR = \$1,000,000)
One-Year Funding Plan

	<u>Dollar Amount</u>				
(A) Estimated Ultimate Losses Incurred in Accident Year 2017-2018: (From Pool - Appendix F)	\$4,772,000				
(B) Loss Discount Factor (Based on a Discount Rate of 2.0%.) (Pool - Appendix H, Page 2, (F))	0.943				
(C) Discounted Total Claims Costs Incurred in Accident Year 2017-2018: ((C) x (D))	<u>\$4,500,000</u>				
	<u>Marginally Acceptable</u>	<u>Recommended</u>			<u>Conservative</u>
	70%	75%	80%	85%	90%
(D) Confidence Level Factor: (From Pool - Appendix I)	1.168	1.249	1.345	1.465	1.625
(E) Margin for Adverse Experience: ((C) x [(D) - 1])	756,000	1,121,000	1,553,000	2,093,000	2,813,000
(F) Recommended Funding in 2017-2018 for Claims Costs and Other Expenses ((C) + (E))	<u>\$5,256,000</u>	<u>\$5,621,000</u>	<u>\$6,053,000</u>	<u>\$6,593,000</u>	<u>\$7,313,000</u>
(G) Budgeted Non Claims Related Expenses: (Provided by the Authority)	4,252,000	4,252,000	4,252,000	4,252,000	4,252,000
(H) Total Recommended Funding in 2017-2018 ((F) + (G))	<u>\$9,508,000</u>	<u>\$9,873,000</u>	<u>\$10,305,000</u>	<u>\$10,845,000</u>	<u>\$11,565,000</u>

Municipal Pooling Authority - Liability - 100K & SIR Analyses

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

Accident Year	Estimated Ultimate (A)	Reported as of 9/30/16 (B)	Estimated IBNR as of 9/30/16 (C)	Estimated Percent of IBNR Reported Between 10/1/16 and 6/30/17 (D)	Estimated IBNR Reported (E)	Estimated IBNR as of 6/30/17 (F)
Prior	\$2,948,898	\$2,948,898	\$0	100.0%	\$0	\$0
1996-1997	1,155,916	1,155,916	(0)	100.0%	0	(0)
1997-1998	3,002,505	3,002,505	0	100.0%	0	0
1998-1999	2,982,570	2,982,570	0	100.0%	0	0
1999-2000	1,578,685	1,578,685	(0)	100.0%	0	(0)
2000-2001	2,480,141	2,480,141	0	100.0%	0	0
2001-2002	1,204,025	1,204,025	0	100.0%	0	0
2002-2003	2,318,597	2,318,156	441	100.0%	441	0
2003-2004	1,363,245	1,363,073	172	100.0%	172	0
2004-2005	2,398,942	2,398,527	415	100.0%	415	(0)
2005-2006	3,891,000	3,890,978	22	100.0%	22	0
2006-2007	4,657,102	4,656,608	494	100.0%	494	(0)
2007-2008	4,530,000	4,529,287	713	100.0%	713	(0)
2008-2009	1,895,000	1,889,464	5,536	100.0%	5,536	0
2009-2010	6,005,000	5,968,342	36,658	39.9%	15,000	21,658
2010-2011	4,136,000	4,071,492	64,508	45.8%	30,000	34,508
2011-2012	5,132,000	4,966,179	165,821	40.1%	66,000	99,821
2012-2013	3,046,000	2,918,716	127,284	36.9%	47,000	80,284
2013-2014	3,444,000	2,688,962	755,038	45.2%	341,000	414,038
2014-2015	3,676,000	2,631,196	1,044,804	35.8%	374,000	670,804
2015-2016	3,750,000	1,491,977	2,258,023	40.6%	917,000	1,341,023
2016-2017	4,507,000	10,095	1,117,000	32.2%	1,448,000	3,048,905
Totals	\$70,102,626	\$61,145,791	\$5,576,930		\$3,245,793	\$5,711,042

Notes:

- (A) From Pool - Exhibit 3, Page 2.
- (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 10/1/16 and 6/30/17. The percentage is based on the development pattern selected in Pool - Appendix A.
- (E) ((A) - (B)) x (D).
- (F) (A) - (B) - (E).

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses

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)	Losses within the Deductible (G)	Estimate of Ultimate Losses within Aggregate Limit Excluding Deductibles (H)
Prior	\$4,566,221	\$4,499,776	\$4,566,221	\$4,499,193	\$3,912,084	\$4,566,221	\$1,617,323	\$2,948,898
1996-1997	1,876,897	1,878,774	1,876,897	1,878,989	2,093,646	1,876,897	720,981	1,155,916
1997-1998	3,851,532	3,859,235	3,851,532	3,857,759	3,112,164	3,851,532	849,027	3,002,505
1998-1999	4,069,196	4,077,334	4,069,196	4,077,020	3,913,630	4,069,196	1,086,626	2,982,570
1999-2000	2,495,245	2,502,731	2,495,245	2,504,728	3,162,500	2,495,245	916,560	1,578,685
2000-2001	3,372,352	3,389,214	3,372,352	3,386,600	2,847,150	3,372,352	892,211	2,480,141
2001-2002	2,116,036	2,130,848	2,116,036	2,135,666	2,805,495	2,116,036	912,011	1,204,025
2002-2003	3,606,559	3,308,537	3,606,559	3,310,516	3,473,120	3,607,000	1,288,403	2,318,597
2003-2004	2,210,245	2,236,768	2,210,245	2,240,780	2,546,400	2,210,245	847,000	1,363,245
2004-2005	3,113,942	3,163,765	3,113,942	3,149,326	2,212,091	3,113,942	715,000	2,398,942
2005-2006	4,962,763	4,909,056	4,962,763	4,907,846	4,751,979	4,963,000	1,072,000	3,891,000
2006-2007	5,875,102	6,021,770	5,875,102	5,970,564	3,986,010	5,875,102	1,218,000	4,657,102
2007-2008	5,656,225	5,462,690	5,656,225	5,422,950	4,286,080	5,657,000	1,127,000	4,530,000
2008-2009	2,667,725	2,803,186	2,668,251	2,808,370	2,925,934	2,668,000	773,000	1,895,000
2009-2010	7,392,322	7,033,064	7,382,864	6,918,180	5,464,512	7,392,000	1,387,000	6,005,000
2010-2011	5,014,103	4,926,480	5,003,085	4,837,408	4,099,349	5,014,000	878,000	4,136,000
2011-2012	6,467,573	6,516,126	6,415,909	6,224,341	4,495,040	6,466,000	1,334,000	5,132,000
2012-2013	4,297,110	3,994,305	4,306,395	4,108,504	4,675,680	4,207,000	1,161,000	3,046,000
2013-2014	4,382,380	4,796,467	4,416,462	4,744,644	5,440,526	4,581,000	1,137,000	3,444,000
2014-2015	5,551,508	5,547,528	5,403,259	5,154,067	5,916,680	5,279,000	1,603,000	3,676,000
2015-2016	6,120,354	4,324,423	5,894,200	5,540,055	7,561,480	5,470,000	1,720,000	3,750,000
Totals						\$88,850,768	\$23,255,142	\$65,595,626
						\$6,206,000	\$1,699,000	\$4,507,000
						\$6,488,000	\$1,716,000	\$4,772,000

Notes:

- (A) From Pool - Appendix A, Page 1, Column (G).
- (B) From Pool - Appendix B, Page 1, Column (G).
- (C) From Pool - Appendix C, Page 1, Column (G).
- (D) From Pool - Appendix C, Page 2, Column (G).
- (E) From Pool - Appendix D, Page 1, Column (C).
- (F) Selected averages of (A), (B), (C), (D), and (E).
- (G) From Pool - Exhibit 3, Page 3, Column (H).
- (H) (F) - (G)
- (I) From Pool - Exhibit 9, Page 1, Line (K).
- (J) From Pool - Exhibit 9, 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Estimated Ultimate Limited Losses Within Member Deductible

Accident Year	Paid Losses Within Member Deductible as of 9/30/16 (A)	Case Reserves Within Member Deductible as of 9/30/16 (B)	Incurred Losses Within Member Deductible as of 9/30/16 (C)	Implicit Incurred Loss Development Factor (D)	Deductible (E)	Ratio of Losses Within Deductible to Loss Limited to \$100,000 (F)	Adjustment Incurred Loss Development Factor (G)	Ultimate Losses Within Member Deductible (H)
Prior	\$1,617,323	\$0	\$1,617,323		Various	0.533	1.000	\$1,617,323
1996-1997	720,981	0	720,981	1.000	Various	0.504	1.000	720,981
1997-1998	849,027	0	849,027	1.000	Various	0.640	1.000	849,027
1998-1999	1,086,626	0	1,086,626	1.000	Various	0.598	1.000	1,086,626
1999-2000	916,560	0	916,560	1.000	Various	0.905	1.000	916,560
2000-2001	892,211	0	892,211	1.000	Various	0.713	1.000	892,211
2001-2002	912,011	0	912,011	1.000	Various	0.623	1.000	912,011
2002-2003	1,288,403	0	1,288,403	1.000	Various	0.679	1.000	1,288,403
2003-2004	847,172	0	847,172	1.000	Various	0.549	1.000	847,000
2004-2005	715,415	0	715,415	1.000	Various	0.544	1.000	715,000
2005-2006	1,071,785	0	1,071,785	1.000	Various	0.387	1.000	1,072,000
2006-2007	1,218,494	0	1,218,494	1.000	Various	0.534	1.000	1,218,000
2007-2008	1,126,938	0	1,126,938	1.000	Various	0.469	1.000	1,127,000
2008-2009	772,731	206	772,936	1.000	Various	0.480	1.000	773,000
2009-2010	1,373,845	13,357	1,387,202	1.002	Various	0.471	1.000	1,387,000
2010-2011	878,264	0	878,264	1.003	Various	0.406	1.000	878,000
2011-2012	1,281,184	50,176	1,331,360	1.004	Various	0.492	1.002	1,334,000
2012-2013	1,089,292	65,082	1,154,374	1.010	Various	0.602	1.006	1,161,000
2013-2014	929,950	191,853	1,121,803	1.028	Various	0.476	1.013	1,137,000
2014-2015	817,077	716,399	1,533,476	1.066	Various	0.683	1.045	1,603,000
2015-2016	400,598	893,203	1,293,801	1.465	Various	0.708	1.329	1,720,000
Totals	\$20,805,887	\$1,930,276	\$22,736,163					\$23,255,142

Projected Losses within Member Deductible for the Year 2016-2017 (I) \$1,699,000
 Projected Losses within Member Deductible for the Year 2017-2018 (J) \$1,716,000

Notes:

- (A) Provided by the Authority. Amounts are gross of deductibles, net of recoveries. All claims prior to 1994-95 are closed.
- (B) Provided by the Authority. Amounts are gross of deductibles, net of recoveries. All claims prior to 1994-95 are closed.
- (C) Provided by the Authority. Amounts are gross of deductibles, net of recoveries. All claims prior to 1994-95 are closed.
- (D) Based on the reported incurred losses limited to \$100,000 and the selected ultimate limited losses from Pool - Exhibit 3, Page 4.
- (E) Based on individual member deductible per fiscal year and corresponding payroll.
- (F) Based on the ratio of losses to a \$100,000 limit.
- (G) Based on (D) and (F)
- (H) (C) x (G). This amount includes only the portion of loss under the members' deductible.
- (I)-(K) Based on the ratio of loss within member deductible to the ultimate loss. Assumes no deductibles change from 2015-2016.

This exhibit shows the calculation of estimated ultimate losses within the member deductible for each year based on paid losses and case reserves within the members deductible 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

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	\$3,034,770	\$3,029,355	\$3,034,770	\$3,029,364	\$3,034,900	\$3,035,000
1996-1997	1,430,014	1,431,444	1,430,014	1,431,443	1,430,018	1,430,014
1997-1998	2,091,721	2,093,813	2,091,721	2,093,813	2,091,672	2,091,721
1998-1999	2,588,886	2,591,475	2,588,886	2,591,474	2,588,915	2,588,886
1999-2000	2,057,287	2,059,344	2,057,287	2,059,344	2,057,250	2,057,287
2000-2001	1,820,083	1,823,723	1,820,083	1,823,725	1,820,025	1,820,083
2001-2002	1,760,695	1,765,977	1,760,695	1,765,976	1,760,815	1,760,695
2002-2003	2,141,098	2,149,166	2,141,098	2,149,169	2,141,055	2,141,000
2003-2004	1,542,158	1,549,869	1,542,158	1,549,867	1,542,200	1,542,158
2004-2005	1,313,942	1,321,826	1,313,942	1,321,827	1,314,019	1,314,000
2005-2006	2,772,583	2,791,991	2,772,583	2,791,991	2,772,503	2,773,000
2006-2007	2,280,213	2,300,680	2,280,213	2,300,678	2,280,285	2,280,213
2007-2008	2,405,240	2,362,857	2,405,240	2,363,620	2,405,185	2,405,000
2008-2009	1,612,726	1,633,462	1,612,727	1,633,472	1,611,179	1,611,115
2009-2010	2,951,232	2,984,758	2,951,243	2,985,103	2,951,040	2,951,000
2010-2011	2,170,274	2,198,750	2,170,296	2,197,573	2,169,998	2,170,000
2011-2012	2,714,986	2,756,438	2,713,622	2,739,868	2,333,280	2,714,000
2012-2013	1,935,795	1,835,746	1,939,088	1,873,784	2,380,800	1,937,000
2013-2014	2,424,646	2,235,184	2,421,431	2,254,407	2,716,146	2,423,000
2014-2015	2,394,917	2,074,039	2,396,945	2,259,272	2,894,947	2,396,000
2015-2016	2,667,751	2,463,834	2,690,852	2,684,623	3,630,320	2,679,000
Totals						\$46,120,172
			Projected Losses for the Year 2016-2017 (G)			\$2,926,000
			Projected Losses for the Year 2017-2018 (H)			\$3,014,000

Notes:

- (A) From Pool - Appendix A, Page 1, Column (D).
- (B) From Pool - Appendix B, Page 1, Column (D).
- (C) Based on results in Pool - Appendix C, Page 1.
- (D) Based on results in Pool - Appendix C, Page 2.
- (E) Based on results in Pool - Appendix D, Page 1.
- (F) Selected averages of (A), (B), (C), (D), and (E).
- (G) From Pool - Exhibit 9, Page 1, Line (K) / Line (G) .
- (H) From Pool - Exhibit 9, 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Selection of Increased Limits Factors (\$100,000 to \$1,000,000) for 2016-2017 and 2017-2018

Accident Year	Self-Insured Retention (A)	\$100,000 Limited Selected Ultimate Losses (B)	\$1,000,000 Limited Selected Ultimate Losses (C)	Implied Increased Limits Factor (D)	Modeled Increased Limits Factor (E)
Prior	\$1,000,000				1.289
1996-1997	1,000,000	1,430,014	1,876,897	1.313	1.464
1997-1998	1,000,000	2,091,721	3,851,532	1.841	1.488
1998-1999	1,000,000	2,588,886	4,069,196	1.572	1.512
1999-2000	1,000,000	2,057,287	2,495,245	1.213	1.537
2000-2001	1,000,000	1,820,083	3,372,352	1.853	1.564
2001-2002	1,000,000	1,760,695	2,116,036	1.202	1.593
2002-2003	1,000,000	2,141,000	3,607,000	1.685	1.622
2003-2004	1,000,000	1,542,158	2,210,245	1.433	1.651
2004-2005	1,000,000	1,314,000	3,113,942	2.370	1.683
2005-2006	1,000,000	2,773,000	4,963,000	1.790	1.714
2006-2007	1,000,000	2,280,213	5,875,102	2.577	1.748
2007-2008	1,000,000	2,405,000	5,657,000	2.352	1.782
2008-2009	1,000,000	1,611,115	2,668,000	1.656	1.816
2009-2010	1,000,000	2,951,000	7,392,000	2.505	1.852
2010-2011	1,000,000	2,170,000	5,014,000	2.311	1.889
2011-2012	1,000,000	2,714,000	6,466,000	2.382	1.927
2012-2013	1,000,000	1,937,000	4,207,000	2.172	1.964
2013-2014	1,000,000	2,423,000	4,581,000	1.891	2.003
2014-2015	1,000,000	2,396,000	5,279,000	2.203	2.044
2015-2016	1,000,000	2,679,000	5,470,000	2.042	2.083
Total ex Latest 2 Years		38,010,172	73,535,547	1.935	
Total 10/11-15/16		14,319,000	31,017,000	2.166	
All Years		43,085,172	84,284,547	1.956	
		Prior Selected 2015-2016 \$100K-SIR ILF:		1.961	
		(F) Selected 2016-2017 \$100K-SIR ILF:		2.121	
		(G) Selected 2017-2018 \$100K-SIR ILF:		2.153	

Notes:

- (A) Provided by the Authority.
- (B) From Pool - Exhibit 3, Page 4.
- (C) From , .
- (D) (C) / (B).
- (E) From Pool - Appendix C, Page 3.
- (F) - (G) Based on columns (D) and (E) - trended for inflation.

Municipal Pooling Authority - Liability

2017-18 Funding
at 80% Confidence Level

Deductible Amount	Per \$100 of Payroll				Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At 80% Confidence Level of Payroll (E)	Present Value Factor at 2.0% Interest (F)	Recommended Unbalanced Funding Per \$100 of Payroll For Losses From In Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention (G)	Off Balance Factor (H)	Recommended Balanced Funding Per \$100 of Payroll For Losses From In Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention (I)	Estimated Operating and Administrative Expenses Per \$100 of Payroll (J)	Estimated Excess Insurance Premium Per \$100 of Payroll (K)	Rates Per \$100 of Payroll (L)	2016-17 Payroll (M)	2017-18 Recommended Funding (N)
	Excess of Deductibles to \$100,000 Per Occurrence (A)	Excess of \$100,000 Per Occurrence to the Program's \$1.0 Million Self-Insured Retention (B)	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At Expected Confidence Level (C)	80% Confidence Level Factor (D)										
\$5,000	\$0.774	\$1.104	\$1.878	1.345	\$2.526	0.962	\$2.429	0.984	\$2.391	\$0.421	\$0.931	\$3.743	\$69,190,875	\$2,590,000
10,000	0.675	1.104	1.779	1.345	2.393	0.959	2.294	0.984	2.258	0.421	0.931	3.610	53,728,298	1,940,000
25,000	0.479	1.104	1.583	1.345	2.129	0.954	2.031	0.984	1.999	0.421	0.931	3.351	64,757,206	2,170,000
50,000	0.268	1.104	1.372	1.345	1.845	0.935	1.725	0.984	1.698	0.421	0.931	3.050	53,503,907	1,632,000
100,000	0.000	1.104	1.104	1.345	1.485	0.915	1.359	0.984	1.337	0.421	0.931	2.689	73,388,044	1,973,000
												Total:	\$314,568,330	\$10,305,000

(A) Based on deductible analysis and Pool - Exhibit 3, Page 4.

(B) Based on \$100K & \$1M analyses and Exhibit 6.

(C) (A) + (B)

(D) Based on Pool - Appendix I

(E) (C) x (D)

(F) Based on Pool - Appendix H

(G) (E) x (F)

(H) Off- Balance Factor

(I) (G) x (H)

(J) Includes projected Fiscal Year 2017-18 Administrative Expenses Premium of \$0.421 per \$100 of payroll.

(K) Includes projected Fiscal Year 2017-18 Excess Insurance Premium of \$0.931 per \$100 of payroll. Includes CARMA, but excludes ERMA EPL Premium.

(L) (I) + (J) + (K)

(M) Provided by Authority

(N) (L) x (M)

Municipal Pooling Authority - Liability

Estimated Financial Position of the Liability
Insurance Pool as of June 30, 2017

Liability Insurance

1. Estimated Assets Available to Pay Claims as of June 30, 2016	\$17,191,000
2. Premiums Collected in Fiscal Year 2016-2017 (gross of member rebates and retrospective premiums)	\$10,708,000
3. Estimated Investment Income Earned in Fiscal Year 2016-2017 at 2.0% Interest	\$135,000
4. Other Income (Dividends Received)	-
5. Operating and Administrative Expenses Budgeted for Fiscal Year 2016-2017 (including the excess insurance premium and the premium for coverage of employment practices liability claims)	5,238,000
6. Estimated Pooled Losses Paid in Fiscal Year 2016-2017	4,427,000
7. Estimated Assets Available to Pay Claims as of June 30, 2017 (1)+(2)+(3)+(4)-(5)-(6)	<u>\$18,369,000</u>
8a. Estimated Claim Liability Reserve for Pooled Losses as of June 30, 2017	13,215,000
8b. Estimated Liability for Outstanding Claims Administration Fee as of June 30, 2017	<u>702,000</u>
9. Excess (Deficiency) of the Net Assets of the Liability Insurance Pool in Comparison With the Estimated Claim Liability Reserve as of (7)-(8a)-(8b)	4,452,000
10a. Estimated Present Value of the Claim Liability Reserve for Pooled Losses as of June 30, 2017	\$12,531,000
10b. Estimated Present Value of Outstanding Liability for Claims Administration Fee as of June 30, 2017	\$666,000
11. Excess (Deficiency) of Assets Available to Pay Claims in Comparison With the Estimated Present Value of the Claim Liability Reserve as of (7)-(10a)-(10b)	<u>\$5,172,000</u>

Municipal Pooling Authority - Liability

Estimated Assets Available to Pay Claims
as of Jun 30, 2016

Liability Insurance

Assets:	
1. Cash and Cash Equivalents as of June 30, 2016	\$2,591,000
2. Investments as of June 30, 2016	-
3. Receivables as of June 30, 2016	
Member Agencies	219,000
Excess Insurance	-
Interest	54,000
Other	992,000
Interprogram Receivables	-
Total	
4. Prepaid Expenses as of June 30, 2016	<u>58,000</u>
5. Total Current Assets as of June 30, 2016	\$3,915,000
6. Member Agencies Receivable as of June 30, 2016	-
7. Interprogram Receivables as of June 30, 2016	-
8. Investments as of June 30, 2016	13,643,000
9. Capital Assets (Net) as of June 30, 2016	<u>25,000</u>
10. Total Noncurrent Assets as of June 30, 2016	\$13,668,000
11. Total Assets as of June 30, 2016 (5)+(10)	<u>=====</u> \$17,582,000
Non- Claims Liabilities:	
12. Accounts Payable as of June 30, 2016	-
13. Accrued Vacation & Payroll Payable as of June 30, 2016	26,000
14. Other Payable as of June 30, 2016	67,000
15. Member Dividends Payable as of June 30, 2016	273,000
16. Capital Assets (Net) as of June 30, 2016	25,000
17. Total Liabilities as of June 30, 2016	<u>=====</u> \$391,000
18. Estimated Assets Available to Pay Claims as of June 30, 2016 (11)-(17)	\$17,191,000

Municipal Pooling Authority - Liability

Selected Increased Limit Factors

	Trended Incurred Losses Limited to										
	\$5,000	\$10,000	\$25,000	\$50,000	\$100,000	\$150,000	\$250,000	\$500,000	\$1,000,000	\$2,500,000	Unlimited
2005-2006	465,189	663,292	997,343	1,287,907	1,595,155	1,712,747	1,912,747	2,412,747	3,412,747	3,995,588	3,995,588
2006-2007	586,439	920,932	1,621,354	2,320,408	3,096,028	3,761,828	4,645,916	5,789,320	6,170,572	6,170,572	6,170,572
2007-2008	487,695	782,650	1,360,223	1,833,438	2,504,689	3,085,348	3,632,391	4,882,391	6,693,079	7,161,717	7,161,717
2008-2009	476,245	736,090	1,267,218	1,855,119	2,671,833	3,177,912	4,009,260	5,369,527	6,369,527	6,759,712	6,759,712
2009-2010	419,350	597,332	945,929	1,369,458	1,784,692	2,036,962	2,197,776	2,447,776	2,947,776	3,119,440	3,119,440
2010-2011	561,687	918,250	1,601,178	2,263,365	3,171,677	3,813,082	4,807,537	6,590,712	8,351,141	8,520,309	8,520,309
2011-2012	449,767	676,763	1,134,144	1,668,110	2,309,774	2,769,381	3,491,054	4,353,233	5,353,233	5,658,651	5,658,651
2012-2013	447,058	672,126	1,214,586	1,881,858	2,853,532	3,461,636	4,300,138	5,156,441	6,656,441	7,162,099	7,162,099
2013-2014	415,354	636,315	1,072,257	1,498,182	2,067,519	2,374,709	2,832,625	3,332,625	4,332,625	4,723,693	4,723,693
2014-2015	435,214	649,079	1,085,331	1,666,423	2,524,878	3,078,466	3,640,248	3,954,856	4,454,856	4,516,064	4,516,064
2015-2016	509,672	801,512	1,366,892	1,967,142	2,642,742	3,160,039	3,854,847	4,778,979	5,735,824	5,776,224	5,776,224
Total	5,253,673	8,054,340	13,666,453	19,611,410	27,222,521	32,432,110	39,324,540	49,068,606	60,477,820	63,564,070	63,564,070
2005-2006	0.292	0.416	0.625	0.807	1.000	1.074	1.199	1.513	2.139	2.505	2.505
2006-2007	0.189	0.297	0.524	0.749	1.000	1.215	1.501	1.870	1.993	1.993	1.993
2007-2008	0.195	0.312	0.543	0.732	1.000	1.232	1.450	1.949	2.672	2.859	2.859
2008-2009	0.178	0.276	0.474	0.694	1.000	1.189	1.501	2.010	2.384	2.530	2.530
2009-2010	0.235	0.335	0.530	0.767	1.000	1.141	1.231	1.372	1.652	1.748	1.748
2010-2011	0.177	0.290	0.505	0.714	1.000	1.202	1.516	2.078	2.633	2.686	2.686
2011-2012	0.195	0.293	0.491	0.722	1.000	1.199	1.511	1.885	2.318	2.450	2.450
2012-2013	0.157	0.236	0.426	0.659	1.000	1.213	1.507	1.807	2.333	2.510	2.510
2013-2014	0.201	0.308	0.519	0.725	1.000	1.149	1.370	1.612	2.096	2.285	2.285
2014-2015	0.172	0.257	0.430	0.660	1.000	1.219	1.442	1.566	1.764	1.789	1.789
2015-2016	0.193	0.303	0.517	0.744	1.000	1.196	1.459	1.808	2.170	2.186	2.186
Total	0.193	0.296	0.502	0.720	1.000	1.191	1.445	1.803	2.222	2.335	2.335
7-Year Avg	0.187	0.285	0.485	0.710	1.000	1.192	1.448	1.764	2.180	2.275	2.275
5-Year Avg	0.182	0.277	0.474	0.700	1.000	1.197	1.461	1.740	2.140	2.245	2.245
3-Year Avg	0.188	0.288	0.487	0.709	1.000	1.190	1.427	1.668	2.007	2.075	2.075
Prior	0.196	0.304	0.512	0.730	1.000	1.180	1.408	1.683	1.961	2.036	2.059
Selection	0.192	0.295	0.500	0.720	1.000	1.188	1.433	1.750	2.121	2.215	2.223

Municipal Pooling Authority - Liability

Estimated Claim Liability Reserve For Pooled Losses as of

Claims Incurred in Fiscal Year:	Estimated Ultimate Losses Gross of Deductibles and Net of Excess Insurance Recoveries (1)	Estimated Ultimate Losses Within Deductibles (2)	Estimated Ultimate Pooled Losses (1)-(2) (3)	Estimated Ultimate Pooled Losses (4)	Pooled Losses Paid as of 9/30/2016 (5)	Estimated Pooled Losses Unpaid as of 9/30/2016 (3)+(4)-(5) (6)
Prior	\$4,566,221	\$1,617,323	\$2,948,898	\$0	\$2,877,958	\$71,000
1996-1997	1,876,897	720,981	1,155,916	0	1,155,916	0
1997-1998	3,851,532	849,027	3,002,505	0	3,002,505	0
1998-1999	4,069,196	1,086,626	2,982,570	0	2,982,570	0
1999-2000	2,495,245	916,560	1,578,685	0	1,578,685	0
2000-2001	3,372,352	892,211	2,480,141	0	2,480,141	0
2001-2002	2,116,036	912,011	1,204,025	0	1,204,025	0
2002-2003	3,607,000	1,288,403	2,318,597	0	1,987,376	331,000
2003-2004	2,210,245	847,000	1,363,245	0	1,363,073	0
2004-2005	3,113,942	715,000	2,398,942	0	2,398,527	0
2005-2006	4,963,000	1,072,000	3,891,000	0	3,741,015	150,000
2006-2007	5,875,102	1,218,000	4,657,102	0	4,656,404	1,000
2007-2008	5,657,000	1,127,000	4,530,000	0	4,145,929	384,000
2008-2009	2,668,000	773,000	1,895,000	0	1,889,364	6,000
2009-2010	7,392,000	1,387,000	6,005,000	0	5,156,391	849,000
2010-2011	5,014,000	878,000	4,136,000	0	3,524,310	612,000
2011-2012	6,466,000	1,334,000	5,132,000	0	4,273,911	858,000
2012-2013	4,207,000	1,161,000	3,046,000	0	1,973,825	1,072,000
2013-2014	4,581,000	1,137,000	3,444,000	0	1,992,943	1,451,000
2014-2015	5,279,000	1,603,000	3,676,000	0	1,062,167	2,614,000
2015-2016	5,470,000	1,720,000	3,750,000	0	120,354	3,630,000
2016-2017	6,206,000	1,699,000	4,507,000	0	0	4,506,000
Totals	\$95,056,768	\$24,954,142	\$70,102,626	\$0	\$53,567,389	\$16,535,000

(6) Estimated Pooled Losses Paid From 10/01/16 through 06/30/17

3,320,000

(7) Estimated Claim Liability Reserve as of 06/30/17

\$13,215,000

=====

Notes: 1. Losses include allocated loss expenses.

2. Fiscal years begin on July 1.

3. Losses on claims closed prior to 1992-93 are generally not included.

Municipal Pooling Authority - Liability

Present Value of the Estimated Claim Liability Reserve for Pooled Losses

Claims Incurred in Fiscal Year:	Estimated Unpaid Losses as of 06/30/17 (000)																				
		2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37
Prior	\$35	\$35	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1996-1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997-1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998-1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999-2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000-2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001-2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002-2003	266	99	66	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003-2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004-2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005-2006	128	30	22	15	23	15	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006-2007	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007-2008	301	74	43	43	32	22	33	22	33	0	0	0	0	0	0	0	0	0	0	0	0
2008-2009	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009-2010	661	205	133	79	46	46	35	23	35	24	36	0	0	0	0	0	0	0	0	0	0
2010-2011	461	140	99	65	38	22	22	17	11	17	11	17	0	0	0	0	0	0	0	0	0
2011-2012	679	213	142	100	65	39	22	23	17	11	17	12	17	0	0	0	0	0	0	0	0
2012-2013	776	240	168	112	79	52	31	18	18	13	9	14	9	14	0	0	0	0	0	0	0
2013-2014	1,013	386	194	136	90	64	42	25	14	14	11	7	11	7	11	0	0	0	0	0	0
2014-2015	1,811	734	411	206	145	96	68	44	26	15	15	12	8	12	8	12	0	0	0	0	0
2015-2016	2,955	1,064	766	429	215	151	100	71	46	28	16	16	12	8	12	8	12	0	0	0	0
2016-2017	4,124	870	1,171	843	472	237	166	111	78	51	30	17	18	13	9	13	9	14	0	0	0
Total	\$13,215	\$4,091	\$3,216	\$2,129	\$1,207	\$744	\$543	\$354	\$280	\$174	\$146	\$95	\$75	\$54	\$40	\$33	\$21	\$14	\$0	\$0	\$0
Present Value Factors at 2.0% Interest		0.947	0.954	0.954	0.949	0.944	0.942	0.941	0.939	0.935	0.931	0.932	0.936	0.941	0.948	0.954	0.958	0.952	0.958	0.961	0.980
Present Value of Future Payments (1)x(2)		\$3,873	\$3,069	\$2,030	\$1,145	\$702	\$511	\$333	\$263	\$163	\$136	\$88	\$70	\$51	\$38	\$32	\$20	\$13	\$0	\$0	\$0
Total Present Value of the Estimated Reserve (sum of line (3))		\$12,537																			

Notes:

The loss payment pattern is based on the Authority's historical pattern of paying pooled liability insurance losses.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

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)	Composite Exposure (D)	Trended Limited Loss Rate (E)
Prior	\$3,035,000	1.516	\$4,601,060	1,969,752	2.336
1996-1997	1,430,014	1.486	2,125,001	2,010,023	1.057
1997-1998	2,091,721	1.457	3,047,637	2,119,475	1.438
1998-1999	2,588,886	1.428	3,696,929	2,266,505	1.631
1999-2000	2,057,287	1.400	2,880,202	2,334,583	1.234
2000-2001	1,820,083	1.373	2,498,974	2,532,995	0.987
2001-2002	1,760,695	1.346	2,369,895	2,596,568	0.913
2002-2003	2,141,000	1.319	2,823,979	2,297,411	1.229
2003-2004	1,542,158	1.294	1,995,552	2,604,517	0.766
2004-2005	1,314,000	1.268	1,666,152	2,654,878	0.628
2005-2006	2,773,000	1.243	3,446,839	2,753,355	1.252
2006-2007	2,280,213	1.219	2,779,580	2,911,683	0.955
2007-2008	2,405,000	1.195	2,873,975	3,162,302	0.909
2008-2009	1,611,115	1.172	1,888,227	3,236,182	0.583
2009-2010	2,951,000	1.149	3,390,699	3,087,007	1.098
2010-2011	2,170,000	1.126	2,443,420	2,925,967	0.835
2011-2012	2,714,000	1.104	2,996,256	2,806,839	1.067
2012-2013	1,937,000	1.082	2,095,834	2,656,387	0.789
2013-2014	2,423,000	1.061	2,570,803	2,651,799	0.969
2014-2015	2,396,000	1.040	2,491,840	2,711,739	0.919
2015-2016	2,679,000	1.020	2,732,580	3,001,856	0.910
Totals	\$46,120,172		\$57,415,434	55,291,823	\$1.038
11/12-15/16	12,149,000		12,887,313	13,828,620	0.932
13/14-15/16	7,498,000		7,795,223	8,365,394	0.932
			(F) Selected Limited Rate:		\$0.930
			Prior Selected Limited Rate:		\$0.970

Program Year:	2016-2017	2017-2018
(G) Factor to SIR:	2.121	2.153
(H) Trend Factor:	1.000	1.020
(I) Program Rate:	\$1.973	\$2.042
(J) Composite Exposure:	3,145,683	3,177,140
(K) Projected Program Losses:	6,206,000	6,488,000

Notes appear on the next page.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

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

Notes:

- (A) From Pool - Exhibit 3, Page 4, Column (F).
For purposes of projecting future losses, losses are capped at \$100,000 per occurrence.
- (B) From Pool - Appendix E, Column (B).
- (C) (A) x (B).
- (D) From Pool - Appendix L, Page Page 2, Column (G).
- (E) (C) / (D).
- (F) Selected based on (E).
- (G) Based on a Burr distribution, a mathematical model of claim sizes.
- (H) From Pool - Appendix E.
 - (I) (F) x (G) x (H).
- (J) From Pool - Appendix L, Page Page 2, Column (G).
- (K) (I) x (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 exposure. 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Reported Loss Development

Accident Year (A)	Limited Reported Losses as of 9/30/16 (B)	Reported Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Reported Losses of 9/30/16 (E)	Reported Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$3,034,770	1.000	\$3,034,770	\$4,566,221	1.000	\$4,566,221
1996-1997	1,430,014	1.000	1,430,014	1,876,897	1.000	1,876,897
1997-1998	2,091,721	1.000	2,091,721	3,851,532	1.000	3,851,532
1998-1999	2,588,886	1.000	2,588,886	4,069,196	1.000	4,069,196
1999-2000	2,057,287	1.000	2,057,287	2,495,245	1.000	2,495,245
2000-2001	1,820,083	1.000	1,820,083	3,372,352	1.000	3,372,352
2001-2002	1,760,695	1.000	1,760,695	2,116,036	1.000	2,116,036
2002-2003	2,141,098	1.000	2,141,098	3,606,559	1.000	3,606,559
2003-2004	1,542,158	1.000	1,542,158	2,210,245	1.000	2,210,245
2004-2005	1,313,942	1.000	1,313,942	3,113,942	1.000	3,113,942
2005-2006	2,772,583	1.000	2,772,583	4,962,763	1.000	4,962,763
2006-2007	2,280,213	1.000	2,280,213	5,875,102	1.000	5,875,102
2007-2008	2,405,240	1.000	2,405,240	5,656,225	1.000	5,656,225
2008-2009	1,611,115	1.001	1,612,726	2,662,400	1.002	2,667,725
2009-2010	2,945,341	1.002	2,951,232	7,355,544	1.005	7,392,322
2010-2011	2,163,783	1.003	2,170,274	4,949,756	1.013	5,014,103
2011-2012	2,704,169	1.004	2,714,986	6,297,539	1.027	6,467,573
2012-2013	1,918,528	1.009	1,935,795	4,073,090	1.055	4,297,110
2013-2014	2,356,313	1.029	2,424,646	3,810,765	1.150	4,382,380
2014-2015	2,246,639	1.066	2,394,917	4,164,672	1.333	5,551,508
2015-2016	1,828,479	1.459	2,667,751	2,785,778	2.197	6,120,354
Totals	\$45,013,057		\$46,111,017	\$83,871,859		\$89,665,390

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 Pool - Appendix A, Page 2.
- (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 Pool - Appendix A, Page 4.
- (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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Reported Loss Development

Accident Year	<u>Limited Losses Reported as of:</u>										
	3 Months	15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months	99 Months	111 Months	123 Months
1995-1996	190,817	1,606,190	1,433,528	1,401,264	1,432,281	1,445,596	1,470,736	1,446,016	1,427,157	1,427,157	1,427,187
1996-1997	170,242	1,766,529	1,976,650	1,852,084	1,705,148	1,704,098	1,735,690	1,684,368	1,684,368	1,683,582	1,683,582
1997-1998	169,078	1,483,452	1,697,868	1,744,090	1,757,353	1,703,500	1,690,716	1,690,716	2,091,435	2,091,435	2,091,435
1998-1999	529,294	2,393,742	2,735,181	2,396,200	2,418,279	2,421,333	2,424,187	2,588,886	2,588,886	2,588,886	2,588,886
1999-2000	294,294	1,992,953	2,392,205	1,992,514	2,008,270	1,952,977	1,974,534	2,016,005	2,066,477	2,066,890	2,071,991
2000-2001	265,206	2,123,030	1,993,309	1,819,047	1,751,137	1,741,747	1,741,747	1,820,083	1,820,083	1,820,083	1,820,083
2001-2002	311,603	1,658,179	1,974,557	1,729,496	1,711,881	1,776,881	1,761,355	1,761,355	1,760,696	1,760,695	1,760,695
2002-2003	309,264	2,175,213	2,755,377	2,013,855	2,048,961	2,050,970	2,049,949	2,049,949	2,049,949	2,049,949	2,149,949
2003-2004	220,107	1,485,260	1,519,014	1,543,247	1,556,078	1,541,307	1,539,283	1,539,282	1,539,282	1,539,282	1,539,282
2004-2005	188,923	1,016,513	1,170,405	1,307,276	1,335,738	1,292,074	1,292,074	1,292,073	1,292,073	1,304,762	1,304,762
2005-2006	246,989	2,074,287	2,910,735	3,046,058	2,945,077	2,775,199	2,779,169	2,773,257	2,773,260	2,772,583	2,772,583
2006-2007	164,943	1,931,880	2,394,480	2,470,190	2,540,276	2,232,651	2,232,651	2,280,213	2,280,214	2,280,213	2,280,213
2007-2008	134,123	1,745,953	2,296,443	2,122,407	2,198,687	2,228,445	2,320,240	2,360,240	2,360,240	2,405,240	
2008-2009	163,703	1,059,457	1,425,937	1,605,086	1,653,231	1,641,891	1,646,892	1,666,892	1,611,115		
2009-2010	295,937	1,742,879	3,017,268	3,327,448	3,115,671	2,924,825	2,940,755	2,945,341			
2010-2011	142,201	1,782,520	2,170,413	2,237,016	2,054,881	2,148,787	2,163,783				
2011-2012	238,903	1,770,073	2,703,704	2,642,857	2,672,182	2,704,169					
2012-2013	94,815	1,366,827	1,949,263	2,038,683	1,918,528						
2013-2014	109,986	1,995,919	2,437,225	2,356,313							
2014-2015	159,053	2,035,387	2,246,639								
2015-2016	222,396	1,828,479									
2016-2017	72,515										

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 through 2016-17 diagonal is valued as of 9/30.

Reported Loss Development Factors:

	3-15 Months	15-27 Months	27-39 Months	39-51 Months	51-63 Months	63-75 Months	75-87 Months	87-99 Months	99-111 Months	111-123 Months	123-135 Months
1995-1996	8.417	0.893	0.977	1.022	1.009	1.017	0.983	0.987	1.000	1.000	1.000
1996-1997	10.377	1.119	0.937	0.921	0.999	1.019	0.970	1.000	1.000	1.000	
1997-1998	8.774	1.145	1.027	1.008	0.969	0.992	1.000	1.237	1.000	1.000	1.000
1998-1999	4.523	1.143	0.876	1.009	1.001	1.001	1.068	1.000	1.000	1.000	1.000
1999-2000	6.772	1.200	0.833	1.008	0.972	1.011	1.021	1.025	1.000	1.002	1.000
2000-2001	8.005	0.939	0.913	0.963	0.995	1.000	1.045	1.000	1.000	1.000	1.000
2001-2002	5.321	1.191	0.876	0.990	1.038	0.991	1.000	1.000	1.000	1.000	1.000
2002-2003	7.034	1.267	0.731	1.017	1.001	1.000	1.000	1.000	1.000	1.049	1.000
2003-2004	6.748	1.023	1.016	1.008	0.991	0.999	1.000	1.000	1.000	1.000	1.065
2004-2005	5.381	1.151	1.117	1.022	0.967	1.000	1.000	1.000	1.010	1.000	1.007
2005-2006	8.398	1.403	1.046	0.967	0.942	1.001	0.998	1.000	1.000	1.000	1.000
2006-2007	11.712	1.239	1.032	1.028	0.879	1.000	1.021	1.000	1.000	1.000	
2007-2008	13.018	1.315	0.924	1.036	1.014	1.041	1.017	1.000	1.019		
2008-2009	6.472	1.346	1.126	1.030	0.993	1.003	1.012	0.967			
2009-2010	5.889	1.731	1.103	0.936	0.939	1.005	1.002				
2010-2011	12.535	1.218	1.031	0.919	1.046	1.007					
2011-2012	7.409	1.527	0.977	1.011	1.012						
2012-2013	14.416	1.426	1.046	0.941							
2013-2014	18.147	1.221	0.967								
2014-2015	12.797	1.104									
2015-2016	8.222										
Average Dollar-weighted Averages	9.065	1.230	0.977	0.991	0.986	1.005	1.009	1.015	1.002	1.004	1.007
3-yr	11.924	1.229	0.993	0.961	0.992	1.005	1.009	0.991	1.006	1.000	1.019
4-yr	12.327	1.303	1.002	0.953	0.992	1.014	1.012	0.994	1.007	1.000	1.014
Industry Factors Prior	5.584	1.394	1.028	0.965	0.964	1.000	1.000	1.000	1.000	1.000	1.000
Selected	12.465	1.369	1.036	1.020	1.005	1.001	1.001	1.001	1.001	1.000	1.000
Cumulated	18.187	1.459	1.066	1.029	1.009	1.004	1.003	1.002	1.001	1.000	1.000

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Reported Loss Development

Limited Losses Reported as of:

Accident Year	135 Months	147 Months	159 Months	171 Months	183 Months	195 Months	207 Months	219 Months	231 Months	243 Months	255 Months
1995-1996	1,427,187										
1996-1997											
1997-1998	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721			
1998-1999	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886			
1999-2000	2,071,991	2,073,489	2,057,287	2,057,287	2,057,287	2,057,287	2,057,287	2,057,287			
2000-2001	1,820,083	1,820,083	1,820,083	1,820,083	1,820,084	1,820,083					
2001-2002	1,760,695	1,760,695	1,760,695	1,760,695	1,760,695						
2002-2003	2,149,949	2,149,949	2,141,098	2,141,098							
2003-2004	1,639,282	1,542,158									
2004-2005	1,313,942	1,313,942									
2005-2006	2,772,583										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 through 2016-17 diagonal is valued as of 9/30.

	135-147 Months	147-159 Months	159-171 Months	171-183 Months	183-195 Months	195-207 Months	207-219 Months	219-231 Months	231-243 Months	243-255 Months	255-Ult. Months
1995-1996											
1996-1997											
1997-1998	1.000	1.000	1.000	1.000	1.000	1.000					
1998-1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1999-2000	1.001	0.992	1.000	1.000	1.000	1.000					
2000-2001	1.000	1.000	1.000	1.000	1.000						
2001-2002	1.000	1.000	1.000	1.000							
2002-2003	1.000	0.996	1.000								
2003-2004	0.941	1.000									
2004-2005	1.000										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
Average Dollar-weighted Averages	0.993	0.998	1.000	1.000	1.000	1.000					
3-yr	0.981	0.998	1.000	1.000	1.000	1.000					
4-yr	0.986	0.999	1.000	1.000	1.000						
Industry Factors	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Prior	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulated	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Municipal Pooling Authority - Liability - 100K & SIR Analyses
 Reported between \$100,000 and \$1,000,000 Loss Development

Accident Year	<u>Losses Reported as of:</u>										
	3 Months	15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months	99 Months	111 Months	123 Months
1995-1996											900,264
1996-1997										446,883	446,883
1997-1998									1,721,945	1,745,817	1,745,817
1998-1999								1,480,310	1,480,310	1,480,310	1,480,310
1999-2000							460,684	460,684	447,620	447,620	447,620
2000-2001						1,630,606	1,630,606	1,552,269	1,552,269	1,552,269	1,552,269
2001-2002					260,876	333,680	373,680	373,680	373,680	393,744	355,342
2002-2003				1,347,188	927,667	1,031,606	998,427	998,427	998,427	998,427	1,141,807
2003-2004			225,624	753,386	700,696	703,320	673,087	668,087	668,087	668,087	668,087
2004-2005		300,000	575,000	900,000	1,185,000	1,281,292	1,447,400	1,778,109	1,799,275	1,800,000	1,800,000
2005-2006		213,359	1,322,004	2,245,154	2,430,884	1,866,893	1,924,857	2,274,857	2,385,301	2,185,301	2,190,180
2006-2007		975,135	1,744,073	2,888,802	3,570,836	3,615,136	3,610,583	3,594,889	3,594,889	3,594,889	3,594,889
2007-2008		142,500	171,414	1,470,476	2,028,873	2,043,546	2,447,953	3,250,985	3,250,985	3,250,985	
2008-2009		933,775	933,775	1,002,041	1,091,420	1,051,285	1,051,285	1,051,285	1,051,285		
2009-2010		685,920	1,194,566	2,056,548	2,768,458	2,984,657	3,411,428	4,410,202			
2010-2011		680,673	1,251,956	2,467,395	2,573,921	2,796,885	2,785,974				
2011-2012		7,089	614,161	2,348,916	3,526,354	3,593,370					
2012-2013		85,000	137,002	713,401	2,154,562						
2013-2014		586,675	1,420,772	1,454,452							
2014-2015		282,501	1,918,033								
2015-2016	404,561	957,300									
2016-2017											

Amounts Include All Locations Except Richmond
 The 2012-13 diagonal is valued as of 10/31/12.
 The 2013-14 through 2016-17 diagonal is valued as of 9/30.

Reported Loss Development Factors:

	3-15 Months	15-27 Months	27-39 Months	39-51 Months	51-63 Months	63-75 Months	75-87 Months	87-99 Months	99-111 Months	111-123 Months	123-135 Months
1995-1996											1.000
1996-1997										1.000	1.000
1997-1998									1.014	1.000	1.000
1998-1999								1.000	1.000	1.000	1.000
1999-2000							1.000	0.972	1.000	1.000	1.000
2000-2001						1.000	0.952	1.000	1.000	1.000	1.000
2001-2002					1.279	1.120	1.000	1.000	1.054	0.902	1.000
2002-2003				0.689	1.112	0.968	1.000	1.000	1.000	1.144	1.131
2003-2004			3.339	0.930	1.004	0.957	0.993	1.000	1.000	1.000	1.045
2004-2005		1.917	1.565	1.317	1.081	1.130	1.228	1.012	1.000	1.000	1.000
2005-2006		6.196	1.698	1.083	0.768	1.031	1.182	1.049	0.916	1.002	1.000
2006-2007		1.789	1.656	1.236	1.012	0.999	0.996	1.000	1.000	1.000	
2007-2008		1.203	8.579	1.380	1.007	1.198	1.328	1.000	1.000		
2008-2009		1.000	1.073	1.089	0.963	1.000	1.000	1.000			
2009-2010		1.742	1.722	1.346	1.078	1.143	1.293				
2010-2011		1.839	1.971	1.043	1.087	0.996					
2011-2012		86.636	3.825	1.501	1.019						
2012-2013		1.612	5.207	3.020							
2013-2014		2.422	1.024								
2014-2015		6.789									
2015-2016	2.366										
Average Dollar-weighted Averages	2.366	10.286	2.878	1.330	1.037	1.049	1.088	1.003	0.999	1.004	1.018
3-yr		3.643	2.080	1.493	1.057	1.061	1.261	1.000	0.978	1.001	1.006
4-yr		4.255	2.040	1.453	1.047	1.092	1.170	1.011	0.982	1.001	1.031
Industry Factors	6.803	2.353	1.344	1.178	1.052	1.027	1.016	1.005	1.003	1.000	1.000
Prior	6.803	2.353	1.344	1.178	1.052	1.027	1.016	1.005	1.003	1.000	1.000
Selected	6.803	2.353	1.344	1.178	1.052	1.027	1.016	1.005	1.003	1.000	1.000
Cumulated	28.062	4.125	1.753	1.304	1.107	1.052	1.024	1.008	1.003	1.000	1.000

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Reported between \$100,000 and \$1,000,000 Loss Development

Losses Reported as of:

Accident Year	135 Months	147 Months	159 Months	171 Months	183 Months	195 Months	207 Months	219 Months	231 Months	243 Months	255 Months
1995-1996	900,264										
1996-1997									446,883	899,600	1,531,451
1997-1998	1,745,817	1,745,817	1,780,817	1,759,811	1,759,811	1,759,811	1,759,811	1,759,811	1,759,811	446,883	
1998-1999	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310		
1999-2000	447,620	437,958	437,958	437,958	437,958	437,958	437,958	437,958			
2000-2001	1,552,269	1,552,269	1,552,269	1,552,269	1,552,269	1,552,269					
2001-2002	355,342	355,342	355,342	355,342	355,342						
2002-2003	1,291,873	1,363,770	1,363,770	1,465,461							
2003-2004	698,183	668,087	668,087								
2004-2005	1,800,000	1,800,000									
2005-2006	2,190,180										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 through 2016-17 diagonal is valued as of 9/30.

	135-147 Months	147-159 Months	159-171 Months	171-183 Months	183-195 Months	195-207 Months	207-219 Months	219-231 Months	231-243 Months	243-255 Months	255-Ult. Months
1995-1996										1.702	
1996-1997									1.000		
1997-1998	1.000	1.020	0.988	1.000	1.000	1.000	1.000	1.000			
1998-1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1999-2000	0.978	1.000	1.000	1.000	1.000	1.000					
2000-2001	1.000	1.000	1.000	1.000	1.000						
2001-2002	1.000	1.000	1.000	1.000							
2002-2003	1.056	1.000	1.075								
2003-2004	0.957	1.000									
2004-2005	1.000										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
Average Dollar-weighted Averages	0.999	1.003	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.702	
3-yr	1.011	1.000	1.031	1.000	1.000	1.000					
4-yr	1.010	1.000	1.027	1.000	1.000						
Industry Factors	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Prior	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulated	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Paid Loss Development

Accident Year (A)	Limited Paid Losses as of 9/30/16 (B)	Paid Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Paid Losses of 9/30/16 (E)	Paid Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$3,026,329	1.001	\$3,029,355	\$4,495,281	1.001	\$4,499,776
1996-1997	1,430,014	1.001	1,431,444	1,876,897	1.001	1,878,774
1997-1998	2,091,721	1.001	2,093,813	3,851,532	1.002	3,859,235
1998-1999	2,588,886	1.001	2,591,475	4,069,196	1.002	4,077,334
1999-2000	2,057,287	1.001	2,059,344	2,495,245	1.003	2,502,731
2000-2001	1,820,083	1.002	1,823,723	3,372,352	1.005	3,389,214
2001-2002	1,760,695	1.003	1,765,977	2,116,036	1.007	2,130,848
2002-2003	2,140,604	1.004	2,149,166	3,275,779	1.010	3,308,537
2003-2004	1,542,158	1.005	1,549,869	2,210,245	1.012	2,236,768
2004-2005	1,313,942	1.006	1,321,826	3,113,942	1.016	3,163,765
2005-2006	2,772,583	1.007	2,791,991	4,812,800	1.020	4,909,056
2006-2007	2,280,159	1.009	2,300,680	5,874,898	1.025	6,021,770
2007-2008	2,337,148	1.011	2,362,857	5,272,867	1.036	5,462,690
2008-2009	1,610,909	1.014	1,633,462	2,662,095	1.053	2,803,186
2009-2010	2,931,982	1.018	2,984,758	6,530,236	1.077	7,033,064
2010-2011	2,136,783	1.029	2,198,750	4,402,574	1.119	4,926,480
2011-2012	2,645,334	1.042	2,756,438	5,555,095	1.173	6,516,126
2012-2013	1,684,171	1.090	1,835,746	3,063,117	1.304	3,994,305
2013-2014	1,761,374	1.269	2,235,184	2,922,893	1.641	4,796,467
2014-2015	979,244	2.118	2,074,039	1,879,244	2.952	5,547,528
2015-2016	478,043	5.154	2,463,834	520,952	8.301	4,324,423
Totals	\$41,389,449		\$45,453,731	\$74,373,276		\$87,382,077

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 Pool - Appendix B, Page 2.
- (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 Pool - Appendix B, Page 4.
- (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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Paid Loss Development

Limited Losses Paid as of:

Accident Year	3 Months	15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months	99 Months	111 Months	123 Months
1995-1996	18,690	322,241	868,794	1,287,466	1,388,809	1,406,134	1,421,109	1,425,263	1,427,157	1,427,157	1,427,187
1996-1997	34,329	388,880	1,169,152	1,545,211	1,606,045	1,660,935	1,717,701	1,684,368	1,684,368	1,683,582	1,683,582
1997-1998	36,369	544,195	1,066,982	1,443,311	1,653,983	1,685,050	1,678,047	1,679,541	2,090,565	2,091,200	2,091,200
1998-1999	74,732	881,651	1,698,019	2,142,970	2,340,559	2,394,548	2,421,686	2,588,886	2,588,886	2,588,886	2,588,886
1999-2000	63,040	522,319	1,248,203	1,856,586	1,914,759	1,930,952	1,958,533	1,985,027	2,049,475	2,050,069	2,051,491
2000-2001	61,525	517,656	1,038,085	1,437,230	1,699,567	1,741,747	1,741,747	1,820,083	1,820,083	1,820,083	1,820,083
2001-2002	35,892	525,326	1,088,151	1,678,740	1,704,721	1,711,211	1,760,695	1,760,695	1,760,695	1,760,695	1,760,695
2002-2003	56,886	423,517	1,209,671	1,669,493	1,978,800	2,042,565	2,042,449	2,042,449	2,042,449	2,049,949	2,105,300
2003-2004	21,792	507,209	920,162	1,371,999	1,491,288	1,539,282	1,539,282	1,539,282	1,539,282	1,539,282	1,539,282
2004-2005	41,320	344,663	629,114	1,088,778	1,223,314	1,292,073	1,292,073	1,292,073	1,292,073	1,304,762	1,304,762
2005-2006	47,511	735,664	1,792,959	2,516,628	2,737,275	2,759,638	2,771,738	2,771,826	2,773,260	2,772,583	2,772,583
2006-2007	80,775	426,040	1,091,919	1,846,954	2,166,534	2,231,889	2,231,889	2,280,159	2,280,159	2,280,159	2,280,159
2007-2008	36,550	446,730	1,214,293	1,913,002	2,090,917	2,125,363	2,141,570	2,263,998	2,313,733	2,337,148	
2008-2009	29,427	428,542	751,266	1,336,912	1,529,368	1,579,306	1,585,563	1,608,569	1,610,909		
2009-2010	111,515	581,807	1,389,045	2,172,952	2,555,279	2,778,915	2,879,606	2,931,982			
2010-2011	23,256	414,841	995,267	1,617,716	1,934,070	2,090,073	2,136,783				
2011-2012	36,595	419,903	1,040,534	2,054,041	2,508,516	2,645,334					
2012-2013	27,342	298,068	725,800	1,323,002	1,684,171						
2013-2014	22,981	547,388	1,283,522	1,761,374							
2014-2015	6,781	356,629	979,244								
2015-2016	24,287	478,043									
2016-2017	3,313										

Amounts Include All Locations Except Richmond
 The 2012-13 diagonal is valued as of 10/31/12.
 The 2013-14 through 2016-17 diagonal is valued as of 9/30.

Paid Loss Development Factors:

	3-15 Months	15-27 Months	27-39 Months	39-51 Months	51-63 Months	63-75 Months	75-87 Months	87-99 Months	99-111 Months	111-123 Months	123-135 Months
1995-1996	17.241	2.696	1.482	1.079	1.012	1.011	1.003	1.001	1.000	1.000	1.000
1996-1997	11.328	3.006	1.322	1.039	1.034	1.034	0.981	1.000	1.000	1.000	
1997-1998	14.963	1.961	1.353	1.146	1.019	0.996	1.001	1.245	1.000	1.000	1.000
1998-1999	11.798	1.926	1.262	1.092	1.023	1.011	1.069	1.000	1.000	1.000	1.000
1999-2000	8.286	2.390	1.487	1.031	1.008	1.014	1.014	1.032	1.000	1.001	1.000
2000-2001	8.414	2.005	1.385	1.183	1.025	1.000	1.045	1.000	1.000	1.000	1.000
2001-2002	14.636	2.071	1.543	1.015	1.004	1.029	1.000	1.000	1.000	1.000	1.000
2002-2003	7.445	2.856	1.380	1.185	1.032	1.000	1.000	1.000	1.004	1.027	1.013
2003-2004	23.275	1.814	1.491	1.087	1.032	1.000	1.000	1.000	1.000	1.000	1.065
2004-2005	8.341	1.825	1.731	1.124	1.056	1.000	1.000	1.000	1.010	1.000	1.007
2005-2006	15.484	2.437	1.404	1.088	1.008	1.004	1.000	1.001	1.000	1.000	1.000
2006-2007	5.274	2.563	1.691	1.173	1.030	1.000	1.022	1.000	1.000	1.000	
2007-2008	12.222	2.718	1.575	1.093	1.016	1.008	1.057	1.022	1.010		
2008-2009	14.563	1.753	1.780	1.144	1.033	1.004	1.015	1.001			
2009-2010	5.217	2.387	1.564	1.176	1.088	1.036	1.018				
2010-2011	17.838	2.399	1.625	1.196	1.081	1.022					
2011-2012	11.474	2.478	1.974	1.221	1.055						
2012-2013	10.901	2.435	1.823	1.273							
2013-2014	23.819	2.345	1.372								
2014-2015	52.592	2.746									
2015-2016	19.683										
Average	14.990	2.341	1.539	1.130	1.033	1.011	1.015	1.022	1.002	1.002	1.009
Dollar-weighted											
Averages											
3-yr	25.571	2.486	1.685	1.227	1.074	1.024	1.030	1.008	1.003	1.000	1.019
4-yr	20.643	2.484	1.670	1.211	1.066	1.020	1.028	1.006	1.004	1.000	1.018
Industry											
Factors	6.365	2.439	1.593	1.198	1.064	1.038	1.018	1.010	1.009	1.008	1.007
Prior	14.500	2.421	1.669	1.152	1.041	1.011	1.007	1.004	1.003	1.002	1.002
Selected	18.926	2.434	1.669	1.164	1.046	1.013	1.011	1.004	1.003	1.002	1.002
Cumulated	97.544	5.154	2.118	1.269	1.090	1.042	1.029	1.018	1.014	1.011	1.009

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Paid Loss Development

Limited Losses Paid as of:

Accident Year	135 Months	147 Months	159 Months	171 Months	183 Months	195 Months	207 Months	219 Months	231 Months	243 Months	255 Months
1995-1996	1,427,187										
1996-1997								62,054	81,600	1,133,828	3,026,329
1997-1998	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	2,091,721	1,430,014	
1998-1999	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886	2,588,886		
1999-2000	2,052,135	2,056,966	2,057,287	2,057,287	2,057,287	2,057,287	2,057,287				
2000-2001	1,820,083	1,820,083	1,820,083	1,820,083	1,820,083	1,820,083					
2001-2002	1,760,695	1,760,695	1,760,695	1,760,695	1,760,695						
2002-2003	2,133,151	2,134,723	2,140,604	2,140,604							
2003-2004	1,639,282	1,542,158									
2004-2005	1,313,942	1,313,942									
2005-2006	2,772,583										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 through 2016-17 diagonal is valued as of 9/30.

	135-147 Months	147-159 Months	159-171 Months	171-183 Months	183-195 Months	195-207 Months	207-219 Months	219-231 Months	231-243 Months	243-255 Months	255-Ult. Months
1995-1996											
1996-1997								23.045	13.895	2.669	
1997-1998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
1998-1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1999-2000	1.002	1.000	1.000	1.000	1.000	1.000					
2000-2001	1.000	1.000	1.000	1.000	1.000						
2001-2002	1.000	1.000	1.000	1.000							
2002-2003	1.001	1.003	1.000								
2003-2004	0.941	1.000									
2004-2005	1.000										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
Average Dollar-weighted Averages	0.993	1.000	1.000	1.000	1.000	1.000	1.000	12.023	7.448	2.669	
3-yr	0.981	1.001	1.000	1.000	1.000	1.000					
4-yr	0.986	1.001	1.000	1.000	1.000						
Industry Factors	1.005	1.005	1.004	1.003	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Prior	1.001	1.001	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.001
Selected	1.001	1.001	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.001
Cumulated	1.007	1.006	1.005	1.004	1.003	1.002	1.001	1.001	1.001	1.001	1.001

Municipal Pooling Authority - Liability - 100K & SIR Analyses
 Paid between \$100,000 and \$1,000,000 Loss Development

Accident Year	Losses Paid as of:										
	3 Months	15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months	99 Months	111 Months	123 Months
1995-1996											900,264
1996-1997										446,883	446,883
1997-1998									1,700,278	1,713,809	1,716,370
1998-1999								1,480,310	1,480,310	1,480,310	1,480,310
1999-2000							460,684	460,684	397,620	397,620	397,620
2000-2001						1,630,606	1,630,606	1,552,269	1,552,269	1,552,269	1,552,269
2001-2002					235,876	256,134	302,428	314,846	321,368	355,096	355,342
2002-2003				889,688	920,523	998,119	998,427	998,427	998,427	998,427	998,427
2003-2004			29,250	115,359	628,669	662,233	668,087	668,087	668,087	668,087	668,087
2004-2005				900,000	900,000	984,422	1,089,555	1,499,571	1,792,269	1,799,413	1,800,000
2005-2006		72,583	260,334	977,166	1,748,126	1,805,909	1,857,740	2,068,349	2,376,539	2,178,756	2,180,217
2006-2007			287,044	1,715,313	2,444,181	3,544,921	3,594,739	3,594,739	3,594,739	3,594,739	3,594,739
2007-2008			24,275	528,137	1,663,549	1,696,161	1,778,667	2,935,719	2,935,719	2,935,719	
2008-2009		24,699	924,600	965,050	1,049,821	1,051,186	1,051,186	1,051,186	1,051,186		
2009-2010		6,166	751,815	856,719	1,897,915	2,237,403	2,817,995	3,598,254			
2010-2011			18,211	963,898	1,983,645	2,092,425	2,265,791				
2011-2012				289,888	2,473,154	2,909,761					
2012-2013				107,583	1,378,946						
2013-2014			281,864	1,161,519							
2014-2015			900,000								
2015-2016		42,909									
2016-2017											

Amounts Include All Locations Except Richmond
 The 2012-13 diagonal is valued as of 10/31/12.
 The 2013-14 through 2016-17 diagonal is valued as of 9/30.

Paid Loss Development Factors:

	3-15 Months	15-27 Months	27-39 Months	39-51 Months	51-63 Months	63-75 Months	75-87 Months	87-99 Months	99-111 Months	111-123 Months	123-135 Months
1995-1996											1.000
1996-1997										1.000	
1997-1998									1.008	1.001	1.001
1998-1999								1.000	1.000	1.000	1.000
1999-2000							1.000	0.863	1.000	1.000	1.000
2000-2001						1.000	0.952	1.000	1.000	1.000	1.000
2001-2002					1.086	1.181	1.041	1.021	1.105	1.001	1.000
2002-2003				1.035	1.084	1.000	1.000	1.000	1.000	1.000	1.006
2003-2004			3.944	5.450	1.053	1.009	1.000	1.000	1.000	1.000	1.045
2004-2005				1.000	1.094	1.107	1.376	1.195	1.004	1.000	1.000
2005-2006		3.587	3.754	1.789	1.033	1.029	1.113	1.149	0.917	1.001	0.936
2006-2007			5.976	1.425	1.450	1.014	1.000	1.000	1.000	1.000	
2007-2008			21.756	3.150	1.020	1.049	1.651	1.000	1.000		
2008-2009		37.435	1.044	1.088	1.001	1.000	1.000	1.000			
2009-2010		121.929	1.140	2.215	1.179	1.259	1.277				
2010-2011			52.929	2.058	1.055	1.083					
2011-2012				8.531	1.177						
2012-2013				12.818							
2013-2014			4.121								
2014-2015											
2015-2016											
Average Dollar-weighted Averages		54.317	11.833	3.687	1.112	1.066	1.128	1.021	1.003	1.000	0.999
3-yr				4.287	1.139	1.140	1.343	1.000	0.978	1.000	0.976
4-yr				3.487	1.120	1.118	1.210	1.032	0.982	1.000	0.982
Industry Factors	11.179	4.014	2.045	1.416	1.206	1.095	1.073	1.046	1.033	1.021	1.009
Prior	11.179	4.014	2.045	1.416	1.206	1.095	1.073	1.046	1.033	1.021	1.009
Selected	11.179	4.014	2.045	1.416	1.206	1.095	1.073	1.046	1.033	1.021	1.009
Cumulated	212.781	19.034	4.742	2.319	1.638	1.358	1.240	1.156	1.105	1.070	1.048

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Paid between \$100,000 and \$1,000,000 Loss Development

Accident Year	<u>Losses Paid as of:</u>										
	135 Months	147 Months	159 Months	171 Months	183 Months	195 Months	207 Months	219 Months	231 Months	243 Months	255 Months
1995-1996	900,264										
1996-1997									446,883	899,600	1,468,951
1997-1998	1,718,602	1,724,011	1,768,678	1,759,811	1,759,811	1,759,811	1,759,811	1,759,811	1,759,811	446,883	
1998-1999	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310	1,480,310		
1999-2000	397,620	437,958	437,958	437,958	437,958	437,958	437,958	437,958			
2000-2001	1,552,269	1,552,269	1,552,269	1,552,269	1,552,269	1,552,269					
2001-2002	355,342	355,342	355,342	355,342	355,342						
2002-2003	1,004,125	1,045,572	1,079,420	1,135,175							
2003-2004	698,183	668,087	668,087								
2004-2005	1,800,000	1,800,000									
2005-2006	2,040,217										
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
2016-2017											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 through 2016-17 diagonal is valued as of 9/30.

	135-147 Months	147-159 Months	159-171 Months	171-183 Months	183-195 Months	195-207 Months	207-219 Months	219-231 Months	231-243 Months	243-255 Months	255-Ult. Months
1995-1996										1.633	
1996-1997									1.000		
1997-1998	1.003	1.026	0.995	1.000	1.000	1.000	1.000	1.000			
1998-1999	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1999-2000	1.101	1.000	1.000	1.000	1.000	1.000					
2000-2001	1.000	1.000	1.000	1.000	1.000						
2001-2002	1.000	1.000	1.000	1.000							
2002-2003	1.041	1.032	1.052								
2003-2004	0.957	1.000									
2004-2005	1.000										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											
Average Dollar-weighted Averages	1.013	1.008	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.633	
3-yr	1.003	1.016	1.019	1.000	1.000	1.000					
4-yr	1.003	1.009	1.016	1.000	1.000						
Industry Factors	1.008	1.007	1.005	1.005	1.004	1.003	1.003	1.001	1.001	1.001	1.001
Prior	1.008	1.007	1.005	1.005	1.004	1.003	1.003	1.001	1.001	1.001	1.001
Selected	1.008	1.007	1.005	1.005	1.004	1.003	1.003	1.001	1.001	1.001	1.001
Cumulated	1.039	1.031	1.024	1.019	1.014	1.010	1.007	1.004	1.003	1.002	1.001

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Exposure and Development Method
Based on Reported Losses

Accident Year	Composite Exposure (A)	Reported Losses as of 9/30/16 (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)
Prior	1,969,752	\$4,566,221	1.000	0.000	1.986	\$0	\$4,566,221
1996-1997	2,010,023	1,876,897	1.000	0.000	1.041	0	1,876,897
1997-1998	2,119,475	3,851,532	1.000	0.000	1.469	0	3,851,532
1998-1999	2,266,505	4,069,196	1.000	0.000	1.726	0	4,069,196
1999-2000	2,334,583	2,495,245	1.000	0.000	1.354	0	2,495,245
2000-2001	2,532,995	3,372,352	1.000	0.000	1.125	0	3,372,352
2001-2002	2,596,568	2,116,036	1.000	0.000	1.080	0	2,116,036
2002-2003	2,297,411	3,606,559	1.000	0.000	1.512	0	3,606,559
2003-2004	2,604,517	2,210,245	1.000	0.000	0.977	0	2,210,245
2004-2005	2,654,878	3,113,942	1.000	0.000	0.833	0	3,113,942
2005-2006	2,753,355	4,962,763	1.000	0.000	1.726	0	4,962,763
2006-2007	2,911,683	5,875,102	1.000	0.000	1.369	0	5,875,102
2007-2008	3,162,302	5,656,225	1.000	0.000	1.356	0	5,656,225
2008-2009	3,236,182	2,662,400	1.002	0.002	0.904	5,851	2,668,251
2009-2010	3,087,007	7,355,544	1.005	0.005	1.770	27,320	7,382,864
2010-2011	2,925,967	4,949,756	1.013	0.013	1.402	53,329	5,003,085
2011-2012	2,806,839	6,297,539	1.027	0.026	1.622	118,370	6,415,909
2012-2013	2,656,387	4,073,090	1.055	0.052	1.689	233,305	4,306,395
2013-2014	2,651,799	3,810,765	1.150	0.130	1.757	605,697	4,416,462
2014-2015	2,711,739	4,164,672	1.333	0.250	1.827	1,238,587	5,403,259
2015-2016	3,001,856	2,785,778	2.197	0.545	1.900	3,108,422	5,894,200
Totals	55,291,823	\$83,871,859				\$5,390,881	\$89,262,740

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 Pool - Appendix A, Page 1, Column (F).
- (D) $1 - 1/(C)$.
- (E) From Pool - 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Exposure and Development Method
Based on Paid Losses

Accident Year	Composite Exposure (A)	Paid Losses as of 9/30/16 (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)
Prior	1,969,752	\$4,495,281	1.001	0.001	1.986	\$3,912	\$4,499,193
1996-1997	2,010,023	1,876,897	1.001	0.001	1.041	2,092	1,878,989
1997-1998	2,119,475	3,851,532	1.002	0.002	1.469	6,227	3,857,759
1998-1999	2,266,505	4,069,196	1.002	0.002	1.726	7,824	4,077,020
1999-2000	2,334,583	2,495,245	1.003	0.003	1.354	9,483	2,504,728
2000-2001	2,532,995	3,372,352	1.005	0.005	1.125	14,248	3,386,600
2001-2002	2,596,568	2,116,036	1.007	0.007	1.080	19,630	2,135,666
2002-2003	2,297,411	3,275,779	1.010	0.010	1.512	34,737	3,310,516
2003-2004	2,604,517	2,210,245	1.012	0.012	0.977	30,535	2,240,780
2004-2005	2,654,878	3,113,942	1.016	0.016	0.833	35,384	3,149,326
2005-2006	2,753,355	4,812,800	1.020	0.020	1.726	95,046	4,907,846
2006-2007	2,911,683	5,874,898	1.025	0.024	1.369	95,666	5,970,564
2007-2008	3,162,302	5,272,867	1.036	0.035	1.356	150,083	5,422,950
2008-2009	3,236,182	2,662,095	1.053	0.050	0.904	146,275	2,808,370
2009-2010	3,087,007	6,530,236	1.077	0.071	1.770	387,944	6,918,180
2010-2011	2,925,967	4,402,574	1.119	0.106	1.402	434,834	4,837,408
2011-2012	2,806,839	5,555,095	1.173	0.147	1.622	669,246	6,224,341
2012-2013	2,656,387	3,063,117	1.304	0.233	1.689	1,045,387	4,108,504
2013-2014	2,651,799	2,922,893	1.641	0.391	1.757	1,821,751	4,744,644
2014-2015	2,711,739	1,879,244	2.952	0.661	1.827	3,274,823	5,154,067
2015-2016	3,001,856	520,952	8.301	0.880	1.900	5,019,103	5,540,055
Totals	55,291,823	\$74,373,276				\$13,304,230	\$87,677,506

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 Pool - Appendix B, Page 1, Column (F).
- (D) $1 - 1/(C)$.
- (E) From Pool - 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Exposure and Development Method

Accident Year	Composite Exposure (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)
Prior	1,969,752	\$3,034,770	1.516	\$4,600,711	2.336	1.541	1.289	1.986
1996-1997	2,010,023	1,430,014	1.486	2,125,001	1.057	0.711	1.464	1.041
1997-1998	2,119,475	2,091,721	1.457	3,047,637	1.438	0.987	1.488	1.469
1998-1999	2,266,505	2,588,886	1.428	3,696,929	1.631	1.142	1.512	1.726
1999-2000	2,334,583	2,057,287	1.400	2,880,202	1.234	0.881	1.537	1.354
2000-2001	2,532,995	1,820,083	1.373	2,498,974	0.987	0.719	1.564	1.125
2001-2002	2,596,568	1,760,695	1.346	2,369,895	0.913	0.678	1.593	1.080
2002-2003	2,297,411	2,141,098	1.319	2,824,108	1.229	0.932	1.622	1.512
2003-2004	2,604,517	1,542,158	1.294	1,995,552	0.766	0.592	1.651	0.977
2004-2005	2,654,878	1,313,942	1.268	1,666,078	0.628	0.495	1.683	0.833
2005-2006	2,753,355	2,772,583	1.243	3,446,321	1.252	1.007	1.714	1.726
2006-2007	2,911,683	2,280,213	1.219	2,779,580	0.955	0.783	1.748	1.369
2007-2008	3,162,302	2,405,240	1.195	2,874,262	0.909	0.761	1.782	1.356
2008-2009	3,236,182	1,611,115	1.172	1,888,227	0.583	0.498	1.816	0.904
2009-2010	3,087,007	2,951,000	1.149	3,390,699	1.098	0.956	1.852	1.770
2010-2011	2,925,967	2,170,000	1.126	2,443,420	0.835	0.742	1.889	1.402
2011-2012	2,806,839	2,715,000	1.104	2,997,360	1.068	0.842	1.927	1.622
2012-2013	2,656,387	1,936,000	1.082	2,094,752	0.789	0.860	1.964	1.689
2013-2014	2,651,799	2,425,000	1.061	2,572,925	0.970	0.877	2.003	1.757
2014-2015	2,711,739	2,395,000	1.040	2,490,800	0.919	0.894	2.044	1.827
2015-2016	3,001,856	2,668,000	1.020	2,721,360	0.907	0.912	2.083	1.900
Total/Avg	55,291,823	\$46,109,805		\$57,404,793	\$1.038			
11/12-15/16	13,828,620	12,139,000		12,877,197	\$0.931			
13/14-15/16	8,365,394	7,488,000		7,785,085	\$0.931			
				Selected Limited Rate:	\$0.930			
				Prior Selected Limited Rate:	\$0.975			

Notes:

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Frequency and Severity Method

Accident Year	Ultimate Program Severity (A)	Ultimate Claims (B)	Ultimate Program Losses (C)
Prior	\$10,989	356	\$3,912,084
1996-1997	12,102	173	2,093,646
1997-1998	15,718	198	3,112,164
1998-1999	15,974	245	3,913,630
1999-2000	12,650	250	3,162,500
2000-2001	12,654	225	2,847,150
2001-2002	11,451	245	2,805,495
2002-2003	14,176	245	3,473,120
2003-2004	12,732	200	2,546,400
2004-2005	10,897	203	2,212,091
2005-2006	20,751	229	4,751,979
2006-2007	23,310	171	3,986,010
2007-2008	23,168	185	4,286,080
2008-2009	16,346	179	2,925,934
2009-2010	28,461	192	5,464,512
2010-2011	24,547	167	4,099,349
2011-2012	28,094	160	4,495,040
2012-2013	29,223	160	4,675,680
2013-2014	30,394	179	5,440,526
2014-2015	31,640	187	5,916,680
2015-2016	32,876	230	7,561,480
Total		4,379	\$83,681,550

Notes:

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Frequency and Severity Method

Accident Year	Ultimate Limited Losses (A)	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	\$3,035,000	356	\$8,525	1.516	\$12,924	\$8,525	1.289	\$10,989
1996-1997	1,430,014	173	8,266	1.486	12,283	8,266	1.464	12,102
1997-1998	2,091,721	198	10,564	1.457	15,392	10,564	1.488	15,718
1998-1999	2,588,886	245	10,567	1.428	15,090	10,567	1.512	15,974
1999-2000	2,057,287	250	8,229	1.400	11,521	8,229	1.537	12,650
2000-2001	1,820,083	225	8,089	1.373	11,106	8,089	1.564	12,654
2001-2002	1,760,695	245	7,187	1.346	9,674	7,187	1.593	11,451
2002-2003	2,141,098	245	8,739	1.319	11,527	8,739	1.622	14,176
2003-2004	1,542,158	200	7,711	1.294	9,978	7,711	1.651	12,732
2004-2005	1,313,942	203	6,473	1.268	8,208	6,473	1.683	10,897
2005-2006	2,772,583	229	12,107	1.243	15,049	12,107	1.714	20,751
2006-2007	2,280,213	171	13,335	1.219	16,255	13,335	1.748	23,310
2007-2008	2,405,240	185	13,001	1.195	15,536	13,001	1.782	23,168
2008-2009	1,611,115	179	9,001	1.172	10,549	9,001	1.816	16,346
2009-2010	2,951,000	192	15,370	1.149	17,660	15,370	1.852	28,461
2010-2011	2,170,000	167	12,994	1.126	14,631	12,994	1.889	24,547
2011-2012	2,714,000	160	16,963	1.104	18,727	14,583	1.927	28,094
2012-2013	1,937,000	160	12,106	1.082	13,099	14,880	1.964	29,223
2013-2014	2,423,000	179	13,536	1.061	14,362	15,174	2.003	30,394
2014-2015	2,396,000	187	12,813	1.040	13,326	15,481	2.044	31,640
2015-2016	2,679,000	230	11,648	1.020	11,881	15,784	2.083	32,876

Average Limited Severity \$13,275
Average 11/12-14/15 Limited Severity: \$14,879
Average 11/12-15/16 Limited Severity: \$14,279

Selected Limited Severity: \$14,500
Prior Selected Limited Severity: \$16,100

Notes:

- (A) Selected average of results from Appendices A, B, and C.
- (B) Pool - Appendix D, Page 3, Column (C).
- (C) (A) / (B).
- (D) From Pool - 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

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)
Prior	356	355	356	196.975	1.807	1.000	1.807
1996-1997	173	173	173	201.002	0.861	1.000	0.861
1997-1998	198	199	198	211.948	0.934	1.000	0.934
1998-1999	245	246	245	226.651	1.081	1.000	1.081
1999-2000	250	251	250	233.458	1.071	1.000	1.071
2000-2001	225	226	225	253.300	0.888	1.000	0.888
2001-2002	245	247	245	259.657	0.944	1.000	0.944
2002-2003	245	246	245	229.741	1.066	1.000	1.066
2003-2004	200	202	200	260.452	0.768	1.000	0.768
2004-2005	203	204	203	265.488	0.765	1.000	0.765
2005-2006	229	231	229	275.336	0.832	1.000	0.832
2006-2007	171	173	171	291.168	0.587	1.000	0.587
2007-2008	185	185	185	316.230	0.585	1.000	0.585
2008-2009	179	182	179	323.618	0.553	1.000	0.553
2009-2010	192	191	192	308.701	0.622	1.000	0.622
2010-2011	167	166	167	292.597	0.571	1.000	0.571
2011-2012	160	160	160	280.684	0.570	1.000	0.570
2012-2013	160	156	160	265.639	0.602	1.000	0.602
2013-2014	179	187	179	265.180	0.675	1.000	0.675
2014-2015	187	162	187	271.174	0.690	1.000	0.690
2015-2016	230	155	230	300.186	0.766	1.000	0.766
Total	4,379	4,297	4,379	5,529.182			0.792

(H) Selected 2016-2017 Frequency: 0.715
Prior Selected Frequency: 0.610

Program Year:	2016-2017	2017-2018
(I) Trend Factor:	1.000	1.000
(J) Selected Frequency:	0.715	0.715
(K) Composite Exposure:	314.568	317.714
(L) Ultimate Claims:	225	227

Notes:

- (A) From Pool - Appendix D, Page 4, (C).
- (B) From Pool - Appendix D, Page 5, (C).
- (C) Selected from (A) and (B).
- (D) From Pool - Appendix L, Page 2, (G).
- (E) (C) / (D).
- (F) From Pool - Appendix E.
- (G) (E) x (F).
- (H) The selected frequency of 0.715 is based on (G).
- (I) From Pool - Appendix E.
- (J) (H) x (I).
- (K) From Pool - Appendix L, 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, Pool - Appendix L, Page 2, Item (G).

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Frequency and Severity Method
Reported Claim Count Development

Accident Year	Claims Reported as of 9/30/2016 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	356	1.000	356	1.807
1996-1997	173	1.000	173	0.861
1997-1998	198	1.000	198	0.934
1998-1999	245	1.000	245	1.081
1999-2000	250	1.000	250	1.071
2000-2001	225	1.000	225	0.888
2001-2002	245	1.000	245	0.944
2002-2003	245	1.000	245	1.066
2003-2004	200	1.000	200	0.768
2004-2005	203	1.000	203	0.765
2005-2006	229	1.000	229	0.832
2006-2007	171	1.000	171	0.587
2007-2008	185	1.000	185	0.585
2008-2009	179	1.000	179	0.553
2009-2010	192	1.000	192	0.622
2010-2011	167	1.000	167	0.571
2011-2012	160	1.002	160	0.570
2012-2013	160	1.001	160	0.602
2013-2014	180	0.994	179	0.675
2014-2015	194	0.965	187	0.690
2015-2016	315	0.731	230	0.766
Total	4,472		4,379	0.792

Notes:

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Frequency and Severity Method
Closed Claim Count Development

Accident Year	Claims Closed as of 9/30/2016 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	355	1.001	355	1.802
1996-1997	173	1.002	173	0.861
1997-1998	198	1.003	199	0.939
1998-1999	245	1.004	246	1.085
1999-2000	250	1.005	251	1.075
2000-2001	225	1.006	226	0.892
2001-2002	245	1.007	247	0.951
2002-2003	244	1.008	246	1.071
2003-2004	200	1.009	202	0.776
2004-2005	202	1.010	204	0.768
2005-2006	228	1.011	231	0.839
2006-2007	171	1.012	173	0.594
2007-2008	183	1.013	185	0.585
2008-2009	179	1.014	182	0.562
2009-2010	188	1.015	191	0.619
2010-2011	163	1.020	166	0.567
2011-2012	155	1.032	160	0.570
2012-2013	146	1.067	156	0.587
2013-2014	165	1.131	187	0.705
2014-2015	129	1.255	162	0.597
2015-2016	99	1.569	155	0.516
Total	4,143		4,297	0.777

Notes:

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Reported Claim Count Development

Accident Year	Claims Reported as of:													
	3 Months	15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months	99 Months	111 Months	123 Months	135 Months	147 Months	159 Months
1995-1996	65	305	188	180	181	181	182	182	182	182	184	184		
1996-1997	89	303	205	203	202	203	203	203	203	204	204			
1997-1998	99	276	191	190	190	189	189	194	198	198	198	198	198	198
1998-1999	111	313	244	243	244	243	248	245	245	245	245	245	245	245
1999-2000	94	292	249	240	239	244	249	249	249	249	249	249	249	250
2000-2001	116	299	231	229	227	225	225	225	225	225	225	225	225	225
2001-2002	99	309	254	246	246	246	246	246	246	245	245	245	245	245
2002-2003	96	330	250	244	245	244	244	244	244	244	245	245	245	245
2003-2004	82	299	210	202	198	198	198	197	197	197	197	198	200	200
2004-2005	74	286	206	188	188	187	187	186	186	196	196	203	203	
2005-2006	78	320	229	229	231	228	228	228	229	229	229	229		
2006-2007	74	253	168	167	164	164	164	171	172	171	171			
2007-2008	92	242	188	183	183	182	185	186	186	185				
2008-2009	80	240	188	179	179	179	179	179	179					
2009-2010	84	249	191	193	189	190	192							
2010-2011	78	238	170	165	164	167								
2011-2012	61	204	166	161	160	160								
2012-2013	53	231	167	160	160									
2013-2014	55	241	194	180										
2014-2015	40	257	194											
2015-2016	41	315												
2016-2017	46													

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 through 2016-17 diagonal is valued as of 9/30.

Reported Claim Count Development Factors:

	3-15 Months	15-27 Months	27-39 Months	39-51 Months	51-63 Months	63-75 Months	75-87 Months	87-99 Months	99-111 Months	111-123 Months	123-135 Months	135-147 Months	147-159 Months	159-171 Months
1995-1996	4.692	0.616	0.957	1.006	1.000	1.006	1.000	1.000	1.000	1.011	1.000			
1996-1997	3.404	0.677	0.990	0.995	1.005	1.000	1.000	1.000	1.005	1.000				
1997-1998	2.788	0.692	0.995	1.000	0.995	1.000	1.026	1.021	1.000	1.000	1.000	1.000	1.000	1.000
1998-1999	2.820	0.780	0.996	1.004	0.996	1.021	0.988	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999-2000	3.106	0.853	0.964	0.996	1.021	1.020	1.000	1.000	1.000	1.000	1.000	1.000	1.004	1.000
2000-2001	2.578	0.773	0.991	0.991	0.991	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001-2002	3.121	0.822	0.969	1.000	1.000	1.000	1.000	1.000	0.996	1.000	1.000	1.000	1.000	1.000
2002-2003	3.438	0.758	0.976	1.004	0.996	1.000	1.000	1.000	1.000	1.004	1.000	1.000	1.000	1.000
2003-2004	3.646	0.702	0.962	0.980	1.000	1.000	0.995	1.000	1.000	1.000	1.005	1.010	1.000	
2004-2005	3.865	0.720	0.913	1.000	0.995	1.000	0.995	1.000	1.054	1.000	1.036	1.000		
2005-2006	4.103	0.716	1.000	1.009	0.987	1.000	1.000	1.004	1.000	1.000	1.000			
2006-2007	3.419	0.664	0.994	0.982	1.000	1.000	1.043	1.006	0.994	1.000				
2007-2008	2.630	0.777	0.973	1.000	0.995	1.016	1.005	1.000	0.995					
2008-2009	3.000	0.783	0.952	1.000	1.000	1.000	1.000	1.000						
2009-2010	2.964	0.767	1.010	0.979	1.005	1.011	1.000							
2010-2011	3.051	0.714	0.971	0.994	1.018	1.000								
2011-2012	3.344	0.814	0.970	0.994	1.000									
2012-2013	4.358	0.723	0.958	1.000										
2013-2014	4.382	0.805	0.928											
2014-2015	6.425	0.755												
2015-2016	7.683													
Average	3.753	0.746	0.972	0.996	1.000	1.005	1.003	1.002	1.003	1.001	1.004	1.001	1.001	1.000
Claim-weighted Averages														
3-yr	5.978	0.761	0.951	0.996	1.008	1.004	1.002	1.002	0.997	1.000	1.013	1.003	1.000	1.000
4-yr	5.524	0.773	0.956	0.991	1.006	1.007	1.011	1.003	1.010	1.000	1.009	1.002	1.000	1.000
Industry Factors	5.326	1.198	1.023	1.005	1.005	1.005	1.004	1.003	1.001	1.002	1.000	1.000	1.000	1.000
Prior	3.741	0.753	0.976	0.994	0.997	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	4.187	0.758	0.971	0.993	0.999	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulated	3.061	0.731	0.965	0.994	1.001	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Municipal Pooling Authority - Liability - 100K & SIR Analyses
Closed Claim Count Development

Accident Year	Claims Closed as of:													
	3 Months	15 Months	27 Months	39 Months	51 Months	63 Months	75 Months	87 Months	99 Months	111 Months	123 Months	135 Months	147 Months	159 Months
1995-1996	6	104	154	171	178	179	180	180	182	182	184	184		
1996-1997	24	134	169	189	197	202	202	203	203	204	204			
1997-1998	21	132	154	176	181	186	187	193	196	196	196	197	197	197
1998-1999	32	149	196	230	237	239	246	245	245	245	245	245	245	245
1999-2000	29	155	202	229	234	239	245	244	244	244	244	244	245	250
2000-2001	36	150	191	214	223	225	225	225	225	225	225	225	225	225
2001-2002	30	172	203	235	243	243	245	245	244	244	245	245	245	245
2002-2003	31	152	202	228	238	241	243	243	243	244	244	243	243	244
2003-2004	19	158	176	190	193	194	196	197	197	197	197	198	200	200
2004-2005	18	154	177	173	180	185	185	185	185	195	195	202	202	
2005-2006	19	152	186	206	219	222	225	226	228	228	228	228		
2006-2007	22	98	119	133	148	159	161	171	171	171	171			
2007-2008	17	124	149	168	172	174	178	182	183	183				
2008-2009	19	130	150	165	172	177	177	177	179					
2009-2010	17	122	144	160	168	181	184	188						
2010-2011	16	113	131	141	155	160	163							
2011-2012	16	95	126	143	151	155								
2012-2013	11	93	117	134	146									
2013-2014	9	118	149	165										
2014-2015	6	93	129											
2015-2016	9	99												
2016-2017	3													

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 through 2016-17 diagonal is valued as of 9/30.

Closed Claim Count Development Factors:

	3-15 Months	15-27 Months	27-39 Months	39-51 Months	51-63 Months	63-75 Months	75-87 Months	87-99 Months	99-111 Months	111-123 Months	123-135 Months	135-147 Months	147-159 Months	159-171 Months
1995-1996	17.333	1.481	1.110	1.041	1.006	1.006	1.000	1.011	1.000	1.011	1.000			
1996-1997	5.583	1.261	1.118	1.042	1.025	1.000	1.005	1.000	1.005	1.000				
1997-1998	6.286	1.167	1.143	1.028	1.028	1.005	1.032	1.016	1.000	1.000	1.005	1.000	1.000	1.005
1998-1999	4.656	1.315	1.173	1.030	1.008	1.029	0.996	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999-2000	5.345	1.303	1.134	1.022	1.021	1.025	0.996	1.000	1.000	1.000	1.000	1.004	1.020	1.000
2000-2001	4.167	1.273	1.120	1.042	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2001-2002	5.733	1.180	1.158	1.034	1.000	1.008	1.000	0.996	1.000	1.004	1.000	1.000	1.000	1.000
2002-2003	4.903	1.329	1.129	1.044	1.013	1.008	1.000	1.000	1.004	1.000	0.996	1.000	1.004	1.000
2003-2004	8.316	1.114	1.080	1.016	1.005	1.010	1.005	1.000	1.000	1.000	1.005	1.010	1.000	
2004-2005	8.556	1.149	0.977	1.040	1.028	1.000	1.000	1.000	1.054	1.000	1.036	1.000		
2005-2006	8.000	1.224	1.108	1.063	1.014	1.014	1.004	1.009	1.000	1.000	1.000			
2006-2007	4.455	1.214	1.118	1.113	1.074	1.013	1.062	1.000	1.000	1.000				
2007-2008	7.294	1.202	1.128	1.024	1.012	1.023	1.022	1.005	1.000					
2008-2009	6.842	1.154	1.100	1.042	1.029	1.000	1.000	1.011						
2009-2010	7.176	1.180	1.111	1.050	1.077	1.017	1.022							
2010-2011	7.063	1.159	1.076	1.099	1.032	1.019								
2011-2012	5.938	1.326	1.135	1.056	1.026									
2012-2013	8.455	1.258	1.145	1.090										
2013-2014	13.111	1.263	1.107											
2014-2015	15.500	1.387												
2015-2016	11.000													
Average	7.891	1.247	1.114	1.049	1.024	1.011	1.010	1.003	1.005	1.001	1.004	1.002	1.003	1.001
Claim-weighted Averages														
3-yr	12.917	1.299	1.128	1.081	1.046	1.012	1.015	1.006	1.000	1.000	1.013	1.003	1.001	1.000
4-yr	11.514	1.306	1.115	1.073	1.042	1.014	1.026	1.007	1.013	1.000	1.008	1.002	1.001	1.000
Industry Factors	5.740	1.748	1.155	1.058	1.037	1.022	1.014	1.009	1.008	1.006	1.005	1.004	1.002	1.002
Prior	8.000	1.231	1.108	1.056	1.032	1.011	1.005	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Selected	8.879	1.250	1.110	1.060	1.034	1.012	1.005	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Cumulated	13.931	1.569	1.255	1.131	1.067	1.032	1.020	1.015	1.014	1.013	1.012	1.011	1.010	1.009

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Loss Trend Factors

Accident Year	Benefit Level Factor (A)	Factor to 2016-2017 Loss Rate Level (B)	Factor to 2017-2018 Loss Rate Level (C)	Factor to 2018-2019 Loss Rate Level (D)	Factor to 2019-2020 Loss Rate Level (E)	Factor to 2016-2017 Frequency Level (F)	Factor to 2017-2018 Frequency Level (G)	Factor to 2018-2019 Frequency Level (H)	Factor to 2019-2020 Frequency Level (I)	Factor to 2016-2017 Severity Level (J)
Prior	1.000	1.516	1.546	1.577	1.608	1.000	1.000	1.000	1.000	1.516
1996-1997	1.000	1.486	1.516	1.546	1.577	1.000	1.000	1.000	1.000	1.486
1997-1998	1.000	1.457	1.486	1.516	1.546	1.000	1.000	1.000	1.000	1.457
1998-1999	1.000	1.428	1.457	1.486	1.516	1.000	1.000	1.000	1.000	1.428
1999-2000	1.000	1.400	1.428	1.457	1.486	1.000	1.000	1.000	1.000	1.400
2000-2001	1.000	1.373	1.400	1.428	1.457	1.000	1.000	1.000	1.000	1.373
2001-2002	1.000	1.346	1.373	1.400	1.428	1.000	1.000	1.000	1.000	1.346
2002-2003	1.000	1.319	1.346	1.373	1.400	1.000	1.000	1.000	1.000	1.319
2003-2004	1.000	1.294	1.319	1.346	1.373	1.000	1.000	1.000	1.000	1.294
2004-2005	1.000	1.268	1.294	1.319	1.346	1.000	1.000	1.000	1.000	1.268
2005-2006	1.000	1.243	1.268	1.294	1.319	1.000	1.000	1.000	1.000	1.243
2006-2007	1.000	1.219	1.243	1.268	1.294	1.000	1.000	1.000	1.000	1.219
2007-2008	1.000	1.195	1.219	1.243	1.268	1.000	1.000	1.000	1.000	1.195
2008-2009	1.000	1.172	1.195	1.219	1.243	1.000	1.000	1.000	1.000	1.172
2009-2010	1.000	1.149	1.172	1.195	1.219	1.000	1.000	1.000	1.000	1.149
2010-2011	1.000	1.126	1.149	1.172	1.195	1.000	1.000	1.000	1.000	1.126
2011-2012	1.000	1.104	1.126	1.149	1.172	1.000	1.000	1.000	1.000	1.104
2012-2013	1.000	1.082	1.104	1.126	1.149	1.000	1.000	1.000	1.000	1.082
2013-2014	1.000	1.061	1.082	1.104	1.126	1.000	1.000	1.000	1.000	1.061
2014-2015	1.000	1.040	1.061	1.082	1.104	1.000	1.000	1.000	1.000	1.040
2015-2016	1.000	1.020	1.040	1.061	1.082	1.000	1.000	1.000	1.000	1.020
2016-2017	1.000	1.000	1.020	1.040	1.061	1.000	1.000	1.000	1.000	1.000
2017-2018	1.000	--	1.000	1.020	1.040	--	1.000	1.000	1.000	0.980
2018-2019	1.000	--	--	1.000	1.020	--	--	1.000	1.000	--
2019-2020	1.000	--	--	--	1.000	--	--	--	1.000	--

Notes:

- (A) No benefit level adjustment applied.
- (B) - (E) (A) adjusted for a 2.0% annual loss rate trend.
- (F) - (I) (A) adjusted for a 0.0% annual frequency trend.
- (J) (A) adjusted for a 2.0% 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 inflation.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>9/30/2016</u>	<u>Calendar Period</u>	
		<u>10/1/2016</u> <u>to</u> <u>6/30/2017</u>	<u>7/1/2017</u> <u>to</u> <u>6/30/2018</u>
Prior			
Ultimate Loss	\$11,668,574	\$11,668,574	\$11,668,574
Paid in Calendar Period	-	35,470	17,735
Paid to Date	11,597,633	11,633,103	11,650,838
Outstanding Liability	70,941	35,471	17,736
2000-2001			
Ultimate Loss	\$2,480,141	\$2,480,141	\$2,480,141
Paid in Calendar Period	-		
Paid to Date	2,480,141	2,480,141	2,480,141
Outstanding Liability	0	0	0
2001-2002			
Ultimate Loss	\$1,204,025	\$1,204,025	\$1,204,025
Paid in Calendar Period	-		
Paid to Date	1,204,025	1,204,025	1,204,025
Outstanding Liability	0	0	0
2002-2003			
Ultimate Loss	\$2,318,597	\$2,318,597	\$2,318,597
Paid in Calendar Period	-	65,582	99,083
Paid to Date	1,987,376	2,052,958	2,152,041
Outstanding Liability	331,221	265,639	166,556
2003-2004			
Ultimate Loss	\$1,363,245	\$1,363,245	\$1,363,245
Paid in Calendar Period	-	28	29
Paid to Date	1,363,073	1,363,101	1,363,130
Outstanding Liability	172	144	115
2004-2005			
Ultimate Loss	\$2,398,942	\$2,398,942	\$2,398,942
Paid in Calendar Period	-	77	77
Paid to Date	2,398,527	2,398,604	2,398,681
Outstanding Liability	415	338	261
2005-2006			
Ultimate Loss	\$3,891,000	\$3,891,000	\$3,891,000
Paid in Calendar Period	-	22,048	29,681
Paid to Date	3,741,015	3,763,063	3,792,744
Outstanding Liability	149,985	127,937	98,256

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>9/30/2016</u>	<u>Calendar Period</u>	
		<u>10/1/2016</u> <u>to</u> <u>6/30/2017</u>	<u>7/1/2017</u> <u>to</u> <u>6/30/2018</u>
2006-2007			
Ultimate Loss	\$4,657,102	\$4,657,102	\$4,657,102
Paid in Calendar Period	-	110	110
Paid to Date	4,656,404	4,656,514	4,656,624
Outstanding Liability	698	588	478
2007-2008			
Ultimate Loss	\$4,530,000	\$4,530,000	\$4,530,000
Paid in Calendar Period	-	82,959	73,772
Paid to Date	4,145,929	4,228,888	4,302,660
Outstanding Liability	384,071	301,112	227,340
2008-2009			
Ultimate Loss	\$1,895,000	\$1,895,000	\$1,895,000
Paid in Calendar Period	-	1,330	1,257
Paid to Date	1,889,364	1,890,694	1,891,951
Outstanding Liability	5,636	4,306	3,049
2009-2010			
Ultimate Loss	\$6,005,000	\$6,005,000	\$6,005,000
Paid in Calendar Period	-	187,543	204,930
Paid to Date	5,156,391	5,343,934	5,548,864
Outstanding Liability	848,609	661,066	456,136
2010-2011			
Ultimate Loss	\$4,136,000	\$4,136,000	\$4,136,000
Paid in Calendar Period	-	151,087	140,023
Paid to Date	3,524,310	3,675,397	3,815,420
Outstanding Liability	611,690	460,603	320,580
2011-2012			
Ultimate Loss	\$5,132,000	\$5,132,000	\$5,132,000
Paid in Calendar Period	-	179,341	213,127
Paid to Date	4,273,911	4,453,252	4,666,379
Outstanding Liability	858,089	678,748	465,621
2012-2013			
Ultimate Loss	\$3,046,000	\$3,046,000	\$3,046,000
Paid in Calendar Period	-	295,920	239,863
Paid to Date	1,973,825	2,269,745	2,509,608
Outstanding Liability	1,072,175	776,255	536,392

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>9/30/2016</u>	<u>Calendar Period</u>	
		<u>10/1/2016</u> <u>to</u> <u>6/30/2017</u>	<u>7/1/2017</u> <u>to</u> <u>6/30/2018</u>
2013-2014			
Ultimate Loss	\$3,444,000	\$3,444,000	\$3,444,000
Paid in Calendar Period	-	438,219	385,891
Paid to Date	1,992,943	2,431,162	2,817,053
Outstanding Liability	1,451,057	1,012,838	626,947
2014-2015			
Ultimate Loss	\$3,676,000	\$3,676,000	\$3,676,000
Paid in Calendar Period	-	802,447	733,611
Paid to Date	1,062,167	1,864,614	2,598,225
Outstanding Liability	2,613,833	1,811,386	1,077,775
2015-2016			
Ultimate Loss	\$3,750,000	\$3,750,000	\$3,750,000
Paid in Calendar Period	-	675,114	1,063,631
Paid to Date	120,354	795,468	1,859,099
Outstanding Liability	3,629,646	2,954,532	1,890,901
2016-2017			
Ultimate Loss	\$1,127,000	\$4,507,000	\$4,507,000
Paid in Calendar Period	-	383,095	870,144
Paid to Date	-	383,095	1,253,239
Outstanding Liability	1,127,000	4,123,905	3,253,761
2017-2018			
Ultimate Loss	-	-	\$4,772,000
Paid in Calendar Period	-	-	439,024
Paid to Date	-	-	439,024
Outstanding Liability	-	-	4,332,976
Totals			
Ultimate Loss	\$66,722,626	\$70,102,626	\$74,874,626
Paid in Calendar Period	-	3,320,370	4,511,988
Paid to Date	53,567,389	56,887,759	61,399,747
Outstanding Liability	13,155,237	13,214,867	13,474,879
Total Outstanding ULAE	939,000	701,634	745,620
Outstanding Liability plus ULAE	14,094,237	13,916,501	14,220,499

Notes appear on the next page.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Payment and Reserve Forecast

Notes to previous page:

- Accident Year is associated with date of loss. Calendar Period is associated with date of transaction. For example, for the losses which occurred during 2014-2015, \$802,447 is expected to be paid between 10/1/16 and 6/30/17, \$1,864,614 will have been paid by 6/30/17, and the reserve for remaining payments on these claims should be \$1,811,386.
- Ultimate Losses for each accident year are from Pool - Exhibit 3, Page 2.
- 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, $\$733,611 = \$1,811,386 \times 40.5\%$.
- Paid to Date is Paid in Calendar Period plus Paid to Date from previous calendar period. For example, $\$2,598,225 = \$733,611 + \$1,864,614$.
- Outstanding Liability is Ultimate Loss minus Paid to Date. For example, $\$1,811,386 = \$3,676,000 - \$1,864,614$.

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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Short- and Long-Term Liabilities

<u>Liabilities as of 9/30/16:</u>		<u>Expected</u>	<u>Discounted</u>
<u>Current (Short Term)</u>	Loss and ALAE:	\$2,937,275	\$2,908,336
	ULAE:	582,471	576,732
	Short-Term Loss and LAE:	<u>\$3,519,746</u>	<u>\$3,485,068</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$10,217,962	\$9,555,672
	ULAE:	356,529	312,929
	Long-Term Loss and LAE:	<u>\$10,574,491</u>	<u>\$9,868,601</u>
<u>Total Liability</u>	Loss and ALAE:	\$13,155,237	\$12,464,008
	ULAE:	939,000	889,661
	Total Loss and LAE:	<u>\$14,094,237</u>	<u>\$13,353,669</u>
<u>Liabilities as of 6/30/17:</u>			
<u>Current (Short Term)</u>	Loss and ALAE:	\$4,072,964	\$4,032,835
	ULAE:	237,437	235,098
	Short-Term Loss and LAE:	<u>\$4,310,401</u>	<u>\$4,267,933</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$9,141,903	\$8,498,486
	ULAE:	464,197	430,243
	Long-Term Loss and LAE:	<u>\$9,606,100</u>	<u>\$8,928,729</u>
<u>Total Liability</u>	Loss and ALAE:	\$13,214,867	\$12,531,321
	ULAE:	701,634	665,341
	Total Loss and LAE:	<u>\$13,916,501</u>	<u>\$13,196,662</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 9/30/16:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$3,231,161	\$3,370,761	\$3,533,628	\$3,737,212	\$4,013,504
	ULAE:	640,749	668,432	700,729	741,101	795,890
	Short-Term Loss and LAE:	<u>\$3,871,910</u>	<u>\$4,039,193</u>	<u>\$4,234,357</u>	<u>\$4,478,313</u>	<u>\$4,809,394</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$10,616,352	\$11,075,024	\$11,610,142	\$12,279,038	\$13,186,827
	ULAE:	347,664	362,685	380,209	402,114	431,842
	Long-Term Loss and LAE:	<u>\$10,964,016</u>	<u>\$11,437,709</u>	<u>\$11,990,351</u>	<u>\$12,681,152</u>	<u>\$13,618,669</u>
<u>Total Liability</u>	Loss and ALAE:	\$13,847,513	\$14,445,785	\$15,143,770	\$16,016,250	\$17,200,331
	ULAE:	988,413	1,031,117	1,080,938	1,143,215	1,227,732
	Total Loss and LAE:	<u>\$14,835,926</u>	<u>\$15,476,902</u>	<u>\$16,224,708</u>	<u>\$17,159,465</u>	<u>\$18,428,063</u>
<u>Liabilities as of 6/30/17:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$4,480,480	\$4,674,056	\$4,899,895	\$5,182,193	\$5,565,312
	ULAE:	261,194	272,479	285,644	302,101	324,435
	Short-Term Loss and LAE:	<u>\$4,741,674</u>	<u>\$4,946,535</u>	<u>\$5,185,539</u>	<u>\$5,484,294</u>	<u>\$5,889,747</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$9,441,818	\$9,849,745	\$10,325,660	\$10,920,554	\$11,727,911
	ULAE:	477,999	498,651	522,745	552,863	593,736
	Long-Term Loss and LAE:	<u>\$9,919,817</u>	<u>\$10,348,396</u>	<u>\$10,848,405</u>	<u>\$11,473,417</u>	<u>\$12,321,647</u>
<u>Total Liability</u>	Loss and ALAE:	\$13,922,298	\$14,523,801	\$15,225,555	\$16,102,747	\$17,293,223
	ULAE:	739,193	771,130	808,389	854,964	918,171
	Total Loss and LAE:	<u>\$14,661,491</u>	<u>\$15,294,931</u>	<u>\$16,033,944</u>	<u>\$16,957,711</u>	<u>\$18,211,394</u>

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Discount Factors to be Applied to Overall Reserves

Accident Year	Full Value of Reserve at 9/30/16 (A)	Discount Factor (B)	Discounted Reserve at 9/30/16 (C)	Full Value of Reserve at 6/30/17 (D)	Discount Factor (E)	Discounted Reserve at 6/30/17 (F)
Prior	\$70,940	0.990	\$70,242	\$35,470	0.990	\$35,121
1996-1997	(0)	0.983	0	(0)	0.990	0
1997-1998	0	0.966	0	0	0.980	0
1998-1999	0	0.959	0	0	0.961	0
1999-2000	(0)	0.954	0	(0)	0.958	0
2000-2001	0	0.956	0	0	0.952	0
2001-2002	0	0.955	0	0	0.958	0
2002-2003	331,221	0.949	314,490	265,639	0.954	253,458
2003-2004	172	0.942	162	144	0.948	137
2004-2005	415	0.937	389	338	0.941	318
2005-2006	149,985	0.933	139,863	127,937	0.936	119,691
2006-2007	698	0.931	650	588	0.932	548
2007-2008	384,071	0.934	358,868	301,112	0.931	280,464
2008-2009	5,636	0.938	5,285	4,306	0.935	4,027
2009-2010	848,609	0.940	797,839	661,066	0.939	620,471
2010-2011	611,690	0.942	576,209	460,603	0.941	433,289
2011-2012	858,089	0.943	809,452	678,748	0.942	639,670
2012-2013	1,072,175	0.947	1,015,885	776,255	0.944	732,488
2013-2014	1,451,057	0.952	1,381,955	1,012,838	0.949	960,973
2014-2015	2,613,833	0.954	2,493,628	1,811,386	0.954	1,727,288
2015-2016	3,629,646	0.949	3,443,076	2,954,532	0.954	2,819,091
2016-2017	1,127,000	0.937	1,056,015	4,123,905	0.947	3,904,287
Totals	\$13,155,237		\$12,464,008	\$13,214,867		\$12,531,321

(G) Discount Factor at 9/30/16 for Overall Reserve: 0.947
(H) Discount Factor at 6/30/17 for Overall Reserve: 0.948

Notes:

- (A) From Pool - Appendix F, Outstanding Liability at 9/30/16.
- (B) Based on Pool - Appendix H, Page 2, Column (E).
- (C) (A) x (B).
- (D) From Pool - Appendix F, Outstanding Liability at 6/30/17.
- (E) Based on Pool - 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 0.947, the discounted liability for outstanding claims is 94.7% of the full value.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Calculation of Discount Factors

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
22	0.1%	0.001	0.001	0.990
21	0.1%	0.002	0.002	0.980
20	0.0%	0.002	0.002	0.961
19	0.1%	0.003	0.003	0.958
18	0.1%	0.004	0.004	0.952
17	0.3%	0.007	0.007	0.958
16	0.3%	0.009	0.010	0.954
15	0.3%	0.012	0.013	0.948
14	0.3%	0.015	0.016	0.941
13	0.4%	0.018	0.020	0.936
12	0.5%	0.023	0.024	0.932
11	0.8%	0.030	0.032	0.931
10	1.3%	0.042	0.045	0.935
9	1.9%	0.060	0.064	0.939
8	2.6%	0.085	0.090	0.941
7	3.8%	0.121	0.128	0.942
6	5.4%	0.172	0.182	0.944
5	10.4%	0.272	0.287	0.949
4	18.3%	0.448	0.470	0.954
3	25.2%	0.689	0.722	0.954
2	18.8%	0.861	0.910	0.947
1	9.0%	0.934	1.000	0.934

(F) Discount Factor for Future Funding: 0.943

* Assumed Investment Rate: 2.0%

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 Pool - Appendix B, Page 2.
- (C) 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, $86.1\% = [68.9\% / 1.020] + [18.8\% / (1.010)]$.
- (D) Summation of future (B) values. This is the percent of ultimate loss unpaid at the beginning of the year.
- (E) (C) / (D).
- (F) (E) 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 0.94, on a discounted basis, \$0.94 must be budgeted for every \$1 that will actually be paid on claims that will be incurred in the next fiscal year.

Municipal Pooling Authority - Liability

Calculation of Discount Factors at the \$5,000 Deductible Level

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
21	0.0%	0.000	0.000	1.000
20	0.0%	0.000	0.000	1.000
19	0.0%	0.000	0.000	1.000
18	0.0%	0.000	0.000	1.000
17	0.1%	0.001	0.001	0.990
16	0.1%	0.002	0.002	0.980
15	0.1%	0.003	0.003	0.971
14	0.1%	0.004	0.004	0.961
13	0.1%	0.005	0.005	0.952
12	0.1%	0.006	0.006	0.943
11	0.2%	0.007	0.008	0.941
10	0.3%	0.010	0.011	0.941
9	0.3%	0.013	0.014	0.937
8	0.6%	0.018	0.020	0.939
7	1.0%	0.028	0.030	0.945
6	2.0%	0.048	0.050	0.952
5	6.4%	0.110	0.114	0.965
4	17.6%	0.282	0.290	0.973
3	30.7%	0.580	0.596	0.972
2	25.4%	0.821	0.851	0.964
1	14.8%	0.951	0.999	0.952
(F) Discount Factor for Future Funding:				0.962
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability

Calculation of Discount Factors at the \$10,000 Deductible Level

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
21	0.0%	0.000	0.000	1.000
20	0.0%	0.000	0.000	1.000
19	0.0%	0.000	0.000	1.000
18	0.0%	0.000	0.000	1.000
17	0.1%	0.001	0.001	0.990
16	0.1%	0.002	0.002	0.980
15	0.1%	0.003	0.003	0.971
14	0.1%	0.004	0.005	0.961
13	0.1%	0.005	0.006	0.952
12	0.1%	0.006	0.007	0.943
11	0.2%	0.009	0.009	0.941
10	0.3%	0.012	0.012	0.941
9	0.3%	0.015	0.016	0.937
8	0.7%	0.021	0.022	0.939
7	1.2%	0.033	0.034	0.945
6	2.3%	0.055	0.058	0.952
5	7.2%	0.125	0.130	0.965
4	19.5%	0.316	0.325	0.973
3	32.2%	0.629	0.648	0.972
2	24.0%	0.855	0.888	0.963
1	11.1%	0.948	0.999	0.949
(F) Discount Factor for Future Funding:				0.959
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability

Calculation of Discount Factors at the \$25,000 Deductible Level

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
21	0.0%	0.000	0.000	1.000
20	0.0%	0.000	0.000	1.000
19	0.0%	0.000	0.000	1.000
18	0.0%	0.000	0.000	1.000
17	0.1%	0.001	0.001	0.990
16	0.1%	0.003	0.003	0.980
15	0.1%	0.004	0.004	0.971
14	0.1%	0.005	0.006	0.961
13	0.1%	0.007	0.007	0.952
12	0.1%	0.008	0.008	0.943
11	0.3%	0.010	0.011	0.941
10	0.4%	0.014	0.015	0.941
9	0.4%	0.018	0.019	0.936
8	0.8%	0.026	0.027	0.939
7	1.4%	0.039	0.042	0.945
6	2.8%	0.066	0.070	0.952
5	8.6%	0.150	0.156	0.965
4	22.5%	0.370	0.380	0.972
3	33.8%	0.698	0.719	0.970
2	21.1%	0.893	0.930	0.960
1	6.9%	0.943	0.999	0.945
(F) Discount Factor for Future Funding:				0.954
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability

Calculation of Discount Factors at the \$50,000 Deductible Level

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
21	0.0%	0.000	0.000	1.000
20	0.0%	0.000	0.000	1.000
19	0.0%	0.000	0.000	1.000
18	0.0%	0.000	0.000	1.000
17	0.3%	0.003	0.003	0.990
16	0.3%	0.006	0.006	0.980
15	0.3%	0.009	0.010	0.971
14	0.3%	0.012	0.013	0.961
13	0.3%	0.015	0.016	0.952
12	0.3%	0.018	0.019	0.943
11	0.6%	0.024	0.025	0.940
10	0.9%	0.033	0.035	0.940
9	0.9%	0.041	0.044	0.936
8	1.8%	0.058	0.062	0.939
7	3.2%	0.089	0.094	0.944
6	6.0%	0.146	0.154	0.951
5	17.1%	0.312	0.325	0.963
4	34.5%	0.648	0.669	0.968
3	27.5%	0.908	0.945	0.961
2	5.0%	0.939	0.995	0.944
1	0.2%	0.923	0.997	0.926
(F) Discount Factor for Future Funding:				0.935
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability

Calculation of Discount Factors at the \$100,000 Deductible Level

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
21	0.0%	0.000	0.000	1.000
20	0.0%	0.000	0.000	1.000
19	0.0%	0.000	0.000	1.000
18	0.0%	0.000	0.000	1.000
17	0.7%	0.007	0.007	0.990
16	0.7%	0.014	0.014	0.980
15	0.7%	0.021	0.021	0.971
14	0.7%	0.027	0.028	0.961
13	0.7%	0.034	0.035	0.952
12	0.7%	0.040	0.042	0.942
11	1.4%	0.052	0.056	0.940
10	2.0%	0.071	0.076	0.940
9	1.9%	0.089	0.095	0.935
8	3.8%	0.124	0.133	0.938
7	6.4%	0.186	0.197	0.942
6	11.3%	0.294	0.310	0.948
5	27.1%	0.556	0.581	0.958
4	32.9%	0.871	0.910	0.958
3	8.1%	0.935	0.991	0.943
2	0.1%	0.918	0.993	0.925
1	0.0%	0.900	0.993	0.906
(F) Discount Factor for Future Funding:				0.915
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability

Calculation of Discount Factors at the \$250,000 Deductible Level

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
21	0.0%	0.000	0.000	1.000
20	0.0%	0.000	0.000	1.000
19	0.0%	0.000	0.000	1.000
18	0.0%	0.000	0.000	1.000
17	0.6%	0.006	0.006	0.990
16	0.6%	0.013	0.013	0.980
15	0.6%	0.019	0.019	0.971
14	0.6%	0.024	0.025	0.961
13	0.6%	0.030	0.032	0.952
12	0.6%	0.036	0.038	0.942
11	1.2%	0.047	0.050	0.940
10	1.8%	0.064	0.068	0.940
9	1.8%	0.080	0.086	0.936
8	3.4%	0.112	0.120	0.938
7	5.9%	0.168	0.179	0.943
6	10.4%	0.269	0.283	0.949
5	25.9%	0.519	0.542	0.959
4	34.5%	0.850	0.886	0.959
3	10.4%	0.937	0.991	0.946
2	0.3%	0.921	0.994	0.927
1	0.0%	0.903	0.994	0.909
(F) Discount Factor for Future Funding:				0.918
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability

Calculation of Discount Factors at the \$500,000 Deductible Level

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
21	0.0%	0.000	0.000	1.000
20	0.0%	0.000	0.000	1.000
19	0.0%	0.000	0.000	1.000
18	0.0%	0.000	0.000	1.000
17	0.6%	0.006	0.006	0.990
16	0.6%	0.013	0.013	0.980
15	0.6%	0.019	0.019	0.971
14	0.6%	0.024	0.025	0.961
13	0.6%	0.030	0.032	0.952
12	0.6%	0.036	0.038	0.942
11	1.2%	0.047	0.050	0.940
10	1.8%	0.064	0.068	0.940
9	1.8%	0.080	0.086	0.936
8	3.4%	0.112	0.120	0.938
7	5.9%	0.168	0.179	0.943
6	10.4%	0.269	0.283	0.949
5	25.9%	0.519	0.542	0.959
4	34.5%	0.850	0.886	0.959
3	10.4%	0.937	0.991	0.946
2	0.3%	0.921	0.994	0.927
1	0.0%	0.903	0.994	0.909
(F) Discount Factor for Future Funding:				0.918
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Confidence Level Table

Probability	Projected Losses	Outstanding Losses
95%	1.891	1.540
90	1.625	1.380
85	1.465	1.285
80	1.345	1.215
75	1.249	1.159
70	1.168	1.111
65	1.097	1.069
60	1.033	1.030
55	0.974	0.995
50	0.918	0.962
45	0.865	0.930
40	0.813	0.899
35	0.763	0.868
30	0.712	0.836
25	0.660	0.803

To read table: For the above retention, there is a 90% chance that final loss settlements will be less than 1.625 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.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Program History

Policy Year Start Date	Policy Year End Date	Policy Year	Self-Insured Retention	
			Per Occurrence	Aggregate
7/1/1986	6/30/1996	Prior	1,000,000	(none)
7/1/1996	6/30/1997	1996-1997	1,000,000	(none)
7/1/1997	6/30/1998	1997-1998	1,000,000	(none)
7/1/1998	6/30/1999	1998-1999	1,000,000	(none)
7/1/1999	6/30/2000	1999-2000	1,000,000	(none)
7/1/2000	6/30/2001	2000-2001	1,000,000	(none)
7/1/2001	6/30/2002	2001-2002	1,000,000	(none)
7/1/2002	6/30/2003	2002-2003	1,000,000	(none)
7/1/2003	6/30/2004	2003-2004	1,000,000	(none)
7/1/2004	6/30/2005	2004-2005	1,000,000	(none)
7/1/2005	6/30/2006	2005-2006	1,000,000	(none)
7/1/2006	6/30/2007	2006-2007	1,000,000	(none)
7/1/2007	6/30/2008	2007-2008	1,000,000	(none)
7/1/2008	6/30/2009	2008-2009	1,000,000	(none)
7/1/2009	6/30/2010	2009-2010	1,000,000	(none)
7/1/2010	6/30/2011	2010-2011	1,000,000	(none)
7/1/2011	6/30/2012	2011-2012	1,000,000	(none)
7/1/2012	6/30/2013	2012-2013	1,000,000	(none)
7/1/2013	6/30/2014	2013-2014	1,000,000	(none)
7/1/2014	6/30/2015	2014-2015	1,000,000	(none)
7/1/2015	6/30/2016	2015-2016	1,000,000	(none)
7/1/2016	6/30/2017	2016-2017	1,000,000	(none)
7/1/2017	6/30/2018	2017-2018	1,000,000	(none)

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Incurred Losses as of 9/30/16

Accident Year (A)	Unlimited Incurred (B)	Additions to Losses (C)	Additions to 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	\$4,566,221	\$0	\$0	\$4,566,221	\$0	\$1,531,451	\$3,034,770	\$1,531,451	\$4,566,221	\$4,566,221
1996-1997	1,876,897	0	0	1,876,897	0	446,883	1,430,014	446,883	1,876,897	1,876,897
1997-1998	2,851,398	1,000,134	0	3,851,532	0	1,759,811	2,091,721	1,759,811	3,851,532	3,851,532
1998-1999	2,510,333	1,558,863	0	4,069,196	0	1,480,310	2,588,886	1,480,310	4,069,196	4,069,196
1999-2000	1,935,613	559,632	0	2,495,245	0	437,958	2,057,287	437,958	2,495,245	2,495,245
2000-2001	3,056,849	315,503	0	3,372,352	0	1,552,269	1,820,083	1,552,269	3,372,352	3,372,352
2001-2002	2,002,447	113,589	0	2,116,036	0	355,342	1,760,695	355,342	2,116,036	2,116,036
2002-2003	3,508,084	98,476	0	3,606,559	0	1,465,461	2,141,098	1,465,461	3,606,559	3,606,559
2003-2004	1,934,638	0	275,607	2,210,245	0	668,087	1,542,158	668,087	2,210,245	2,210,245
2004-2005	3,043,369	0	107,125	3,150,494	36,553	1,836,553	1,313,942	1,800,000	3,113,942	3,113,942
2005-2006	4,244,675	0	718,088	4,962,763	0	2,190,180	2,772,583	2,190,180	4,962,763	4,962,763
2006-2007	5,875,102	0	0	5,875,102	0	3,594,889	2,280,213	3,594,889	5,875,102	5,875,102
2007-2008	5,656,225	0	0	5,656,225	0	3,250,985	2,405,240	3,250,985	5,656,225	5,656,225
2008-2009	2,662,400	0	0	2,662,400	0	1,051,285	1,611,115	1,051,285	2,662,400	2,662,400
2009-2010	7,355,544	0	0	7,355,544	0	4,410,202	2,945,341	4,410,202	7,355,544	7,355,544
2010-2011	4,949,756	0	0	4,949,756	0	2,785,974	2,163,783	2,785,974	4,949,756	4,949,756
2011-2012	6,320,780	0	0	6,320,780	23,241	3,616,611	2,704,169	3,593,370	6,297,539	6,297,539
2012-2013	4,073,090	0	0	4,073,090	0	2,154,562	1,918,528	2,154,562	4,073,090	4,073,090
2013-2014	3,810,765	0	0	3,810,765	0	1,454,452	2,356,313	1,454,452	3,810,765	3,810,765
2014-2015	4,164,672	0	0	4,164,672	0	1,918,033	2,246,639	1,918,033	4,164,672	4,164,672
2015-2016	2,785,778	0	0	2,785,778	0	957,300	1,828,479	957,300	2,785,778	2,785,778
2016-2017	72,515	0	0	72,515	0	0	72,515	0	72,515	72,515
Total	\$79,257,149	\$3,646,196	\$1,100,820	\$84,004,165	\$59,794	\$38,918,596	\$45,085,570	\$38,858,802	\$83,944,372	\$83,944,372

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the Authority. Amounts are gross of deductibles, net of recoveries. All claims prior to 1994-95 are closed.
- (C) Amounts are for the City of Concord and are valued as of 11/30/07. We assume all claims are closed.
- (D) Claims missing from this year's loss run
- (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 Pool - Appendix J.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Paid Losses as of 9/30/16

Accident Year (A)	Unlimited Paid (B)	Additions to Losses (C)	Additions to 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	\$4,495,281	\$0	\$0	\$4,495,281	\$0	\$1,468,951	\$3,026,329	\$1,468,951	\$4,495,281	\$4,495,281
1996-1997	1,876,897	0	0	1,876,897	0	446,883	1,430,014	446,883	1,876,897	1,876,897
1997-1998	2,851,398	1,000,134	0	3,851,532	0	1,759,811	2,091,721	1,759,811	3,851,532	3,851,532
1998-1999	2,510,333	1,558,863	0	4,069,196	0	1,480,310	2,588,886	1,480,310	4,069,196	4,069,196
1999-2000	1,935,613	559,632	0	2,495,245	0	437,958	2,057,287	437,958	2,495,245	2,495,245
2000-2001	3,056,849	315,503	0	3,372,352	0	1,552,269	1,820,083	1,552,269	3,372,352	3,372,352
2001-2002	2,002,447	113,589	0	2,116,036	0	355,342	1,760,695	355,342	2,116,036	2,116,036
2002-2003	3,177,304	98,476	0	3,275,779	0	1,135,175	2,140,604	1,135,175	3,275,779	3,275,779
2003-2004	1,934,638	0	275,607	2,210,245	0	668,087	1,542,158	668,087	2,210,245	2,210,245
2004-2005	3,043,369	0	107,125	3,150,494	36,553	1,836,553	1,313,942	1,800,000	3,113,942	3,113,942
2005-2006	4,094,712	0	718,088	4,812,800	0	2,040,217	2,772,583	2,040,217	4,812,800	4,812,800
2006-2007	5,874,898	0	0	5,874,898	0	3,594,739	2,280,159	3,594,739	5,874,898	5,874,898
2007-2008	5,272,867	0	0	5,272,867	0	2,935,719	2,337,148	2,935,719	5,272,867	5,272,867
2008-2009	2,662,095	0	0	2,662,095	0	1,051,186	1,610,909	1,051,186	2,662,095	2,662,095
2009-2010	6,530,236	0	0	6,530,236	0	3,598,254	2,931,982	3,598,254	6,530,236	6,530,236
2010-2011	4,402,574	0	0	4,402,574	0	2,265,791	2,136,783	2,265,791	4,402,574	4,402,574
2011-2012	5,555,095	0	0	5,555,095	0	2,909,761	2,645,334	2,909,761	5,555,095	5,555,095
2012-2013	3,063,117	0	0	3,063,117	0	1,378,946	1,684,171	1,378,946	3,063,117	3,063,117
2013-2014	2,922,893	0	0	2,922,893	0	1,161,519	1,761,374	1,161,519	2,922,893	2,922,893
2014-2015	1,879,244	0	0	1,879,244	0	900,000	979,244	900,000	1,879,244	1,879,244
2015-2016	520,952	0	0	520,952	0	42,909	478,043	42,909	520,952	520,952
2016-2017	3,313	0	0	3,313	0	0	3,313	0	3,313	3,313
Total	\$69,666,124	\$3,646,196	\$1,100,820	\$74,413,141	\$36,553	\$33,020,380	\$41,392,761	\$32,983,828	\$74,376,588	\$74,376,588

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the Authority. Amounts are gross of deductibles, net of recoveries. All claims prior to 1994-95 are closed.
- (C) Amounts are for the City of Concord and are valued as of 11/30/07. We assume all claims are closed.
- (D) Claims missing from this year's loss run
- (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 Pool - Appendix J.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Case Reserves as of 9/30/16

Accident Year (A)	Unlimited Reserves (B)	Additions to Losses (C)	Additions to Losses (D)	Adjusted Reserves (E)	Reserves Over SIR (F)	Reserves Over \$100,000 (G)	Reserves Capped at \$100,000 (H)	Reserves to SIR Layer \$100,000 (I)	Reserves Capped at SIR (J)	Reserves Capped at SIR & Aggregate (K)
Prior	\$70,940	\$0	\$0	\$70,940	\$0	\$62,500	\$8,440	\$62,500	\$70,940	\$70,940
1996-1997	0	0	0	0	0	0	0	0	0	0
1997-1998	0	0	0	0	0	0	0	0	0	0
1998-1999	0	0	0	0	0	0	0	0	0	0
1999-2000	0	0	0	0	0	0	0	0	0	0
2000-2001	0	0	0	0	0	0	0	0	0	0
2001-2002	0	0	0	0	0	0	0	0	0	0
2002-2003	330,780	0	0	330,780	0	330,285	494	330,285	330,780	330,780
2003-2004	0	0	0	0	0	0	0	0	0	0
2004-2005	0	0	0	0	0	0	0	0	0	0
2005-2006	149,963	0	0	149,963	0	149,963	0	149,963	149,963	149,963
2006-2007	204	0	0	204	0	150	54	150	204	204
2007-2008	383,358	0	0	383,358	0	315,265	68,092	315,265	383,358	383,358
2008-2009	305	0	0	305	0	99	206	99	305	305
2009-2010	825,307	0	0	825,307	0	811,948	13,359	811,948	825,307	825,307
2010-2011	547,182	0	0	547,182	0	520,182	27,000	520,182	547,182	547,182
2011-2012	765,685	0	0	765,685	23,241	706,850	58,836	683,609	742,444	742,444
2012-2013	1,009,973	0	0	1,009,973	0	775,616	234,357	775,616	1,009,973	1,009,973
2013-2014	887,871	0	0	887,871	0	292,933	594,938	292,933	887,871	887,871
2014-2015	2,285,428	0	0	2,285,428	0	1,018,033	1,267,395	1,018,033	2,285,428	2,285,428
2015-2016	2,264,827	0	0	2,264,827	0	914,391	1,350,436	914,391	2,264,827	2,264,827
2016-2017	69,201	0	0	69,201	0	0	69,201	0	69,201	69,201
Total	\$9,591,025	\$0	\$0	\$9,591,025	\$23,241	\$5,898,215	\$3,692,809	\$5,874,975	\$9,567,784	\$9,567,784

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Pool - Appendix K, Page 1, Column (B) - Pool - Appendix K, Page 2, Column (B).
- (C) Pool - Appendix K, Page 1, Column (C) - Pool - Appendix K, Page 2, Column (C).
- (D) Pool - Appendix K, Page 1, Column (D) - Pool - Appendix K, 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 Pool - Appendix J.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Claim Counts as of 9/30/16

Accident Year (A)	Reported Claims (B)	Additions to Reported Claims (C)	Additions to Reported Claims (D)	Adjusted Reported Claims (E)	Closed Claims (F)	Additions to Closed Claims (G)	Additions to Closed Claims (H)	Adjusted Closed Claims (I)	Open Claims (J)	Adjusted Open Claims (K)
Prior	356	0	0	356	355	0	0	355	1	1
1996-1997	173	0	0	173	173	0	0	173	0	0
1997-1998	172	26	0	198	172	26	0	198	0	0
1998-1999	205	40	0	245	205	40	0	245	0	0
1999-2000	204	46	0	250	204	46	0	250	0	0
2000-2001	186	39	0	225	186	39	0	225	0	0
2001-2002	216	29	0	245	216	29	0	245	0	0
2002-2003	219	26	0	245	218	26	0	244	1	1
2003-2004	199	0	1	200	199	0	1	200	0	0
2004-2005	192	0	11	203	191	0	11	202	1	1
2005-2006	139	0	90	229	138	0	90	228	1	1
2006-2007	171	0	0	171	171	0	0	171	0	0
2007-2008	185	0	0	185	183	0	0	183	2	2
2008-2009	179	0	0	179	179	0	0	179	0	0
2009-2010	192	0	0	192	188	0	0	188	4	4
2010-2011	167	0	0	167	163	0	0	163	4	4
2011-2012	160	0	0	160	155	0	0	155	5	5
2012-2013	160	0	0	160	146	0	0	146	14	14
2013-2014	180	0	0	180	165	0	0	165	15	15
2014-2015	194	0	0	194	129	0	0	129	65	65
2015-2016	315	0	0	315	99	0	0	99	216	216
2016-2017	46	0	0	46	3	0	0	3	43	43
Total	4,210	206	102	4,518	3,838	206	102	4,146	372	372

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the Authority. Amounts are gross of deductibles, net of recoveries. All claims prior to 1994-95 are closed.
- (C) Amounts are for the City of Concord and are valued as of 11/30/07. We assume all claims are closed.
- (D) Claims missing from this year's loss run
- (E) (B) + (C) + (D).
- (F) Provided by the Authority.
- (G) Amounts are for the City of Concord and are valued as of 11/30/07. We assume all claims are closed.
- (H) Claims missing from this year's loss run
- (I) (F) + (G) + (H).
- (J) (B) - (F).
- (K) (E) - (I).

Municipal Pooling Authority - Liability - 100K & SIR Analyses

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)
Prior			1,173,170				1.679
1996-1997			1,227,120				1.638
1997-1998			1,326,330				1.598
1998-1999			1,453,820				1.559
1999-2000			1,534,900				1.521
2000-2001			1,706,870				1.484
2001-2002			1,793,210				1.448
2002-2003			1,625,910				1.413
2003-2004			1,888,700				1.379
2004-2005			1,973,887				1.345
2005-2006			2,098,594				1.312
2006-2007			2,274,752				1.280
2007-2008			2,531,867				1.249
2008-2009			2,654,784				1.219
2009-2010			2,596,305				1.189
2010-2011			2,522,385				1.160
2011-2012			2,479,540				1.132
2012-2013			2,406,148				1.104
2013-2014			2,462,209				1.077
2014-2015			2,580,151				1.051
2015-2016			2,928,640				1.025
2016-2017			3,145,683				1.000
2017-2018			3,177,140				1.000

Notes: All exposure data provided by the Authority.

Municipal Pooling Authority - Liability - 100K & SIR Analyses

Adjusted Exposure Measures

Accident Year	Population (A)	Gross Revenue (B)	Total Payroll (C)	Sheriff's Payroll (D)	Number of Police Vehicles (E)	Number of Employees (FTE) (F)	Composite Exposure (G)
Prior			1,969,752				1,969,752
1996-1997			2,010,023				2,010,023
1997-1998			2,119,475				2,119,475
1998-1999			2,266,505				2,266,505
1999-2000			2,334,583				2,334,583
2000-2001			2,532,995				2,532,995
2001-2002			2,596,568				2,596,568
2002-2003			2,297,411				2,297,411
2003-2004			2,604,517				2,604,517
2004-2005			2,654,878				2,654,878
2005-2006			2,753,355				2,753,355
2006-2007			2,911,683				2,911,683
2007-2008			3,162,302				3,162,302
2008-2009			3,236,182				3,236,182
2009-2010			3,087,007				3,087,007
2010-2011			2,925,967				2,925,967
2011-2012			2,806,839				2,806,839
2012-2013			2,656,387				2,656,387
2013-2014			2,651,799				2,651,799
2014-2015			2,711,739				2,711,739
2015-2016			3,001,856				3,001,856
2016-2017			3,145,683				3,145,683
2017-2018			3,177,140				3,177,140
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 Revenue) + (100.0% x Total Payroll) + (0.0% x Sheriff's Payroll) + (0.0% x Police Vehicles) + (0.0% x (FTE)).