



Actuarial Review of the Self-Insured General Liability Program

*Outstanding Liabilities as of June 30, 2016
Forecast for Fiscal Year 2016-17*

Presented to

Municipal Pooling Authority

April 2016



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I. Statement of Purpose & Signature

This document provides an actuarial analysis of Municipal Pooling Authority's (MPA) liability program as of 6/30/16. Included are estimated liabilities as of 6/30/16 and projected funding costs for fiscal year 2016-17. These projections include loss, allocated loss adjustment expense (ALAE), unallocated loss adjustment expense (ULAE), and other expenses.

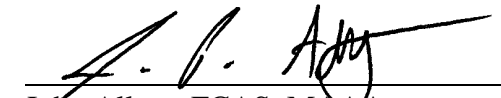
The estimated liabilities assume that all excess insurance and reinsurance is collectible. They are presented at expected levels in addition to 70%, 80%, and 90% confidence intervals.

This study was prepared in accordance with standards produced by the Casualty Actuarial Society, the American Academy of Actuaries, and the Government Accounting Standards Board.

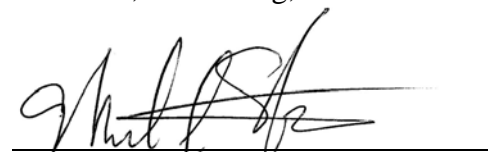
Loss, ALAE (mostly legal fees), and ULAE (claims handling expenses) are analyzed in this study. ALAE and ULAE combined are called "Loss Adjustment Expense" (LAE).

This report is intended for the use of MPA. If released to a third party, it must be released in its entirety and the authors should be advised at Bickmore. Bickmore reserves the right to supplement this report with additional explanations and qualifications as it deems to be appropriate for the particular user.

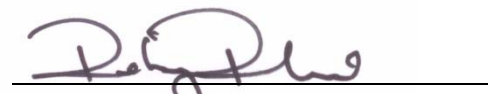
This report relies on loss, exposure, and insurance program information provided by MPA.



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Monday, April 11, 2016

II. Executive Summary

Liability Estimates

The following chart summarizes our estimates of MPA’s liability loss and LAE reserves as of June 30, 2016.

Financial Position As of June 30, 2016			
(\$000’s)			
	Assets Available	Loss & ALAE Liabilities	Financial Position
Undiscounted			
Average (“Expected”)	\$16,011	\$12,002	\$4,009
70% Confidence ²	16,011	13,268	2,743
80% Confidence ²	16,011	14,467	1,544
90% Confidence ²	16,011	16,361	(350)
Net Present Value¹			
Average (“Expected”)	16,011	11,394	4,617
70% Confidence ²	16,011	12,592	3,419
80% Confidence ²	16,011	13,726	2,285
90% Confidence ²	16,011	15,517	494

¹ Investment income reflects an annual return on investments of 2.00%.

² The confidence levels are designed to add a provision for the possibility that losses will develop worse than expected. For example, the “70% Confidence” liabilities should be sufficient to pay future losses 70% of the time. “Expected” liabilities do not contain a risk load. On average, actual losses will be higher than expected about 50% of the time and lower than expected about 50% of the time.

The liabilities in the above chart pertain to accidents occurring on or before 6/30/16. The projections reflect payments that are anticipated to be made after 6/30/16 on accidents that occurred on or before 6/30/16.

The projected liabilities reflect anticipated loss payments and allocated loss adjustment expense (ALAE: mostly legal fees) and unallocated loss adjustment expense (ULAE: mostly claims handling expense). Further details regarding the projections are in the “Discussion of Results” section as well as in the attached exhibits.

Municipal Pooling Authority
General Liability

Projected Funding Rates for Fiscal Year 2016-17

The following chart summarizes our estimates of MPA’s liability program costs for fiscal year 2016-17. These rates reflect projected costs as a percentage of payroll (in hundreds of dollars).

Projected Funding Rates				
Fiscal Year 2016-17				
70% Confidence Level				
Rates per \$100 of Payroll				
Deductible	Loss & ALAE ¹ Deductible to \$1,000,000	Other Expenses	Excess Insurance Premium	Total Funding Rate
\$5,000	\$1.990	\$0.444	\$0.758	\$3.192
10,000	1.864	0.444	0.758	3.066
25,000	1.627	0.444	0.758	2.829
50,000	1.360	0.444	0.758	2.562
100,000	1.047	0.444	0.758	2.249

¹Loss & ALAE are discounted at an annual rate of 2.00%.
Rates from Deductibles of \$5,000 to \$100,000.

The above chart pertains to accidents that are expected to occur between 7/1/16 and 6/30/17. The estimates include all payments on those claims, including payments made after 6/30/16.

Further details regarding the above projections are in the “Discussion of Results” section as well as in the attached exhibits and appendices.

Municipal Pooling Authority
General Liability

Experience Modification Factors

The following are the current and projected experience modification factors for each member. The methodology used to develop these factors did not change from the prior year.

Experience Modification Factors Fiscal Years 2015-16 & 2016-17			
Location	2015-16	2016-17	% Change
Antioch	1.748	1.568	-10.3%
Brentwood	0.511	0.506	-1.1%
Clayton	0.859	0.850	-1.1%
Danville	1.329	0.981	-26.2%
El Cerrito	0.532	0.718	35.1%
Gilroy	1.309	1.183	-9.6%
Hercules	1.217	1.022	-16.0%
Lafayette	1.544	1.254	-18.8%
Manteca	0.859	0.738	-14.0%
Martinez	1.442	1.163	-19.3%
Moraga	1.125	1.082	-3.8%
Oakley	1.186	1.396	17.7%
Orinda	0.910	1.153	26.7%
Pinole	0.920	0.749	-18.7%
Pittsburg	1.145	1.183	3.3%
Pleasant Hill	1.094	1.052	-3.8%
San Pablo	0.869	1.123	29.2%
San Ramon	0.828	0.708	-14.5%
Walnut Creek	0.910	1.133	24.5%

The experience modification factors are based on three years of payroll and incurred losses. Inverse condemnation claims are limited to \$150,000 per occurrence, and all other claims are limited to \$100,000 per occurrence (2015-16 factors were based on losses limited to \$75,000/\$150,000).

III. Discussion of Results

Comparison to Prior Report

The results of the current analysis reflect lower than anticipated loss development since the prior analysis.

Comparison to Prior Report Fiscal Year 2016-17			
Financial Position (\$000) and Funding Rates per \$100 of Payroll			
	Prior ¹ Report to 6/30/15	Current ² Report to 6/30/16	% Change
<u>Financial Position (\$000)</u>			
End of Year Assets	\$16,191	\$16,011	(\$180)
End of Yr. Liabilities			
Expected	11,665	11,394	(271)
70% Confidence	12,877	12,592	(285)
90% Confidence	16,188	15,517	(671)
Financial Position			
Expected	4,526	4,617	91
70% Confidence	3,314	3,419	105
90% Confidence	3	494	491
<u>Funding Rate</u>³			
Loss @\$100k Ded.	\$1.074	\$1.047	(3%)
Other Expenses	0.517	0.444	(14%)
Excess Insurance Premium	0.821	0.758	(8%)
Total Rate	2.412	2.249	(7%)

¹ NPV @2.00%, in \$000's

² NPV @2.00%, in \$000's

³ Rate per \$100 of payroll at 70% confidence level.

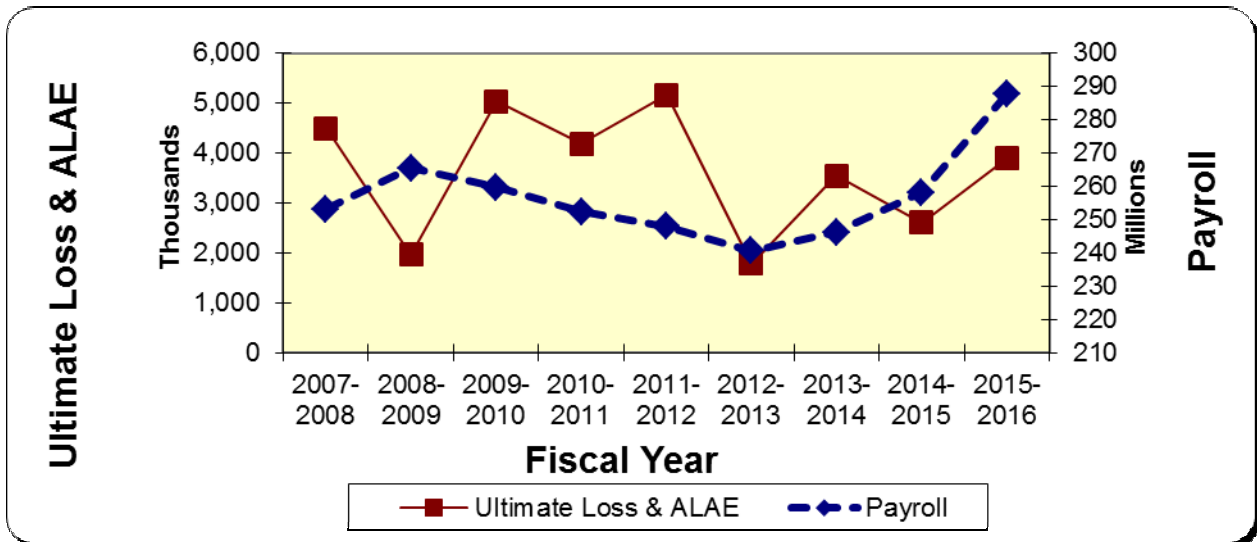
Both the prior and current rates exclude the costs for ERMA.

Trends

MPA's ultimate loss projections have varied over the past several years without showing a distinct trend. Ultimate loss projections are a function of both incurred loss activity and IBNR.

Liability Program

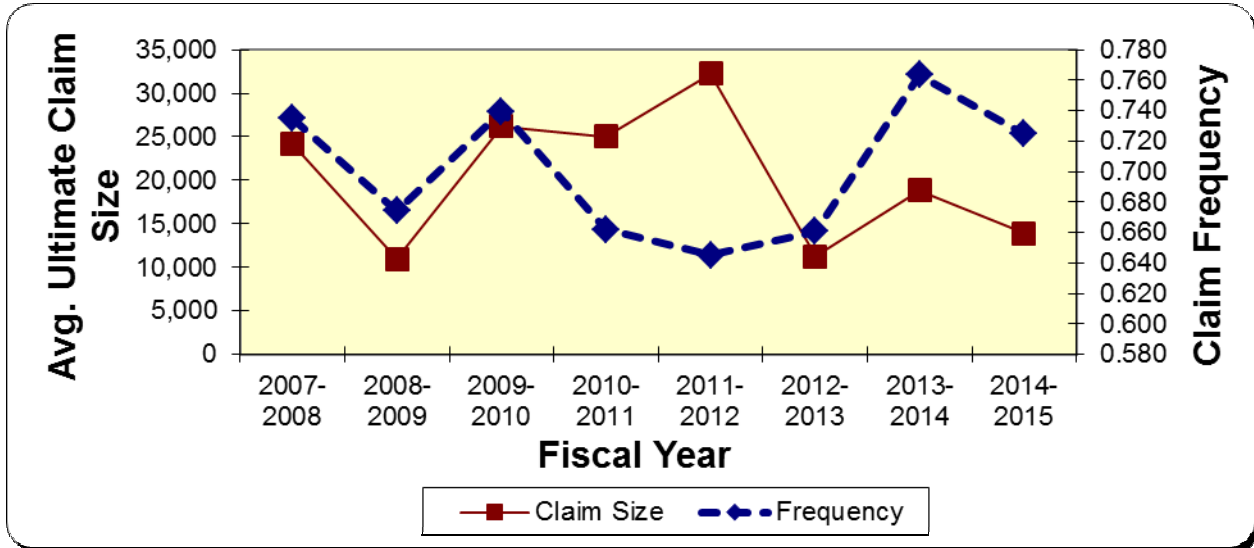
Projected Pooled Ultimate Loss & Payroll (Excluding Richmond)



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General Liability*

MPA’s projected ultimate claim size and frequency display a similar pattern to the loss rate.

**Liability Program (Excluding Richmond)
Claims Size and Claim Frequency (\$0 to \$1M layer)**



In the above chart, the average ultimate claim size is the projected ultimate loss & ALAE divided by the projected ultimate number of claims. We have included loss & ALAE for the layer from \$0 to \$1M. Claims frequency is the projected ultimate number of claims (with payments) divided by payroll in millions.

Excess Insurance

MPA purchases insurance from CARMA to cover the cost of very large claims. MPA’s self-insured retention (SIR) is currently \$1,000,000. The SIR is similar to a deductible in that MPA is responsible for all Loss and ALAE up to the SIR, and CARMA pays for costs above the SIR.

Claims Administration

MPA liability claims are self-administered.

IV. Methodology

The methodology we used to project liability reserves is in complete accordance with standard actuarial principles. We used the following 5-step process to calculate rates.

1. Estimate Ultimate Losses for Historical Years: The ultimate value of losses associated with a given policy year is usually not known until many years after the policy year has expired. One estimate of future payments for a given policy year is the case reserves.

To accurately project future payments for a given policy year, we also take into account the following three factors:

- a. The amount that case reserves are redundant or deficient.
- b. Losses that occurred during the policy period but have not yet been reported. This is called “Pure IBNR.”
- c. Future payments on claims which are closed but will be reopened in the future.

Added together, these liabilities are commonly referred to as “incurred but not reported” reserves or “IBNR”.

The loss development factors in this study are based on the MPA’s actual experience. The following methods were used to estimate ultimate losses:

- a. Incurred Loss Development: Ultimate loss equals incurred loss times the incurred loss development factor. Incurred loss is equal to paid loss plus case reserves.
 - b. Paid Loss Development: Ultimate loss equals paid loss times the paid loss development factor.
 - c. Exposure Method Incurred: This method takes incurred losses and adds an IBNR load that is based on exposure amount. Unlike the loss development methods, the aim of this method is to account for the relationship between exposure and expected loss.
 - d. Frequency/Severity: Ultimate loss is projected based on multiplying projected ultimate claim counts times average severities.
2. Select Ultimate Historical Loss: The selected ultimate loss is based on the results of all the methods from step #1 above.
 3. Estimated Pooled Liabilities: MPA’s liabilities equal the projected ultimate losses in MPA’s layer minus payments.

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4. Financial Position: MPA's financial position equals MPA's assets minus liabilities. Both assets and liabilities are projected forward to a valuation date of 6/30/16.
5. Net Present Value: Since payments associated with the liabilities will be spread out over several years, they are discounted to reflect anticipated investment on assets set aside to pay these costs. The expected Loss & ALAE payout pattern is based on the selected paid loss development factors.

In this study, payments are discounted at an annual rate of 2.00%.

V. Actuarial Considerations

The Casualty Actuarial Society Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Liabilities provide a list of items which should be considered in evaluating the accuracy of ultimate loss costs. These considerations have been included in the analysis of MPA's experience in the following manner:

1. **Homogeneity**

The accuracy of loss estimates may be improved by subdividing loss experience into groups exhibiting similar characteristics. In evaluating MPA's loss experience all losses were combined by fiscal year.

2. **Credibility**

Credibility is a measure of the predictive value attached to a body of data. The degree to which consideration is given to homogeneity is related to the consideration of credibility. While making more homogeneous groupings may increase the credibility of the data, partitioning into cells too small to be reliable statistically may also decrease it. Any further subdivision of data (by city, for instance) would reduce the statistical credibility too greatly.

3. **Data Availability**

MPA provided us with loss, exposure, and other insurance program information. We relied on all of this information without audit.

Losses include allocated loss adjustment expense, and throughout this report any reference to losses should be understood to mean claims payments and reserves plus such expense. The costs of unallocated loss adjustment expense are reflected in this analysis.

4. **Emergence Pattern**

The delay between the occurrence of claims and the recording of claims was considered in the estimation of loss development factors.

5. **Settlement Patterns**

The rate at which claims are closed and the impact upon incurred losses are considered in the calculation of loss development factors.

6. **Development Patterns**

The rate at which known cases develop to their ultimate level was included in the calculation of loss development factors. Selected development patterns are based on MPA's own historical experience.

7. **Claim Frequency and Average Claim Size**

Consideration of average and potential claim frequency and average claim size has been included and analyzed in this report

8. **Reopened Claim Potential**

The effect of reopened claims is included in the calculation of loss development factors.

9. **Loss Limitations**

Initially, all losses were limited to the appropriate deductible and pool limit.

10. **Collateral Sources**

The impact of any salvage and subrogation are included in the calculation of loss development factors, which have been based upon losses net of recovered items. No specific collateral sources for recovery such as coordination of benefits programs or second injury funds have been cited by MPA.

11. **Portfolio Transfers, Commutations, and Structured Settlements**

No specific portfolio transfers, commutations, or structured settlements have been cited by MPA.

12. **Pools and Associations**

Only data pertaining to MPA has been considered. To the extent that MPA's experience is made up of the combined experience of individual municipalities, this has been taken into account in the report.

13. **Operational Changes**

We have accounted for changes in MPA's exposure to liability claims as best as possible by basing projections in relation to payroll.

14. **Changes in Contracts**

No specific changes in past or present contracts have been cited by MPA; therefore, none have been assumed.

15. **External Influences**

This analysis contemplates a continuation of current social, economic, judicial, and legislative trends.

16. **Discounting**

Since the financial liability for casualty claims that have occurred may not be paid out for many years, the investment income potential may be recognized. An analysis of such potential investment income is included in this report (see Methodology).

17. **Provision for Uncertainty**

The uncertainty inherent in the projections is quantified via confidence levels. Projections at 70%, 80% and 90% confidence levels are presented in the Executive Summary of this report.

18. **Reasonableness**

We have established the reasonability of our results by utilizing several loss projection methods.

19. **Generally Accepted Accounting Practices and Loss Related Balance Sheet Items**

The estimates in this report are in accordance with GAAP and GASB accounting principles.

20. **Loss Reserving Methods**

All methods used in this report to estimate ultimate loss costs are standard actuarial techniques. A detailed discussion of the terminology and methods employed in this report are in the section entitled "Methodology."

21. **Standards of Practice**

The standards of practice as adopted by the Actuarial Standards Board and published as "Actuarial Standard of Practice #9, Documentation and Disclosure in Property and Casualty Insurance Ratemaking and Loss Reserving," have been followed.

VI. Qualifying Statements

This document is an actuarial opinion and contains estimates of MPA's general and employment practices liability liabilities. Also included is a projection of ultimate loss and LAE costs for fiscal year 2016-17.

It is important to recognize that the projections in this report are estimates at one point in time and are subject to future changes. The accuracy of the information in this report depends on many factors, including the following:

1. Loss Activity Between the Evaluation Date of the Losses and the Current Date: The losses in this study were valued as of 9/30/15. It is possible that there has been significant loss activity that has occurred since the loss valuation dates, which would change the findings of this report. For City of Richmond, we were provided with losses since they joined MPA.
2. Data Accuracy: This report relies on unaudited loss and exposure information provided by MPA. The accuracy of our projections relies on the accuracy of this data.
3. Loss Development: The appropriateness of MPA's loss development patterns in projecting their future loss development.
4. Trend Changes: The appropriateness of the trend indices used to adjust historical losses.

Throughout this report, the term "loss" includes loss and ALAE. ALAE includes those expenses which are clearly assignable to an individual claim (such as legal and expert witness fees). ULAE is also analyzed in this report, and it includes claims adjusters' fees not assignable to an individual claim.

This report should only be viewed in its entirety. For questions regarding this report or further research, please contact the actuarial department of Bickmore.

VII. Definition of Terms

1. ALAE: This is short for “Allocated Loss Adjustment Expense.” ALAE includes those expenses which are clearly assignable to an individual claim (i.e., legal and expert witness fees). ALAE excludes claims adjusters’ fees not assignable to an individual claim.
2. Discounting: Losses are discounted to estimate the net present value of losses. This report displays loss reserves discounted at 2.00%.
3. Exposure: This attempts to quantify the source from which claims arise. In this study, the exposure base is payroll.
4. Frequency: Measures the number of claims in relation to exposure (see #3 above). This is useful in evaluating the effectiveness of loss prevention techniques and certain reforms.
5. LAE: This is short for “Loss Adjustment Expense.” LAE includes both Allocated Loss Adjustment Expense (ALAE) and Unallocated Loss Adjustment Expense (ULAE), both of which are defined elsewhere in this section.
6. Limit: Losses are “limited” or capped at particular values for many purposes. For the purposes of calculating 6/30/16 liabilities, all losses are limited to the appropriate self-insured retention.
7. Loss Rate: Measures loss in relation to exposure (payroll in hundreds).
8. Loss Rate Trend: Measures the change in loss rate over time. This is useful in determining if the program is improving or deteriorating over time.
9. Projected Ultimate Loss: These include all losses expected to be incurred during a given fiscal year. A loss is considered to be incurred during the fiscal period if it is associated with an accident that occurred during the fiscal period. Losses incurred during the fiscal period may be paid considerably after the end of the period. In this report, the term “loss” includes both loss and ALAE.
10. Severity: Average Claim Size

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11. Trending: “Trend” has two meanings in this report. The first meaning (more familiar to those outside insurance circles) is “change over time.” For instance, “Losses are trending upwards” means that they are increasing over time.

The second usage of “trend” means “adjusted to a different time period.” For instance, losses are “trended” to 2015 dollars by adjusting for claims inflation to 2015.

12. ULAE: This is short for “Unallocated Loss Adjustment Expense.” ULAE includes those expenses that are not clearly assignable to an individual claim. This consists mostly of payments made to the third party administrator (TPA).

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Funding Guidelines for Outstanding Liabilities at
September 30, 2015

(A) Estimated Ultimate Losses Incurred through 9/30/15: (From Pool Excluding Richmond - Appendix F)	\$59,536,000
(B) Estimated Paid Losses through 9/30/15: (From Pool Excluding Richmond - Appendix F)	48,204,000
(C) Estimated Liability for Claims Outstanding at 9/30/15: (From Pool Excluding Richmond - Appendix F)	<u>\$11,332,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 9/30/15:	805,000
(E) Total Outstanding Liability for Claims at 9/30/15: ((C) + (D))	<u>\$12,137,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.0%) (Pool Excluding Richmond - Appendix H, Page 1, (G))	0.949
(G) Discounted Outstanding Liability for Claims at 9/30/15: ((E) x (F))	<u>\$11,517,000</u>

	Marginally Acceptable	75%	Recommended	85%	Conservative
Confidence Level of Adequacy:	70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Pool Excluding Richmond - Appendix I)	1.113	1.162	1.220	1.292	1.389
(I) Margin for Adverse Experience: (((G)-(D)) x ((H) - 1))	1,210,000	1,735,000	2,357,000	3,128,000	4,167,000
(J) Total Required Available Funding at 9/30/15:					
Undiscounted ((C) x (H) + (D))	<u>\$13,418,000</u>	<u>\$13,973,000</u>	<u>\$14,630,000</u>	<u>\$15,446,000</u>	<u>\$16,545,000</u>
NPV ((G) + (I))	12,727,000	13,252,000	13,874,000	14,645,000	15,684,000
(K) Estimated Actual Funding at 9/30/15: From Exhibit 6	\$16,011,000	\$16,011,000	\$16,011,000	\$16,011,000	\$16,011,000
(L) Indicated Funding Redundancy/ (Deficiency): ((K)-(J))					
Undiscounted	<u>\$2,593,000</u>	<u>\$2,038,000</u>	<u>\$1,381,000</u>	<u>\$565,000</u>	<u>(\$534,000)</u>
NPV	3,284,000	2,759,000	2,137,000	1,366,000	327,000

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Funding Guidelines for Outstanding Liabilities at
June 30, 2016

(A) Estimated Ultimate Losses Incurred through 6/30/16: (From Pool Excluding Richmond - Appendix F)	\$62,451,000
(B) Estimated Paid Losses through 6/30/16: (From Pool Excluding Richmond - Appendix F)	51,245,000
(C) Estimated Liability for Claims Outstanding at 6/30/16: (From Pool Excluding Richmond - Appendix F)	<u>\$11,206,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 6/30/16:	796,000
(E) Total Outstanding Liability for Claims at 6/30/16: ((C) + (D))	<u>\$12,002,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.0%) (Pool Excluding Richmond - Appendix H, Page 1, (H))	0.949
(G) Discounted Outstanding Liability for Claims at 6/30/16: ((E) x (F))	<u>\$11,394,000</u>

Confidence Level of Adequacy:	<u>Marginally Acceptable</u>		<u>Recommended</u>		<u>Conservative</u>
	70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Pool Excluding Richmond - Appendix I)	1.113	1.162	1.220	1.292	1.389
(I) Margin for Adverse Experience: (((G)-(D)) x ((H) - 1))	1,198,000	1,717,000	2,332,000	3,095,000	4,123,000
(J) Total Required Available Funding at 6/30/16:					
Undiscounted ((C) x (H) + (D))	<u>\$13,268,000</u>	<u>\$13,817,000</u>	<u>\$14,467,000</u>	<u>\$15,274,000</u>	<u>\$16,361,000</u>
NPV ((G) + (I))	12,592,000	13,111,000	13,726,000	14,489,000	15,517,000
(K) Estimated Actual Funding at 6/30/16: From Exhibit 6	\$16,011,000	\$16,011,000	\$16,011,000	\$16,011,000	\$16,011,000
(L) Indicated Funding Redundancy/ (Deficiency): ((K)-(J))					
Undiscounted	<u>\$2,743,000</u>	<u>\$2,194,000</u>	<u>\$1,544,000</u>	<u>\$737,000</u>	<u>(\$350,000)</u>
NPV	3,419,000	2,900,000	2,285,000	1,522,000	494,000

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Funding Options for Program Year 2015-2016 (SIR = \$1,000,000)

	Dollar Amount				
(A) Estimated Ultimate Losses Incurred in Accident Year 2015-2016: (From Pool Excluding Richmond - Appendix F)	\$3,887,000				
(B) Estimated Claims Administration Fees Incurred in Accident Year 2015-2016: (From Pool Excluding Richmond - Exhibit 9, Page 1, item (L))	438,000				
(C) Total Claims Costs Incurred in Accident Year 2015-2016: ((A) + (B))	\$4,325,000				
(D) Loss Discount Factor (Based on a Discount Rate of 2.0%.) (Pool Excluding Richmond - Appendix H, Page 2, (F))	0.945				
(E) Discounted Total Claims Costs Incurred in Accident Year 2015-2016: ((C) x (D))	\$4,087,000				
	Marginally Acceptable	Recommended			Conservative
	70%	75%	80%	85%	90%
(F) Confidence Level Factor: (From Pool Excluding Richmond - Appendix I)	1.171	1.255	1.353	1.476	1.641
(G) Margin for Adverse Experience: ((E) x [(F) - 1])	699,000	1,042,000	1,443,000	1,945,000	2,620,000
(H) Recommended Funding in 2015-2016 for Claims Costs and Other Expenses ((E) + (G))	\$4,786,000	\$5,129,000	\$5,530,000	\$6,032,000	\$6,707,000

Payroll rates are per hundred dollars of 2015-2016 payroll of \$287,555,400.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Funding Options for Program Year 2016-2017 (SIR = \$1,000,000)
One-Year Funding Plan

	<u>Dollar Amount</u>				
(A) Estimated Ultimate Losses Incurred in Accident Year 2016-2017: (From Pool Excluding Richmond - Appendix F)					\$4,034,000
(B) Estimated Claims Administration Fees Incurred in Accident Year 2016-2017: (From Pool Excluding Richmond - Exhibit 9, Page 1, item (L))					450,000
(C) Total Claims Costs Incurred in Accident Year 2016-2017: ((A) + (B))					<u>\$4,484,000</u>
(D) Loss Discount Factor (Based on a Discount Rate of 2.0%.) (Pool Excluding Richmond - Appendix H, Page 2, (F))					0.945
(E) Discounted Total Claims Costs Incurred in Accident Year 2016-2017: ((C) x (D))					<u>\$4,237,000</u>
	<u>Marginally Acceptable</u>		<u>Recommended</u>		<u>Conservative</u>
	70%	75%	80%	85%	90%
(F) Confidence Level Factor: (From Pool Excluding Richmond - Appendix I)	1.171	1.255	1.353	1.476	1.641
(G) Margin for Adverse Experience: ((E) x [(F) - 1])	725,000	1,080,000	1,496,000	2,017,000	2,716,000
(H) Recommended Funding in 2016-2017 for Claims Costs and Other Expenses ((E) + (G))	<u>\$4,962,000</u>	<u>\$5,317,000</u>	<u>\$5,733,000</u>	<u>\$6,254,000</u>	<u>\$6,953,000</u>

Payroll rates are per hundred dollars of 2016-2017 payroll of \$290,431,000.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

IBNR as of 6/30/16 at Expected Claims Level

Accident Year	Estimated Ultimate (A)	Reported as of 9/30/15 (B)	Estimated IBNR as of 9/30/15 (C)	Estimated Percent of IBNR Reported Between 10/1/15 and 6/30/16 (D)	Estimated IBNR Reported (E)	Estimated IBNR as of 6/30/16 (F)
1995-1996	1,376,100	1,376,100	(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	1,204,036	1,204,025	11	100.0%	11	0
2002-2003	2,216,597	2,216,465	132	100.0%	132	0
2003-2004	1,363,245	1,363,073	172	100.0%	172	0
2004-2005	2,398,585	2,398,527	58	100.0%	58	(0)
2005-2006	3,891,000	3,890,978	22	100.0%	22	0
2006-2007	4,659,000	4,656,608	2,392	100.0%	2,392	(0)
2007-2008	4,490,000	4,479,287	10,713	100.0%	10,713	(0)
2008-2009	1,959,000	1,945,241	13,759	39.9%	5,000	8,759
2009-2010	5,030,000	4,953,807	76,193	41.4%	32,000	44,193
2010-2011	4,186,000	4,067,407	118,593	39.4%	47,000	71,593
2011-2012	5,159,000	4,889,059	269,941	38.0%	103,000	166,941
2012-2013	1,788,000	1,527,156	260,844	45.3%	118,000	142,844
2013-2014	3,547,000	2,539,735	1,007,265	36.5%	368,000	639,265
2014-2015	2,603,000	890,927	1,712,073	41.5%	711,000	1,001,073
2015-2016	3,887,000	536,060	436,000	33.0%	1,106,000	2,244,940
Totals	\$62,450,714	\$55,627,606	\$3,908,168		\$2,503,500	\$4,319,608

Notes:

- (A) From Pool Excluding Richmond - 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 10/1/15 and 6/30/16. The percentage is based on the development pattern selected in Pool Excluding Richmond - 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 6/30/16. 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 without City of Richmond

Estimated Ultimate Limited Losses Within Member Deductible

Accident Year	Paid Losses Within Member Deductible as of 9/30/15 (A)	Case Reserves Within Member Deductible as of 9/30/15 (B)	Incurred Losses Within Member Deductible as of 9/30/15 (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	\$959,995	\$0	\$959,995		Various	0.510	1.000	\$959,995
1995-1996	657,328	0	657,328	1.000	Various	0.580	1.000	657,328
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	1	892,212	1.000	Various	0.713	1.000	892,212
2001-2002	912,011	0	912,011	1.000	Various	0.623	1.000	912,000
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	715,415
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	5,000	1,131,938	1.001	Various	0.480	1.000	1,132,000
2008-2009	772,731	206	772,936	1.002	Various	0.464	1.000	773,000
2009-2010	1,360,532	37,844	1,398,376	1.003	Various	0.476	1.000	1,398,000
2010-2011	878,264	0	878,264	1.005	Various	0.409	1.002	880,000
2011-2012	1,245,162	64,315	1,309,477	1.009	Various	0.490	1.004	1,315,000
2012-2013	974,022	250,906	1,224,928	1.032	Various	0.601	1.019	1,248,000
2013-2014	736,801	581,462	1,318,262	1.073	Various	0.541	1.039	1,370,000
2014-2015	302,132	1,124,829	1,426,961	1.450	Various	0.701	1.316	1,877,000
Totals	\$19,532,590	\$2,064,562	\$21,597,152					\$22,128,548

Projected Losses within Member Deductible for the Year 2015-2016 (I) \$1,582,000
 Projected Losses within Member Deductible for the Year 2016-2017 (J) \$1,597,000

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 Excluding Richmond - 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 2014-2015.

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 without City of Richmond

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)
1995-1996	1,133,828	1,134,962	1,133,828	1,134,962	1,133,883	1,133,828
1996-1997	1,430,014	1,431,444	1,430,014	1,431,444	1,430,018	1,430,014
1997-1998	2,091,721	2,093,813	2,091,721	2,093,814	2,091,672	2,091,721
1998-1999	2,588,886	2,591,475	2,588,886	2,591,475	2,588,915	2,588,886
1999-2000	2,057,287	2,061,402	2,057,287	2,061,401	2,057,250	2,057,287
2000-2001	1,820,084	1,825,543	1,820,084	1,825,540	1,819,978	1,820,000
2001-2002	1,760,695	1,767,738	1,760,695	1,767,739	1,760,815	1,760,695
2002-2003	2,141,098	2,151,307	2,141,098	2,151,310	2,141,055	2,141,000
2003-2004	1,542,158	1,551,411	1,542,158	1,551,410	1,542,200	1,542,158
2004-2005	1,313,942	1,323,140	1,313,942	1,323,133	1,314,019	1,314,000
2005-2006	2,772,583	2,797,536	2,772,583	2,797,532	2,772,503	2,773,000
2006-2007	2,280,213	2,305,241	2,280,213	2,305,255	2,280,285	2,280,213
2007-2008	2,362,600	2,346,125	2,362,604	2,346,831	2,362,944	2,363,000
2008-2009	1,670,226	1,637,523	1,670,232	1,638,626	1,670,070	1,670,000
2009-2010	2,949,577	2,951,596	2,949,609	2,950,442	2,950,080	2,950,000
2010-2011	2,157,382	2,165,316	2,159,694	2,185,513	2,311,280	2,159,000
2011-2012	2,696,232	2,704,180	2,695,809	2,697,529	2,279,200	2,696,000
2012-2013	2,097,805	1,643,168	2,108,486	1,809,127	2,333,325	2,103,000
2013-2014	2,617,580	2,660,741	2,609,711	2,578,417	2,842,184	2,614,000
2014-2015	3,026,620	1,789,921	2,877,678	2,413,565	2,912,151	2,952,000
Totals						\$44,323,802
						Projected Losses for the Year 2015-2016 (G) \$2,789,000
						Projected Losses for the Year 2016-2017 (H) \$2,829,000

Notes:

- (A) From Pool Excluding Richmond - Appendix A, Page 1, Column (D).
- (B) From Pool Excluding Richmond - Appendix B, Page 1, Column (D).
- (C) Based on results in Pool Excluding Richmond - Appendix C, Page 1.
- (D) Based on results in Pool Excluding Richmond - Appendix C, Page 2.
- (E) Based on results in Pool Excluding Richmond - Appendix D, Page 1.
- (F) Selected averages of (A), (B), (C), (D), and (E).
- (G) From Pool Excluding Richmond - Exhibit 9, Page 1, Line (K) / Line (G) .
- (H) From Pool Excluding Richmond - 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 without City of Richmond

Selection of Increased Limits Factors (\$100,000 to \$1,000,000) for 2015-2016 and 2016-2017

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				1.259
1995-1996	1,000,000	1,133,828	2,033,428	1.793	1.397
1996-1997	1,000,000	1,430,014	1,876,897	1.313	1.417
1997-1998	1,000,000	2,091,721	3,851,532	1.841	1.438
1998-1999	1,000,000	2,588,886	4,069,196	1.572	1.459
1999-2000	1,000,000	2,057,287	2,495,245	1.213	1.483
2000-2001	1,000,000	1,820,000	3,372,353	1.853	1.507
2001-2002	1,000,000	1,760,695	2,116,036	1.202	1.532
2002-2003	1,000,000	2,141,000	3,505,000	1.637	1.557
2003-2004	1,000,000	1,542,158	2,210,245	1.433	1.585
2004-2005	1,000,000	1,314,000	3,114,000	2.370	1.611
2005-2006	1,000,000	2,773,000	4,963,000	1.790	1.640
2006-2007	1,000,000	2,280,213	5,877,000	2.577	1.669
2007-2008	1,000,000	2,363,000	5,622,000	2.379	1.698
2008-2009	1,000,000	1,670,000	2,732,000	1.636	1.728
2009-2010	1,000,000	2,950,000	6,428,000	2.179	1.760
2010-2011	1,000,000	2,159,000	5,066,000	2.346	1.792
2011-2012	1,000,000	2,696,000	6,474,000	2.401	1.824
2012-2013	1,000,000	2,103,000	3,036,000	1.444	1.858
2013-2014	1,000,000	2,614,000	4,917,000	1.881	1.893
2014-2015	1,000,000	2,952,000	4,480,000	1.518	1.926
Total ex Latest 2 Years		36,873,802	68,841,932	1.867	
Total 09/10-14/15		15,474,000	30,401,000	1.965	
All Years		42,439,802	78,238,932	1.844	
		Prior Selected 2014-2015 \$100K-SIR ILF:		1.956	
		(F) Selected 2015-2016 \$100K-SIR ILF:		1.961	
		(G) Selected 2016-2017 \$100K-SIR ILF:		1.991	

Notes:

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

Municipal Pooling Authority - Liability - Pooled Layer
Selection of 2016-17 Projected Limited and Program Loss Rate
at Expected Confidence Level

Deductible Amount	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 (C)	Present Value Factor at 2.0% Interest (D)	Recommended Funding Per \$100 of Payroll For Losses From In Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention (E)	Estimated Operating and Administrative Expenses Per \$100 of Payroll (F)	Estimated Excess Insurance Premium Per \$100 of Payroll (G)	Rates Per \$100 of Payroll (H)
\$5,000	\$0.791	\$0.974	\$1.765	0.963	\$1.699	\$0.444	\$0.758	\$2.901
10,000	0.685	0.974	1.659	0.960	1.592	0.444	0.758	2.794
25,000	0.480	0.974	1.454	0.955	1.389	0.444	0.758	2.591
50,000	0.266	0.974	1.240	0.937	1.162	0.444	0.758	2.364
100,000	0.000	0.974	0.974	0.918	0.894	0.444	0.758	2.096

Rates for Deductibles \$5,000 through \$100,000: Excluding Richmond
Rates include a provision for CARMA Excess Insurance Premium, but do not include a provision for ERMA EPL Premium.

- (A) Based on deductible analysis and Exhibit 7.
- (B) Based on \$100K & \$1M analyses and Exhibit 7.
- (C) (A) + (B)
- (D) Based on Authority's historical paid out patterns.
- (E) (C) X (D)
- (F) Includes projected Fiscal Year 2016-17 Operating & Admin Expenses of \$0.444 per \$100 of payroll.
- (G) Includes projected Fiscal Year 2016-17 Excess Insurance Premium of \$0.758 per \$100 of payroll.
- (H) (E) + (F) + (G)

Municipal Pooling Authority - Liability - Pooled Layer
Selection of 2016-17 Projected Limited and Program Loss Rate
at 60% Confidence Level

Deductible Amount	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At Expected Confidence Level (A)	60% Confidence Level Factor (B)	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At 60% Confidence Level (C)	Present Value Factor at 2.0% Interest (D)	Recommended Funding Per \$100 of Payroll For Losses From In Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention (E)	Estimated Operating and Administrative Expenses Per \$100 of Payroll (F)	Estimated Excess Insurance Premium Per \$100 of Payroll (G)	Rates Per \$100 of Payroll (H)
\$5,000	\$1.765	1.032	\$1.821	0.963	\$1.753	\$0.444	\$0.758	\$2.955
10,000	1.659	1.032	1.712	0.960	1.643	0.444	0.758	2.845
25,000	1.454	1.032	1.501	0.955	1.434	0.444	0.758	2.636
50,000	1.240	1.032	1.280	0.937	1.199	0.444	0.758	2.401
100,000	0.974	1.032	1.005	0.918	0.922	0.444	0.758	2.124

Rates for Deductibles \$5,000 through \$100,000: Excluding Richmond
Rates include a provision for CARMA Excess Insurance Premium, but do not include a provision for ERMA EPL Premium.

- (A) From Exhibit 5, page 1.
- (B) From Exhibit 2.
- (C) (A) X (B)
- (D) Based on Authority's historical paid out patterns.
- (E) (C) X (D)
- (F) Includes projected Fiscal Year 2016-17 Operating & Admin Expenses of \$0.444 per \$100 of payroll.
- (G) Includes projected Fiscal Year 2016-17 Excess Insurance Premium of \$0.758 per \$100 of payroll.
- (H) (E) + (F) + (G)

Municipal Pooling Authority - Liability - Pooled Layer
Selection of 2016-17 Projected Limited and Program Loss Rate
at 70% Confidence Level

Deductible Amount	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At Expected Confidence Level (A)	70% Confidence Level Factor (B)	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At 70% Confidence Level (C)	Present Value Factor at 2.0% Interest (D)	Recommended Funding Per \$100 of Payroll For Losses From In Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention (E)	Estimated Operating and Administrative Expenses Per \$100 of Payroll (F)	Estimated Excess Insurance Premium Per \$100 of Payroll (G)	Rates Per \$100 of Payroll (H)
\$5,000	\$1.765	1.171	\$2.067	0.963	\$1.990	\$0.444	\$0.758	\$3.192
10,000	1.659	1.171	1.943	0.960	1.864	0.444	0.758	3.066
25,000	1.454	1.171	1.703	0.955	1.627	0.444	0.758	2.829
50,000	1.240	1.171	1.452	0.937	1.360	0.444	0.758	2.562
100,000	0.974	1.171	1.141	0.918	1.047	0.444	0.758	2.249

Rates for Deductibles \$5,000 through \$100,000: Excluding Richmond
Rates include a provision for CARMA Excess Insurance Premium, but do not include a provision for ERMA EPL Premium.

- (A) From Exhibit 5, page 1.
- (B) From Exhibit 2.
- (C) (A) X (B)
- (D) Based on Authority's historical paid out patterns.
- (E) (C) X (D)
- (F) Includes projected Fiscal Year 2016-17 Operating & Admin Expenses of \$0.444 per \$100 of payroll.
- (G) Includes projected Fiscal Year 2016-17 Excess Insurance Premium of \$0.758 per \$100 of payroll.
- (H) (E) + (F) + (G)

Municipal Pooling Authority - Liability - Pooled Layer
Selection of 2016-17 Projected Limited and Program Loss Rate
at 80% Confidence Level

Deductible Amount	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At Expected Confidence Level (A)	80% Confidence Level Factor (B)	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At 80% Confidence Level (C)	Present Value Factor at 2.0% Interest (D)	Recommended Funding Per \$100 of Payroll For Losses From In Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention (E)	Estimated Operating and Administrative Expenses Per \$100 of Payroll (F)	Estimated Excess Insurance Premium Per \$100 of Payroll (G)	Rates Per \$100 of Payroll (H)
\$5,000	\$1.765	1.353	\$2.388	0.963	\$2.299	\$0.444	\$0.758	\$3.501
10,000	1.659	1.353	2.245	0.960	2.154	0.444	0.758	3.356
25,000	1.454	1.353	1.967	0.955	1.879	0.444	0.758	3.081
50,000	1.240	1.353	1.678	0.937	1.572	0.444	0.758	2.774
100,000	0.974	1.353	1.318	0.918	1.210	0.444	0.758	2.412

Rates for Deductibles \$5,000 through \$100,000: Excluding Richmond
Rates include a provision for CARMA Excess Insurance Premium, but do not include a provision for ERMA EPL Premium.

- (A) Based on deductible analysis and Exhibit 6.
- (B) Based on \$100K & \$1M analyses and Exhibit 6.
- (C) (A) + (B)
- (D) Based on Authority's historical paid out patterns.
- (E) (C) X (D)
- (F) Includes projected Fiscal Year 2016-17 Operating & Admin Expenses of \$0.444 per \$100 of payroll.
- (G) Includes projected Fiscal Year 2016-17 Excess Insurance Premium of \$0.758 per \$100 of payroll.
- (H) (E) + (F) + (G)

Municipal Pooling Authority - Liability - Pooled Layer
Selection of 2016-17 Projected Limited and Program Loss Rate
at 90% Confidence Level

Deductible Amount	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At Expected Confidence Level (A)	90% Confidence Level Factor (B)	Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention At 90% Confidence Level (C)	Present Value Factor at 2.0% Interest (D)	Recommended Funding Per \$100 of Payroll For Losses From In Excess of Deductibles to the Program's \$1.0 Million Self-Insured Retention (E)	Estimated Operating and Administrative Expenses Per \$100 of Payroll (F)	Estimated Excess Insurance Premium Per \$100 of Payroll (G)	Rates Per \$100 of Payroll (H)
\$5,000	\$1.765	1.641	\$2.896	0.963	\$2.788	\$0.444	\$0.758	\$3.990
10,000	1.659	1.641	2.722	0.960	2.612	0.444	0.758	3.814
25,000	1.454	1.641	2.386	0.955	2.279	0.444	0.758	3.481
50,000	1.240	1.641	2.035	0.937	1.907	0.444	0.758	3.109
100,000	0.974	1.641	1.598	0.918	1.467	0.444	0.758	2.669

Rates for Deductibles \$5,000 through \$100,000: Excluding Richmond
Rates include a provision for CARMA Excess Insurance Premium, but do not include a provision for ERMA EPL Premium.

- (A) Based on deductible analysis and Exhibit 6.
- (B) Based on \$100K & \$1M analyses and Exhibit 6.
- (C) (A) + (B)
- (D) Based on Authority's historical paid out patterns.
- (E) (C) X (D)
- (F) Includes projected Fiscal Year 2016-17 Operating & Admin Expenses of \$0.444 per \$100 of payroll.
- (G) Includes projected Fiscal Year 2016-17 Excess Insurance Premium of \$0.758 per \$100 of payroll.
- (H) (E) + (F) + (G)

Estimated Financial Position of the Liability
Insurance Pool as of

Liability Insurance

1. Estimated Assets Available to Pay Claims as of June 30, 2015	\$15,678,000
2. Premiums Collected in Fiscal Year 2015-2016 (gross of member rebates and retrospective premiums)	\$9,000,000
3. Estimated Investment Income Earned in Fiscal Year 2015-2016 at 2.0% Interest	\$140,000
4. Other Income (Dividends Received)	-
5. Operating and Administrative Expenses Budgeted for Fiscal Year 2015-2016 (including the excess insurance premium and the premium for coverage of employment practices liability claims)	4,752,000
6. Estimated Pooled Losses Paid in Fiscal Year 2015-2016	4,055,000
7. Estimated Assets Available to Pay Claims as of (1)+(2)+(3)+(4)-(5)-(6)	----- \$16,011,000
8a. Estimated Claim Liability Reserve for Pooled Losses as of June 30, 2016	11,206,000
8b. Estimated Liability for Outstanding Claims Administration Fee as of	796,000 -----
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)	4,009,000
10a. Estimated Present Value of the Claim Liability Reserve for Pooled Losses as of June 30, 2016	\$10,598,000
10b. Estimated Present Value of Outstanding Liability for Claims Administration Fee as of	\$796,000
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)	=====
	\$4,617,000

Estimated Assets Available to Pay Claims
as of Jun 30, 2015

Liability Insurance

Assets:

1. Cash and Cash Equivalents as of June 30, 2015	\$1,897,000
2. Investments as of June 30, 2015	-
3. Receivables as of June 30, 2015	
Member Agencies	120,000
Excess Insurance	-
Interest	55,000
Other	1,204,000
Interprogram Receivables	-
Total	
4. Prepaid Expenses as of June 30, 2015	<u>55,000</u>
5. Total Current Assets as of June 30, 2015	\$3,332,000
6. Member Agencies Receivable as of June 30, 2015	-
7. Interprogram Receivables as of June 30, 2015	-
8. Investments as of June 30, 2015	13,891,000
9. Capital Assets (Net) as of June 30, 2015	<u>32,000</u>
10. Total Noncurrent Assets as of June 30, 2015	\$13,923,000
11. Total Assets as of June 30, 2015 (5)+(9)	<u>=====</u> \$17,254,000
Non- Claims Liabilities:	
12. Accounts Payable as of June 30, 2015	-
13. Accrued Vacation & Payroll Payable as of June 30, 2015	42,000
14. Other Payable as of June 30, 2015	108,000
15. Member Dividends Payable as of June 30, 2015	<u>1,427,000</u>
17. Total Liabilities as of June 30, 2015 (16)+(18)	<u>=====</u> \$1,577,000
18. Estimated Assets Available to Pay Claims as of June 30, 2015 (10)-(19)	\$15,678,000

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
2004-2005	483,464	692,859	1,051,975	1,364,541	1,706,387	1,841,956	2,041,956	2,541,956	3,541,956	4,352,008	4,352,008
2005-2006	602,042	946,978	1,675,268	2,428,315	3,225,087	3,920,466	4,888,436	6,136,164	6,669,538	6,669,538	6,669,538
2006-2007	498,440	800,657	1,410,366	1,906,160	2,589,462	3,201,990	3,800,036	5,050,036	6,952,955	7,665,676	7,665,676
2007-2008	490,306	760,700	1,309,350	1,910,019	2,715,055	3,224,496	4,074,149	5,549,931	6,594,756	7,128,296	7,128,296
2008-2009	428,418	612,575	966,853	1,407,335	1,914,188	2,186,773	2,368,879	2,618,879	3,118,879	3,348,763	3,348,763
2009-2010	567,876	929,634	1,640,450	2,340,177	3,250,901	3,896,038	4,911,995	6,528,442	7,685,915	7,693,481	7,693,481
2010-2011	454,631	685,421	1,147,643	1,678,006	2,337,910	2,796,872	3,523,593	4,510,569	5,510,569	5,927,144	5,927,144
2011-2012	445,158	667,408	1,189,303	1,858,508	2,841,704	3,486,400	4,427,532	5,472,553	6,972,553	7,375,555	7,375,555
2012-2013	410,907	636,785	1,099,766	1,618,261	2,342,596	2,665,727	3,033,702	3,283,702	3,732,183	3,732,183	3,732,183
2013-2014	477,899	738,356	1,298,156	1,996,473	2,942,356	3,516,049	4,149,225	4,661,948	5,161,948	5,523,102	5,523,102
2014-2015	686,765	1,124,194	1,954,239	2,685,929	3,538,910	4,041,184	4,790,788	5,394,080	5,589,278	5,589,278	5,589,278
Total	5,545,906	8,595,569	14,743,369	21,193,725	29,404,557	34,777,951	42,010,290	51,748,259	61,530,528	65,005,022	65,005,022
2004-2005	0.283	0.406	0.616	0.800	1.000	1.079	1.197	1.490	2.076	2.550	2.550
2005-2006	0.187	0.294	0.519	0.753	1.000	1.216	1.516	1.903	2.068	2.068	2.068
2006-2007	0.192	0.309	0.545	0.736	1.000	1.237	1.468	1.950	2.685	2.960	2.960
2007-2008	0.181	0.280	0.482	0.703	1.000	1.188	1.501	2.044	2.429	2.625	2.625
2008-2009	0.224	0.320	0.505	0.735	1.000	1.142	1.238	1.368	1.629	1.749	1.749
2009-2010	0.175	0.286	0.505	0.720	1.000	1.198	1.511	2.008	2.364	2.367	2.367
2010-2011	0.194	0.293	0.491	0.718	1.000	1.196	1.507	1.929	2.357	2.535	2.535
2011-2012	0.157	0.235	0.419	0.654	1.000	1.227	1.558	1.926	2.454	2.595	2.595
2012-2013	0.175	0.272	0.469	0.691	1.000	1.138	1.295	1.402	1.593	1.593	1.593
2013-2014	0.162	0.251	0.441	0.679	1.000	1.195	1.410	1.584	1.754	1.877	1.877
2014-2015	0.194	0.318	0.552	0.759	1.000	1.142	1.354	1.524	1.579	1.579	1.579
Total	0.189	0.292	0.501	0.721	1.000	1.183	1.429	1.760	2.093	2.211	2.211
7-Year Avg	0.181	0.281	0.485	0.709	1.000	1.178	1.419	1.694	1.970	2.044	2.044
5-Year Avg	0.177	0.275	0.478	0.702	1.000	1.179	1.423	1.666	1.926	2.010	2.010
3-Year Avg	0.179	0.283	0.493	0.714	1.000	1.159	1.357	1.512	1.641	1.682	1.682
Prior	0.203	0.315	0.526	0.740	1.000	1.181	1.403	1.678	1.956	2.032	2.067
Selection	0.196	0.304	0.512	0.730	1.000	1.180	1.408	1.683	1.961	2.036	2.059

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 Excluding Richmond (1)	Estimated Ultimate Losses Within Deductibles Excluding Richmond (2)	Estimated Ultimate Pooled Losses (1)-(2) (3)	Estimated Ultimate Pooled Losses Richmond Only (4)	Pooled Losses Paid as of 9/30/2015 (5)	Estimated Pooled Losses Unpaid as of 9/30/2015 (3)+(4)-(5) (6)
Prior	\$2,453,330	\$959,995	\$1,493,335	\$0	\$1,466,050	\$27,000
1995-1996	2,033,428	657,328	1,376,100	0	1,376,100	0
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	3,372,353	892,212	2,480,141	0	2,480,141	0
2001-2002	2,116,036	912,000	1,204,036	0	1,204,025	0
2002-2003	3,505,000	1,288,403	2,216,597	0	1,931,621	285,000
2003-2004	2,210,245	847,000	1,363,245	0	1,363,073	0
2004-2005	3,114,000	715,415	2,398,585	0	2,398,527	0
2005-2006	4,963,000	1,072,000	3,891,000	0	3,881,015	10,000
2006-2007	5,877,000	1,218,000	4,659,000	0	4,656,404	3,000
2007-2008	5,622,000	1,132,000	4,490,000	0	4,122,515	367,000
2008-2009	2,732,000	773,000	1,959,000	0	1,887,024	72,000
2009-2010	6,428,000	1,398,000	5,030,000	0	4,337,069	693,000
2010-2011	5,066,000	880,000	4,186,000	0	3,304,234	882,000
2011-2012	6,474,000	1,315,000	5,159,000	0	3,736,507	1,422,000
2012-2013	3,036,000	1,248,000	1,788,000	0	456,564	1,331,000
2013-2014	4,917,000	1,370,000	3,547,000	0	828,584	2,718,000
2014-2015	4,480,000	1,877,000	2,603,000	0	54,497	2,549,000
2015-2016	5,469,000	1,582,000	3,887,000	0	0	3,887,000
Totals	\$86,161,262	\$23,710,548	\$62,450,714	\$0	\$48,203,626	\$14,246,000

(6) Estimated Pooled Losses Paid From 10/01/15 through 06/30/16 3,041,000

(7) Estimated Claim Liability Reserve as of 06/30/16 \$11,205,000

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- 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 06/30/16 (000)																				
		2016-17	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
Prior	\$14	\$14	\$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	238	71	47	48	72	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	8	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2006-2007	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007-2008	283	87	44	30	22	23	23	15	15	23	0	0	0	0	0	0	0	0	0	0	0
2008-2009	56	17	12	6	4	3	3	3	2	2	3	0	0	0	0	0	0	0	0	0	0
2009-2010	533	162	111	80	41	27	21	21	21	14	14	21	0	0	0	0	0	0	0	0	0
2010-2011	697	210	148	101	73	37	25	19	19	19	13	13	19	0	0	0	0	0	0	0	0
2011-2012	1,026	319	213	150	102	74	38	25	19	19	13	13	20	0	0	0	0	0	0	0	0
2012-2013	919	356	175	117	82	56	41	21	14	11	11	11	7	7	11	0	0	0	0	0	0
2013-2014	1,840	771	415	204	136	96	65	47	24	16	12	12	12	8	8	13	0	0	0	0	0
2014-2015	2,054	776	535	288	141	94	67	45	33	17	11	9	9	6	6	9	0	0	0	0	0
2015-2016	3,537	782	1,042	718	386	190	126	89	61	44	22	15	11	11	12	8	8	12	0	0	0
Total	\$11,206	\$3,567	\$2,743	\$1,743	\$1,062	\$602	\$410	\$288	\$209	\$165	\$106	\$94	\$72	\$55	\$37	\$26	\$17	\$12	\$0	\$0	\$0
Present Value Factors at 2.0% Interest		0.990	0.971	0.952	0.933	0.915	0.897	0.879	0.862	0.845	0.829	0.812	0.796	0.781	0.765	0.750	0.736	0.721	0.707	0.693	0.680
Present Value of Future Payments (1)x(2)		\$3,532	\$2,663	\$1,659	\$991	\$550	\$367	\$253	\$180	\$140	\$88	\$76	\$57	\$43	\$28	\$20	\$12	\$8	\$0	\$0	\$0
Total Present Value of the Estimated Reserve (sum of line (3))		\$10,667																			

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 without City of Richmond

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)
1995-1996	1,133,828	1.089	1,234,739	1,921,652	0.643
1996-1997	1,430,014	1.084	1,550,135	1,960,938	0.791
1997-1998	2,091,721	1.079	2,256,967	2,067,748	1.092
1998-1999	2,588,886	1.075	2,783,052	2,211,260	1.259
1999-2000	2,057,287	1.070	2,201,297	2,277,792	0.966
2000-2001	1,820,000	1.066	1,940,120	2,471,548	0.785
2001-2002	1,760,695	1.061	1,868,097	2,533,806	0.737
2002-2003	2,141,000	1.057	2,263,037	2,242,130	1.009
2003-2004	1,542,158	1.052	1,622,350	2,540,302	0.639
2004-2005	1,314,000	1.048	1,377,072	2,589,740	0.532
2005-2006	2,773,000	1.043	2,892,239	2,686,200	1.077
2006-2007	2,280,213	1.039	2,369,141	2,841,165	0.834
2007-2008	2,363,000	1.035	2,445,705	3,086,346	0.792
2008-2009	1,670,000	1.030	1,720,100	3,156,538	0.545
2009-2010	2,950,000	1.026	3,026,700	3,011,714	1.005
2010-2011	2,159,000	1.021	2,204,339	2,855,340	0.772
2011-2012	2,696,000	1.017	2,741,832	2,737,412	1.002
2012-2013	2,103,000	1.013	2,130,339	2,591,421	0.822
2013-2014	2,614,000	1.009	2,637,526	2,587,782	1.019
2014-2015	2,952,000	1.004	2,963,808	2,644,655	1.121
Totals	\$44,323,802		\$46,287,807	52,936,030	\$0.874
10/11-14/15	12,524,000		12,677,844	13,416,610	0.945
11/12-14/15	10,365,000		10,473,505	10,561,270	0.992
			(F) Selected Limited Rate:		\$0.970
			Prior Selected Limited Rate:		\$1.000
Program Year:		2015-2016	2016-2017		
(G) Factor to SIR:		1.961	1.991		
(H) Trend Factor:		1.000	1.004		
(I) Program Rate:		\$1.902	\$1.939		
(J) Composite Exposure:		2,875,554	2,904,310		
(K) Projected Program Losses:		5,469,000	5,631,000		
(L) Projected ULAE:		438,000	450,000		
(M) Projected Loss and ULAE:		\$5,907,000	\$6,081,000		

Notes appear on the next page.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

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

Notes:

- (A) From Pool Excluding Richmond - Exhibit 3, Page 4, Column (F).
For purposes of projecting future losses, losses are capped at \$100,000 per occurrence.
- (B) From Pool Excluding Richmond - Appendix E, Column (B).
- (C) $(A) \times (B)$.
- (D) From Pool Excluding Richmond - 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 Excluding Richmond - Appendix E.
 - (I) $(F) \times (G) \times (H)$.
- (J) From Pool Excluding Richmond - Appendix L, Page Page 2, Column (G).
- (K) $(I) \times (J)$.
- (L) Based on an estimated claim closing pattern and the Authority's historical claims administration expenses.
- (M) $(K) + (L)$.

This exhibit shows the calculation of future loss costs based on the past loss rates per 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 without City of Richmond

Reported Loss Development

Accident Year (A)	Limited Reported Losses as of 9/30/15 (B)	Reported Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Reported Losses of 9/30/15 (E)	Reported Loss Development Factor (F)	Ultimate Program Losses (G)
1995-1996	1,133,828	1.000	1,133,828	2,033,428	1.000	2,033,428
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	1,820,084	1.000	1,820,084	3,372,353	1.000	3,372,353
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	3,504,868	1.000	3,504,868
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	2,360,240	1.001	2,362,600	5,611,225	1.002	5,622,447
2008-2009	1,666,892	1.002	1,670,226	2,718,177	1.005	2,731,768
2009-2010	2,940,755	1.003	2,949,577	6,352,183	1.012	6,428,409
2010-2011	2,148,787	1.004	2,157,382	4,945,671	1.025	5,069,313
2011-2012	2,672,182	1.009	2,696,232	6,198,536	1.051	6,514,661
2012-2013	2,038,683	1.029	2,097,805	2,752,084	1.140	3,137,376
2013-2014	2,437,225	1.074	2,617,580	3,857,997	1.314	5,069,408
2014-2015	2,035,387	1.487	3,026,620	2,317,888	2.147	4,976,506
Totals	\$43,116,639		\$44,394,510	\$76,688,698		\$81,484,825

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 Excluding Richmond - 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 Excluding Richmond - 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 without City of Richmond
Reported Loss Development

Limited Losses Reported 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
1994-1995	662,755	2,091,741	2,383,985	2,214,271	2,169,305	2,144,121	2,211,756	2,206,216	2,290,647	2,290,769	2,290,769
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	
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		
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			
2009-2010	295,937	1,742,879	3,017,268	3,327,448	3,115,671	2,924,825	2,940,755				
2010-2011	142,201	1,782,520	2,170,413	2,237,016	2,054,881	2,148,787					
2011-2012	238,903	1,770,073	2,703,704	2,642,857	2,672,182						
2012-2013	94,815	1,366,827	1,949,263	2,038,683							
2013-2014	109,986	1,995,919	2,437,225								
2014-2015	159,053	2,035,387									
2015-2016	222,396										

Amounts Include All Locations Except Richmond

The 2012-13 diagonal is valued as of 10/31/12.

The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

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
1994-1995	3.156	1.140	0.929	0.980	0.988	1.032	0.997	1.038	1.000	1.000	0.989
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	
2006-2007	11.712	1.239	1.032	1.028	0.879	1.000	1.021	1.000	1.000		
2007-2008	13.018	1.315	0.924	1.036	1.014	1.041	1.017	1.000			
2008-2009	6.472	1.346	1.126	1.030	0.993	1.003	1.012				
2009-2010	5.889	1.731	1.103	0.936	0.939	1.005					
2010-2011	12.535	1.218	1.031	0.919	1.046						
2011-2012	7.409	1.527	0.977	1.011							
2012-2013	14.416	1.426	1.046								
2013-2014	18.147	1.221									
2014-2015	12.797										
Average	8.824	1.232	0.975	0.993	0.985	1.007	1.009	1.021	1.001	1.004	1.006
Dollar-weighted											
Averages											
3-yr	14.836	1.381	1.014	0.956	0.984	1.017	1.017	1.000	1.002	1.000	1.022
4-yr	11.892	1.339	1.041	0.968	0.991	1.012	1.011	1.000	1.002	1.013	1.016
Industry											
Factors	5.584	1.394	1.028	0.965	0.964	1.000	1.000	1.000	1.000	1.000	1.000
Prior	11.000	1.400	1.045	1.020	1.005	1.001	1.001	1.001	1.001	1.000	1.000
Selected	12.500	1.385	1.044	1.020	1.005	1.001	1.001	1.001	1.001	1.000	1.000
Cumulated	18.588	1.487	1.074	1.029	1.009	1.004	1.003	1.002	1.001	1.000	1.000

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond
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
1994-1995	2,265,439	2,230,863									
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				
2000-2001	1,820,083	1,820,083	1,820,083	1,820,083	1,820,084						
2001-2002	1,760,695	1,760,695	1,760,695	1,760,695							
2002-2003	2,149,949	2,149,949	2,141,098								
2003-2004	1,639,282	1,542,158									
2004-2005	1,313,942										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

	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
1994-1995	0.985										
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					
1999-2000	1.001	0.992	1.000	1.000	1.000						
2000-2001	1.000	1.000	1.000	1.000							
2001-2002	1.000	1.000	1.000								
2002-2003	1.000	0.996									
2003-2004	0.941										
2004-2005											
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
Average	0.991	0.998	1.000	1.000	1.000	1.000					
Dollar-weighted											
Averages											
3-yr	0.982	0.998	1.000	1.000	1.000						
4-yr	0.987	0.997	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	0.000
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 without City of Richmond
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
1994-1995											
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	
2007-2008		142,500	171,414	1,470,476	2,028,873	2,043,546	2,447,953	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			
2009-2010		685,920	1,194,566	2,056,548	2,768,458	2,984,657	3,411,428				
2010-2011		680,673	1,251,956	2,467,395	2,573,921	2,796,885					
2011-2012		7,089	614,161	2,348,916	3,526,354						
2012-2013		85,000	137,002	713,401							
2013-2014		586,675	1,420,772								
2014-2015		282,501									
2015-2016	404,561										

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

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
1994-1995											
1995-1996											1.000
1996-1997										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	
2006-2007		1.789	1.656	1.236	1.012	0.999	0.996	1.000	1.000		
2007-2008		1.203	8.579	1.380	1.007	1.198	1.328	1.000			
2008-2009		1.000	1.073	1.089	0.963	1.000	1.000				
2009-2010		1.742	1.722	1.346	1.078	1.143					
2010-2011		1.839	1.971	1.043	1.087						
2011-2012		86.636	3.825	1.501							
2012-2013		1.612	5.207								
2013-2014		2.422									
2014-2015											

	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
Average Dollar-weighted Averages		10.636	3.064	1.161	1.039	1.055	1.068	1.003	0.998	1.005	1.020
3-yr		3.200	2.761	1.290	1.062	1.137	1.111	1.012	0.974	1.001	1.050
4-yr		2.519	2.372	1.265	1.049	1.085	1.126	1.012	0.976	1.026	1.045
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	5.055	1.993	1.312	1.149	1.047	1.025	1.014	1.004	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 without City of Richmond
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
1994-1995	937,020	794,909									569,351
1995-1996	900,264									899,600	
1996-1997									446,883		
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			
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			
1999-2000	447,620	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						
2001-2002	355,342	355,342	355,342	355,342							
2002-2003	1,291,873	1,363,770	1,363,770								
2003-2004	698,183	668,087									
2004-2005	1,800,000										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

	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
1994-1995	0.848										
1995-1996											
1996-1997											
1997-1998	1.000	1.020	0.988	1.000	1.000	1.000	1.000				
1998-1999	1.000	1.000	1.000	1.000	1.000	1.000					
1999-2000	0.978	1.000	1.000	1.000	1.000						
2000-2001	1.000	1.000	1.000	1.000							
2001-2002	1.000	1.000	1.000								
2002-2003	1.056	1.000									
2003-2004	0.957										
2004-2005											
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
Average Dollar-weighted Averages	0.980	1.003	0.998	1.000	1.000	1.000	1.000				
3-yr	1.018	1.000	1.000	1.000	1.000						
4-yr	1.011	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	0.000
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 without City of Richmond

Paid Loss Development

Accident Year (A)	Limited Paid Losses as of 9/30/15 (B)	Paid Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Paid Losses of 9/30/15 (E)	Paid Loss Development Factor (F)	Ultimate Program Losses (G)
1995-1996	1,133,828	1.001	1,134,962	2,033,428	1.001	2,035,461
1996-1997	1,430,014	1.001	1,431,444	1,876,897	1.002	1,880,651
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	1.003	4,081,404
1999-2000	2,057,287	1.002	2,061,402	2,495,245	1.005	2,507,721
2000-2001	1,820,083	1.003	1,825,543	3,372,352	1.007	3,395,958
2001-2002	1,760,695	1.004	1,767,738	2,116,036	1.009	2,135,080
2002-2003	2,140,604	1.005	2,151,307	3,220,024	1.012	3,258,664
2003-2004	1,542,158	1.006	1,551,411	2,210,245	1.015	2,243,399
2004-2005	1,313,942	1.007	1,323,140	3,113,942	1.019	3,173,107
2005-2006	2,772,583	1.009	2,797,536	4,952,800	1.024	5,071,667
2006-2007	2,280,159	1.011	2,305,241	5,874,898	1.034	6,074,645
2007-2008	2,313,733	1.014	2,346,125	5,249,453	1.050	5,511,926
2008-2009	1,608,569	1.018	1,637,523	2,659,755	1.072	2,851,257
2009-2010	2,879,606	1.025	2,951,596	5,697,601	1.108	6,312,942
2010-2011	2,090,073	1.036	2,165,316	4,182,498	1.157	4,839,150
2011-2012	2,508,516	1.078	2,704,180	4,981,669	1.275	6,351,628
2012-2013	1,323,002	1.242	1,643,168	1,430,586	1.581	2,261,756
2013-2014	1,283,522	2.073	2,660,741	1,565,385	2.822	4,417,516
2014-2015	356,629	5.019	1,789,921	356,629	7.770	2,771,007
Totals	\$39,152,304		\$42,792,133	\$67,736,216		\$77,462,645

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 Excluding Richmond - 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 Excluding Richmond - 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 without City of Richmond

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
1994-1995	86,603	448,136	1,437,312	2,064,820	2,119,917	2,129,382	2,133,674	2,145,432	2,152,546	2,252,038	2,252,039
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	
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		
2008-2009	29,427	428,542	751,266	1,336,912	1,529,368	1,579,306	1,585,563	1,608,569			
2009-2010	111,515	581,807	1,389,045	2,172,952	2,555,279	2,778,915	2,879,606				
2010-2011	23,256	414,841	995,267	1,617,716	1,617,716	1,934,070	2,090,073				
2011-2012	36,595	419,903	1,040,534	2,054,041	2,508,516						
2012-2013	27,342	298,068	725,800	1,323,002							
2013-2014	22,981	547,388	1,283,522								
2014-2015	6,781	356,629									
2015-2016	24,287										

Amounts Include All Locations Except Richmond

The 2012-13 diagonal is valued as of 10/31/12.

The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

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
1994-1995	5.175	3.207	1.437	1.027	1.004	1.002	1.006	1.003	1.046	1.000	1.002
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	
2006-2007	5.274	2.563	1.691	1.173	1.030	1.000	1.022	1.000	1.000		
2007-2008	12.222	2.718	1.575	1.093	1.016	1.008	1.057	1.022			
2008-2009	14.563	1.753	1.780	1.144	1.033	1.004	1.015				
2009-2010	5.217	2.387	1.564	1.176	1.088	1.036					
2010-2011	17.838	2.399	1.625	1.196	1.081						
2011-2012	11.474	2.478	1.974	1.221							
2012-2013	10.901	2.435	1.823								
2013-2014	23.819	2.345									
2014-2015	52.592										
Average	14.299	2.364	1.543	1.117	1.030	1.009	1.014	1.022	1.005	1.002	1.009
Dollar-weighted											
Averages											
3-yr	21.051	2.410	1.809	1.197	1.071	1.019	1.033	1.007	1.002	1.000	1.028
4-yr	17.311	2.408	1.727	1.187	1.057	1.014	1.022	1.006	1.002	1.007	1.020
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	12.500	2.425	1.650	1.140	1.035	1.010	1.007	1.004	1.003	1.002	1.002
Selected	14.500	2.421	1.669	1.152	1.041	1.011	1.007	1.004	1.003	1.002	1.002
Cumulated	72.776	5.019	2.073	1.242	1.078	1.036	1.025	1.018	1.014	1.011	1.009

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond
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
1994-1995	2,255,439	2,230,863									
1995-1996	1,427,187										
1996-1997									81,600	1,133,828	1,856,694
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	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				
1999-2000	2,052,135	2,056,966	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						
2001-2002	1,760,695	1,760,695	1,760,695	1,760,695							
2002-2003	2,133,151	2,134,723	2,140,604								
2003-2004	1,639,282	1,542,158									
2004-2005	1,313,942										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
2015-2016											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

	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
1994-1995	0.989									29.872	
1995-1996									13.895		
1996-1997								23.045			
1997-1998	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					
1999-2000	1.002	1.000	1.000	1.000	1.000						
2000-2001	1.000	1.000	1.000	1.000							
2001-2002	1.000	1.000	1.000								
2002-2003	1.001	1.003									
2003-2004	0.941										
2004-2005											
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
Average Dollar-weighted Averages	0.992	1.001	1.000	1.000	1.000	1.000	1.000	23.045	13.895	29.872	
3-yr	0.983	1.001	1.000	1.000	1.000						
4-yr	0.987	1.001	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	0.000
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 without City of Richmond
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
1994-1995	793,677	794,909									569,351
1995-1996	900,264									899,600	
1996-1997									446,883		
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			
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			
1999-2000	397,620	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						
2001-2002	355,342	355,342	355,342	355,342							
2002-2003	1,004,125	1,045,572	1,079,420								
2003-2004	698,183	668,087									
2004-2005	1,800,000										
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

	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
1994-1995	1.002										
1995-1996											
1996-1997											
1997-1998	1.003	1.026	0.995	1.000	1.000	1.000	1.000				
1998-1999	1.000	1.000	1.000	1.000	1.000	1.000					
1999-2000	1.101	1.000	1.000	1.000	1.000						
2000-2001	1.000	1.000	1.000	1.000							
2001-2002	1.000	1.000	1.000								
2002-2003	1.041	1.032									
2003-2004	0.957										
2004-2005											
2005-2006											
2006-2007											
2007-2008											
2008-2009											
2009-2010											
2010-2011											
2011-2012											
2012-2013											
2013-2014											
2014-2015											
Average Dollar-weighted Averages	1.013	1.010	0.999	1.000	1.000	1.000	1.000				
3-yr	1.006	1.011	1.000	1.000	1.000						
4-yr	1.003	1.010	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	1.003	1.003	1.003	1.001	1.001	1.002	0.000
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 without City of Richmond
Paid between \$100,000 and \$1,000,000 Loss Development

Accident Year	<u>Losses Paid 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
1994-1995											
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	
2007-2008			24,275	528,137	1,663,549	1,696,161	1,778,667	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			
2009-2010		6,166	751,815	856,719	1,897,915	2,237,403	2,817,995				
2010-2011			18,211	963,898	1,983,645	2,092,425					
2011-2012				289,888	2,473,154						
2012-2013				107,583							
2013-2014			281,864								
2014-2015											
2015-2016											

Amounts Include All Locations Except Richmond
The 2012-13 diagonal is valued as of 10/31/12.
The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

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
1994-1995											
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	
2006-2007			5.976	1.425	1.450	1.014	1.000	1.000	1.000		
2007-2008			21.756	3.150	1.020	1.049	1.651	1.000			
2008-2009		37.435	1.044	1.088	1.001	1.000	1.000				
2009-2010		121.929	1.140	2.215	1.179	1.259					
2010-2011			52.929	2.058	1.055						
2011-2012				8.531							
2012-2013											
2013-2014											
2014-2015											
Average Dollar-weighted Averages											
3-yr				3.011	1.091	1.133	1.180	1.036	0.975	1.000	1.010
4-yr				2.408	1.073	1.084	1.165	1.060	0.977	1.000	1.009
Industry Factors											
Prior	11.179	4.014	2.045	1.416	1.206	1.095	1.073	1.046	1.033	1.021	1.009
Selected	9.552	3.326	1.859	1.371	1.180	1.092	1.067	1.044	1.031	1.018	1.009
Cumulated	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 without City of Richmond

Exposure and Development Method
Based on Reported Losses

Accident Year	Composite Exposure (A)	Reported Losses as of 9/30/15 (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)
1995-1996	1,921,652	2,033,428	1.000	0.000	0.824	0	2,033,428
1996-1997	1,960,938	1,876,897	1.000	0.000	1.033	0	1,876,897
1997-1998	2,067,748	3,851,532	1.000	0.000	1.455	0	3,851,532
1998-1999	2,211,260	4,069,196	1.000	0.000	1.709	0	4,069,196
1999-2000	2,277,792	2,495,245	1.000	0.000	1.339	0	2,495,245
2000-2001	2,471,548	3,372,353	1.000	0.000	1.109	0	3,372,353
2001-2002	2,533,806	2,116,036	1.000	0.000	1.065	0	2,116,036
2002-2003	2,242,130	3,504,868	1.000	0.000	1.487	0	3,504,868
2003-2004	2,540,302	2,210,245	1.000	0.000	0.962	0	2,210,245
2004-2005	2,589,740	3,113,942	1.000	0.000	0.817	0	3,113,942
2005-2006	2,686,200	4,962,763	1.000	0.000	1.692	0	4,962,763
2006-2007	2,841,165	5,875,102	1.000	0.000	1.340	0	5,875,102
2007-2008	3,086,346	5,611,225	1.002	0.002	1.301	8,031	5,619,256
2008-2009	3,156,538	2,718,177	1.005	0.005	0.914	14,425	2,732,602
2009-2010	3,011,714	6,352,183	1.012	0.012	1.725	62,342	6,414,525
2010-2011	2,855,340	4,945,671	1.025	0.024	1.712	117,320	5,062,991
2011-2012	2,737,412	6,198,536	1.051	0.049	1.750	234,733	6,433,269
2012-2013	2,591,421	2,752,084	1.140	0.123	1.787	569,597	3,321,681
2013-2014	2,587,782	3,857,997	1.314	0.239	1.828	1,130,581	4,988,578
2014-2015	2,644,655	2,317,888	2.147	0.534	1.870	2,640,900	4,958,788
Totals	52,936,030	\$76,688,698				\$4,777,929	\$81,466,627

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 Excluding Richmond - Appendix A, Page 1, Column (F).
- (D) $1 - 1/(C)$.
- (E) From Pool Excluding Richmond - 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 without City of Richmond

Exposure and Development Method
Based on Paid Losses

Accident Year	Composite Exposure (A)	Paid Losses as of 9/30/15 (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)
1995-1996	1,921,652	2,033,428	1.001	0.001	0.824	1,583	2,035,011
1996-1997	1,960,938	1,876,897	1.002	0.002	1.033	4,051	1,880,948
1997-1998	2,067,748	3,851,532	1.002	0.002	1.455	6,017	3,857,549
1998-1999	2,211,260	4,069,196	1.003	0.003	1.709	11,337	4,080,533
1999-2000	2,277,792	2,495,245	1.005	0.005	1.339	15,250	2,510,495
2000-2001	2,471,548	3,372,352	1.007	0.007	1.109	19,187	3,391,539
2001-2002	2,533,806	2,116,036	1.009	0.009	1.065	24,287	2,140,323
2002-2003	2,242,130	3,220,024	1.012	0.012	1.487	40,009	3,260,033
2003-2004	2,540,302	2,210,245	1.015	0.015	0.962	36,657	2,246,902
2004-2005	2,589,740	3,113,942	1.019	0.019	0.817	40,201	3,154,143
2005-2006	2,686,200	4,952,800	1.024	0.023	1.692	104,536	5,057,336
2006-2007	2,841,165	5,874,898	1.034	0.033	1.340	125,636	6,000,534
2007-2008	3,086,346	5,249,453	1.050	0.048	1.301	192,736	5,442,189
2008-2009	3,156,538	2,659,755	1.072	0.067	0.914	193,300	2,853,055
2009-2010	3,011,714	5,697,601	1.108	0.097	1.725	503,935	6,201,536
2010-2011	2,855,340	4,182,498	1.157	0.136	1.712	664,815	4,847,313
2011-2012	2,737,412	4,981,669	1.275	0.216	1.750	1,034,742	6,016,411
2012-2013	2,591,421	1,430,586	1.581	0.367	1.787	1,699,529	3,130,115
2013-2014	2,587,782	1,565,385	2.822	0.646	1.828	3,055,881	4,621,266
2014-2015	2,644,655	356,629	7.770	0.871	1.870	4,307,535	4,664,164
Totals	52,936,030	\$67,736,216				\$12,083,596	\$79,819,812

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 Excluding Richmond - Appendix B, Page 1, Column (F).
- (D) $1 - 1/(C)$.
- (E) From Pool Excluding Richmond - 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 without City of Richmond

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)
1995-1996	1,921,652	1,133,828	1.089	1,234,739	0.643	0.590	1.397	0.824
1996-1997	1,960,938	1,430,014	1.084	1,550,135	0.791	0.729	1.417	1.033
1997-1998	2,067,748	2,091,721	1.079	2,256,967	1.092	1.012	1.438	1.455
1998-1999	2,211,260	2,588,886	1.075	2,783,052	1.259	1.171	1.459	1.709
1999-2000	2,277,792	2,057,287	1.070	2,201,297	0.966	0.903	1.483	1.339
2000-2001	2,471,548	1,820,084	1.066	1,940,210	0.785	0.736	1.507	1.109
2001-2002	2,533,806	1,760,695	1.061	1,868,097	0.737	0.695	1.532	1.065
2002-2003	2,242,130	2,141,098	1.057	2,263,141	1.009	0.955	1.557	1.487
2003-2004	2,540,302	1,542,158	1.052	1,622,350	0.639	0.607	1.585	0.962
2004-2005	2,589,740	1,313,942	1.048	1,377,011	0.532	0.507	1.611	0.817
2005-2006	2,686,200	2,772,583	1.043	2,891,804	1.077	1.032	1.640	1.692
2006-2007	2,841,165	2,280,213	1.039	2,369,141	0.834	0.803	1.669	1.340
2007-2008	3,086,346	2,363,000	1.035	2,445,705	0.792	0.766	1.698	1.301
2008-2009	3,156,538	1,670,000	1.030	1,720,100	0.545	0.529	1.728	0.914
2009-2010	3,011,714	2,950,000	1.026	3,026,700	1.005	0.980	1.760	1.725
2010-2011	2,855,340	2,157,000	1.021	2,202,297	0.771	0.955	1.792	1.712
2011-2012	2,737,412	2,696,000	1.017	2,741,832	1.002	0.959	1.824	1.750
2012-2013	2,591,421	2,098,000	1.013	2,125,274	0.820	0.962	1.858	1.787
2013-2014	2,587,782	2,618,000	1.009	2,641,562	1.021	0.966	1.893	1.828
2014-2015	2,644,655	3,027,000	1.004	3,039,108	1.149	0.971	1.926	1.870
Total/Avg	52,936,030	\$44,395,509		\$46,359,734	\$0.876			
09/10-13/14	13,783,669	12,519,000		12,737,665	\$0.924			
11/12-14/15	10,561,270	10,439,000		10,547,776	\$0.999			

Selected Limited Rate: \$0.975
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 Excluding Richmond - Appendix E, Column (B).
- (D) (B) x (C).
- (E) (D) / (A).
- (F) Selected Limited Rate / (C). For 2009-2010 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 without City of

Frequency and Severity Method

Accident Year	Ultimate Program Severity (A)	Ultimate Claims (B)	Ultimate Program Losses (C)
1995-1996	10,353	153	1,584,009
1996-1997	11,715	173	2,026,695
1997-1998	15,187	198	3,007,026
1998-1999	15,422	245	3,778,390
1999-2000	12,201	250	3,050,250
2000-2001	12,139	226	2,743,414
2001-2002	11,012	245	2,697,940
2002-2003	13,606	245	3,333,470
2003-2004	12,218	200	2,443,600
2004-2005	10,426	203	2,116,478
2005-2006	19,853	229	4,546,337
2006-2007	22,254	171	3,805,434
2007-2008	21,570	186	4,012,020
2008-2009	16,126	179	2,886,554
2009-2010	27,049	192	5,193,408
2010-2011	24,807	167	4,142,769
2011-2012	25,989	160	4,158,240
2012-2013	27,264	159	4,334,976
2013-2014	28,615	188	5,379,620
2014-2015	29,997	187	5,609,439
Total		4,159	\$73,221,718

Notes:

- (A) From Pool Excluding Richmond - Appendix D, Page 2, Column (H).
 (B) From Pool Excluding Richmond - 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 without City of Richmond

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)
1995-1996	1,133,828	153	7,411	1.806	13,384	7,411	1.397	10,353
1996-1997	1,430,014	173	8,266	1.754	14,499	8,266	1.417	11,715
1997-1998	2,091,721	198	10,564	1.702	17,980	10,564	1.438	15,187
1998-1999	2,588,886	245	10,567	1.653	17,467	10,567	1.459	15,422
1999-2000	2,057,287	250	8,229	1.605	13,208	8,229	1.483	12,201
2000-2001	1,820,084	226	8,053	1.558	12,547	8,053	1.507	12,139
2001-2002	1,760,695	245	7,187	1.513	10,874	7,187	1.532	11,012
2002-2003	2,141,098	245	8,739	1.469	12,838	8,739	1.557	13,606
2003-2004	1,542,158	200	7,711	1.426	10,996	7,711	1.585	12,218
2004-2005	1,313,942	203	6,473	1.384	8,959	6,473	1.611	10,426
2005-2006	2,772,583	229	12,107	1.344	16,272	12,107	1.640	19,853
2006-2007	2,280,213	171	13,335	1.305	17,402	13,335	1.669	22,254
2007-2008	2,363,000	186	12,704	1.267	16,096	12,704	1.698	21,570
2008-2009	1,670,000	179	9,330	1.230	11,476	9,330	1.728	16,126
2009-2010	2,950,000	192	15,365	1.194	18,346	15,365	1.760	27,049
2010-2011	2,159,000	167	12,928	1.159	14,984	13,840	1.792	24,807
2011-2012	2,696,000	160	16,850	1.126	18,973	14,245	1.824	25,989
2012-2013	2,103,000	159	13,226	1.093	14,456	14,675	1.858	27,264
2013-2014	2,614,000	188	13,904	1.061	14,752	15,118	1.893	28,615
2014-2015	2,952,000	187	15,786	1.030	16,260	15,573	1.926	29,997

Average Limited Severity \$14,716
Average 09/10-13/14 Limited Severity: \$16,302
Average 10/11-14/15 Limited Severity: \$15,885

Selected Limited Severity: \$16,100
Prior Selected Limited Severity: \$16,040

Notes:

- (A) Selected average of results from Appendices A, B, and C.
- (B) Pool Excluding Richmond - Appendix D, Page 3, Column (C).
- (C) (A) / (B).
- (D) From Pool Excluding Richmond - 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 without City of Richmond

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)
1995-1996	153	153	153	192.165	0.796	0.603	0.480
1996-1997	173	174	173	196.094	0.882	0.618	0.545
1997-1998	198	199	198	206.775	0.958	0.634	0.607
1998-1999	245	246	245	221.126	1.108	0.650	0.720
1999-2000	250	252	250	227.779	1.098	0.667	0.732
2000-2001	226	227	226	247.155	0.914	0.684	0.625
2001-2002	245	247	245	253.381	0.967	0.702	0.679
2002-2003	245	246	245	224.213	1.093	0.720	0.787
2003-2004	200	202	200	254.030	0.787	0.738	0.581
2004-2005	203	204	203	258.974	0.784	0.757	0.593
2005-2006	229	231	229	268.620	0.853	0.776	0.662
2006-2007	171	173	171	284.117	0.602	0.796	0.479
2007-2008	186	186	186	308.635	0.603	0.817	0.493
2008-2009	179	180	179	315.654	0.567	0.838	0.475
2009-2010	192	188	192	301.171	0.638	0.859	0.548
2010-2011	167	165	167	285.534	0.585	0.881	0.515
2011-2012	160	161	160	273.741	0.584	0.904	0.528
2012-2013	159	151	159	259.142	0.614	0.927	0.569
2013-2014	188	186	188	258.778	0.726	0.951	0.690
2014-2015	187	143	187	264.466	0.707	0.975	0.689
Total	4,159	4,116	4,159	5,293.603			0.596

(H) Selected 2015-2016 Frequency: 0.610
Prior Selected Frequency: 0.600

Program Year:	2015-2016	2016-2017
(I) Trend Factor:	1.000	0.975
(J) Selected Frequency:	0.610	0.595
(K) Composite Exposure:	287.555	290.431
(L) Ultimate Claims:	175	173

Notes:

- (A) From Pool Excluding Richmond - Appendix D, Page 4, (C)
- (B) From Pool Excluding Richmond - Appendix D, Page 5, (C)
- (C) Selected from (A) and (B).
- (D) From Pool Excluding Richmond - Appendix L, Page 2, (G).
- (E) (C) / (D).
- (F) From Pool Excluding Richmond - Appendix E.
- (G) (E) x (F).
- (H) The selected frequency of 0.610 is based on (G).
- (I) From Pool Excluding Richmond - Appendix E.
- (J) (H) x (I).
- (K) From Pool Excluding Richmond - 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 Excluding Richmond - Appendix L, Page 2, Item (G).

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Frequency and Severity Method
Reported Claim Count Development

Accident Year	Claims Reported as of 9/30/2015 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
1995-1996	153	1.000	153	0.480
1996-1997	173	1.000	173	0.545
1997-1998	198	1.000	198	0.607
1998-1999	245	1.000	245	0.720
1999-2000	250	1.000	250	0.732
2000-2001	226	1.000	226	0.625
2001-2002	245	1.000	245	0.679
2002-2003	245	1.000	245	0.787
2003-2004	200	1.000	200	0.581
2004-2005	203	1.000	203	0.593
2005-2006	229	1.000	229	0.662
2006-2007	171	1.000	171	0.479
2007-2008	186	1.000	186	0.492
2008-2009	179	1.000	179	0.475
2009-2010	192	1.000	192	0.548
2010-2011	167	1.000	167	0.515
2011-2012	160	0.997	160	0.528
2012-2013	160	0.991	159	0.569
2013-2014	194	0.967	188	0.691
2014-2015	257	0.728	187	0.689
Total	4,236		4,159	0.596

Notes:

- (A) Provided by the Authority.
- (B) From Pool Excluding Richmond - Appendix D, Page 6.
- (C) (A) x (B).
- (D) (C) / [Pool Excluding Richmond - Appendix D, Page 3, (D)] x [Pool Excluding Richmond - 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 without City of Richmond

Frequency and Severity Method
Closed Claim Count Development

Accident Year	Claims Closed as of 9/30/2015 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
1995-1996	153	1.002	153	0.480
1996-1997	173	1.003	174	0.548
1997-1998	198	1.004	199	0.610
1998-1999	245	1.005	246	0.723
1999-2000	250	1.006	252	0.738
2000-2001	225	1.007	227	0.628
2001-2002	245	1.008	247	0.684
2002-2003	244	1.009	246	0.790
2003-2004	200	1.010	202	0.587
2004-2005	202	1.011	204	0.596
2005-2006	228	1.012	231	0.667
2006-2007	171	1.013	173	0.485
2007-2008	183	1.014	186	0.492
2008-2009	177	1.015	180	0.478
2009-2010	184	1.020	188	0.536
2010-2011	160	1.031	165	0.509
2011-2012	151	1.064	161	0.532
2012-2013	134	1.124	151	0.540
2013-2014	149	1.245	186	0.684
2014-2015	93	1.533	143	0.527
Total	3,967		4,116	0.588

Notes:

- (A) Provided by the Authority.
- (B) From Pool Excluding Richmond - Appendix D, Page 7.
- (C) (A) x (B).
- (D) (C) / [Pool Excluding Richmond - Appendix D, Page 3, (D)] x [Pool Excluding Richmond - 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 without City of Richmond
Reported Claim Count Development

Claims Reported 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	135 Months	147 Months	159 Months
1994-1995	188	369	242	232	232	231	232	232	233	233	233	240	240	
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	
2004-2005	74	286	206	188	188	187	187	186	186	196	196	203		
2005-2006	78	320	229	229	231	228	228	228	229	229	229			
2006-2007	74	253	168	167	164	164	164	171	172	171				
2007-2008	92	242	188	183	183	182	185	186	186					
2008-2009	80	240	188	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									
2012-2013	53	231	167	160										
2013-2014	55	241	194											
2014-2015	40	257												
2015-2016	41													

Amounts Include All Locations Except Richmond

The 2012-13 diagonal is valued as of 10/31/12.

The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

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
1994-1995	1.963	0.656	0.959	1.000	0.996	1.004	1.000	1.004	1.000	1.000	1.030	1.000		
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		
2004-2005	3.865	0.720	0.913	1.000	0.995	1.000	0.995	1.000	1.054	1.000	1.036			
2005-2006	4.103	0.716	1.000	1.009	0.987	1.000	1.000	1.004	1.000	1.000				
2006-2007	3.419	0.664	0.994	0.982	1.000	1.000	1.043	1.006	0.994					
2007-2008	2.630	0.777	0.973	1.000	0.995	1.016	1.005	1.000						
2008-2009	3.000	0.783	0.952	1.000	1.000	1.000	1.000							
2009-2010	2.964	0.767	1.010	0.979	1.005	1.011								
2010-2011	3.051	0.714	0.971	0.994	1.018									
2011-2012	3.344	0.814	0.970	0.994										
2012-2013	4.358	0.723	0.958											
2013-2014	4.382	0.805												
2014-2015	6.425													
Average	3.481	0.741	0.974	0.996	1.000	1.005	1.003	1.003	1.004	1.001	1.007	1.001	1.001	1.000
Claim-weighted Averages														
3-yr	4.926	0.780	0.966	0.988	1.008	1.009	1.015	1.003	1.015	1.000	1.013	1.003	1.000	1.000
4-yr	4.464	0.763	0.978	0.991	1.004	1.007	1.011	1.003	1.011	1.001	1.009	1.002	1.001	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	3.500	0.750	0.975	0.995	0.995	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	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
Cumulated	2.723	0.728	0.967	0.991	0.997	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 without City of Richmond
 Closed Claim Count Development

Claims Closed 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	135 Months	147 Months	159 Months
1994-1995	47	119	170	215	223	226	228	229	231	231	231	238	240	
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	
2004-2005	18	154	177	173	180	185	185	185	185	195	195	202		
2005-2006	19	152	186	206	219	222	225	226	228	228	228			
2006-2007	22	98	119	133	148	159	161	171	171	171				
2007-2008	17	124	149	168	172	174	178	182	183					
2008-2009	19	130	150	165	172	177	177	177						
2009-2010	17	122	144	160	168	181	184							
2010-2011	16	113	131	141	155	160								
2011-2012	16	95	126	143	151									
2012-2013	11	93	117	134										
2013-2014	9	118	149											
2014-2015	6	93												
2015-2016	9													

Amounts Include All Locations Except Richmond
 The 2012-13 diagonal is valued as of 10/31/12.
 The 2013-14 and 2014-15 diagonal is valued as of 9/30/13.

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
1994-1995	2.532	1.429	1.265	1.037	1.013	1.009	1.004	1.009	1.000	1.000	1.030	1.008		
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	
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		
2004-2005	8.556	1.149	0.977	1.040	1.028	1.000	1.000	1.000	1.054	1.000	1.036			
2005-2006	8.000	1.224	1.108	1.063	1.014	1.014	1.004	1.009	1.000	1.000				
2006-2007	4.455	1.214	1.118	1.113	1.074	1.013	1.062	1.000	1.000					
2007-2008	7.294	1.202	1.128	1.024	1.012	1.023	1.022	1.005						
2008-2009	6.842	1.154	1.100	1.042	1.029	1.000	1.000							
2009-2010	7.176	1.180	1.111	1.050	1.077	1.017								
2010-2011	7.063	1.159	1.076	1.099	1.032									
2011-2012	5.938	1.326	1.135	1.056										
2012-2013	8.455	1.258	1.145											
2013-2014	13.111	1.263												
2014-2015	15.500													
Average	7.488	1.249	1.123	1.046	1.023	1.010	1.008	1.003	1.005	1.001	1.007	1.003	1.004	1.001
Claim-weighted Averages														
3-yr	11.692	1.281	1.118	1.068	1.046	1.013	1.027	1.005	1.017	1.000	1.011	1.003	1.001	1.000
4-yr	9.500	1.248	1.116	1.061	1.037	1.013	1.020	1.004	1.013	1.000	1.008	1.002	1.006	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	7.500	1.225	1.105	1.055	1.030	1.010	1.005	1.001	1.001	1.001	1.001	1.001	1.001	1.001
Selected	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
Cumulated	12.264	1.533	1.245	1.124	1.064	1.031	1.020	1.015	1.014	1.013	1.012	1.011	1.010	1.009

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Loss Trend Factors

Accident Year	Benefit Level Factor (A)	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to
		2015-2016 Loss Rate Level (B)	2016-2017 Loss Rate Level (C)	2017-2018 Loss Rate Level (D)	2018-2019 Loss Rate Level (E)	2015-2016 Frequency Level (F)	2016-2017 Frequency Level (G)	2017-2018 Frequency Level (H)	2018-2019 Frequency Level (I)	2015-2016 Severity Level (J)
Prior	1.000	1.093	1.098	1.102	1.107	0.588	0.573	0.559	0.545	1.860
1995-1996	1.000	1.089	1.093	1.098	1.102	0.603	0.588	0.573	0.559	1.806
1996-1997	1.000	1.084	1.089	1.093	1.098	0.618	0.603	0.588	0.573	1.754
1997-1998	1.000	1.079	1.084	1.089	1.093	0.634	0.618	0.603	0.588	1.702
1998-1999	1.000	1.075	1.079	1.084	1.089	0.650	0.634	0.618	0.603	1.653
1999-2000	1.000	1.070	1.075	1.079	1.084	0.667	0.650	0.634	0.618	1.605
2000-2001	1.000	1.066	1.070	1.075	1.079	0.684	0.667	0.650	0.634	1.558
2001-2002	1.000	1.061	1.066	1.070	1.075	0.702	0.684	0.667	0.650	1.513
2002-2003	1.000	1.057	1.061	1.066	1.070	0.720	0.702	0.684	0.667	1.469
2003-2004	1.000	1.052	1.057	1.061	1.066	0.738	0.720	0.702	0.684	1.426
2004-2005	1.000	1.048	1.052	1.057	1.061	0.757	0.738	0.720	0.702	1.384
2005-2006	1.000	1.043	1.048	1.052	1.057	0.776	0.757	0.738	0.720	1.344
2006-2007	1.000	1.039	1.043	1.048	1.052	0.796	0.776	0.757	0.738	1.305
2007-2008	1.000	1.035	1.039	1.043	1.048	0.817	0.796	0.776	0.757	1.267
2008-2009	1.000	1.030	1.035	1.039	1.043	0.838	0.817	0.796	0.776	1.230
2009-2010	1.000	1.026	1.030	1.035	1.039	0.859	0.838	0.817	0.796	1.194
2010-2011	1.000	1.021	1.026	1.030	1.035	0.881	0.859	0.838	0.817	1.159
2011-2012	1.000	1.017	1.021	1.026	1.030	0.904	0.881	0.859	0.838	1.126
2012-2013	1.000	1.013	1.017	1.021	1.026	0.927	0.904	0.881	0.859	1.093
2013-2014	1.000	1.009	1.013	1.017	1.021	0.951	0.927	0.904	0.881	1.061
2014-2015	1.000	1.004	1.009	1.013	1.017	0.975	0.951	0.927	0.904	1.030
2015-2016	1.000	1.000	1.004	1.009	1.013	1.000	0.975	0.951	0.927	1.000
2016-2017	1.000	--	1.000	1.004	1.009	--	1.000	0.975	0.951	0.971
2017-2018	1.000	--	--	1.000	1.004	--	--	1.000	0.975	--
2018-2019	1.000	--	--	--	1.000	--	--	--	1.000	--

Notes:

- (A) No benefit level adjustment applied.
- (B) - (E) (A) adjusted for a 0.4% annual loss rate trend.
- (F) - (I) (A) adjusted for a -2.5% annual frequency trend.
- (J) (A) adjusted for a 3.0% 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 without City of Richmond

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>9/30/2015</u>	<u>Calendar Period</u>	
		<u>10/1/2015</u> <u>to</u> <u>6/30/2016</u>	<u>7/1/2016</u> <u>to</u> <u>6/30/2017</u>
Prior			
Ultimate Loss	\$10,010,425	\$10,010,425	\$10,010,425
Paid in Calendar Period	-	13,642	6,821
Paid to Date	9,983,140	9,996,782	10,003,603
Outstanding Liability	27,285	13,643	6,822
1999-2000			
Ultimate Loss	\$1,578,685	\$1,578,685	\$1,578,685
Paid in Calendar Period	-		
Paid to Date	1,578,685	1,578,685	1,578,685
Outstanding Liability			
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			
2001-2002			
Ultimate Loss	\$1,204,036	\$1,204,036	\$1,204,036
Paid in Calendar Period	-	2	3
Paid to Date	1,204,025	1,204,027	1,204,030
Outstanding Liability	11	9	6
2002-2003			
Ultimate Loss	\$2,216,597	\$2,216,597	\$2,216,597
Paid in Calendar Period	-	47,021	70,911
Paid to Date	1,931,621	1,978,642	2,049,553
Outstanding Liability	284,976	237,955	167,044
2003-2004			
Ultimate Loss	\$1,363,245	\$1,363,245	\$1,363,245
Paid in Calendar Period	-	23	34
Paid to Date	1,363,073	1,363,096	1,363,130
Outstanding Liability	172	149	115
2004-2005			
Ultimate Loss	\$2,398,585	\$2,398,585	\$2,398,585
Paid in Calendar Period	-	9	9
Paid to Date	2,398,527	2,398,536	2,398,545
Outstanding Liability	58	49	40

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>9/30/2015</u>	<u>Calendar Period</u>	
		<u>10/1/2015</u> <u>to</u> <u>6/30/2016</u>	<u>7/1/2016</u> <u>to</u> <u>6/30/2017</u>
2005-2006			
Ultimate Loss	\$3,891,000	\$3,891,000	\$3,891,000
Paid in Calendar Period	-	1,628	1,646
Paid to Date	3,881,015	3,882,643	3,884,289
Outstanding Liability	9,985	8,357	6,711
2006-2007			
Ultimate Loss	\$4,659,000	\$4,659,000	\$4,659,000
Paid in Calendar Period	-	594	452
Paid to Date	4,656,404	4,656,998	4,657,450
Outstanding Liability	2,596	2,002	1,550
2007-2008			
Ultimate Loss	\$4,490,000	\$4,490,000	\$4,490,000
Paid in Calendar Period	-	84,889	87,039
Paid to Date	4,122,515	4,207,404	4,294,443
Outstanding Liability	367,485	282,596	195,557
2008-2009			
Ultimate Loss	\$1,959,000	\$1,959,000	\$1,959,000
Paid in Calendar Period	-	16,123	16,644
Paid to Date	1,887,024	1,903,147	1,919,791
Outstanding Liability	71,976	55,853	39,209
2009-2010			
Ultimate Loss	\$5,030,000	\$5,030,000	\$5,030,000
Paid in Calendar Period	-	160,067	161,991
Paid to Date	4,337,069	4,497,136	4,659,127
Outstanding Liability	692,931	532,864	370,873
2010-2011			
Ultimate Loss	\$4,186,000	\$4,186,000	\$4,186,000
Paid in Calendar Period	-	185,171	209,675
Paid to Date	3,304,234	3,489,405	3,699,080
Outstanding Liability	881,766	696,595	486,920
2011-2012			
Ultimate Loss	\$5,159,000	\$5,159,000	\$5,159,000
Paid in Calendar Period	-	396,876	318,967
Paid to Date	3,736,507	4,133,383	4,452,350
Outstanding Liability	1,422,493	1,025,617	706,650

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>9/30/2015</u>	<u>Calendar Period</u>	
		<u>10/1/2015</u> <u>to</u> <u>6/30/2016</u>	<u>7/1/2016</u> <u>to</u> <u>6/30/2017</u>
2012-2013			
Ultimate Loss	\$1,788,000	\$1,788,000	\$1,788,000
Paid in Calendar Period	-	412,745	356,452
Paid to Date	456,564	869,309	1,225,761
Outstanding Liability	1,331,436	918,691	562,239
2013-2014			
Ultimate Loss	\$3,547,000	\$3,547,000	\$3,547,000
Paid in Calendar Period	-	878,048	771,114
Paid to Date	828,584	1,706,632	2,477,746
Outstanding Liability	2,718,416	1,840,368	1,069,254
2014-2015			
Ultimate Loss	\$2,603,000	\$2,603,000	\$2,603,000
Paid in Calendar Period	-	494,410	776,447
Paid to Date	54,497	548,907	1,325,354
Outstanding Liability	2,548,503	2,054,093	1,277,646
2015-2016			
Ultimate Loss	\$972,000	\$3,887,000	\$3,887,000
Paid in Calendar Period	-	349,830	781,715
Paid to Date	-	349,830	1,131,545
Outstanding Liability	972,000	3,537,170	2,755,455
2016-2017			
Ultimate Loss	-	-	\$4,034,000
Paid in Calendar Period	-	-	399,366
Paid to Date	-	-	399,366
Outstanding Liability	-	-	3,634,634
Totals			
Ultimate Loss	\$59,535,714	\$62,450,714	\$66,484,714
Paid in Calendar Period	-	3,041,078	3,959,286
Paid to Date	48,203,626	51,244,704	55,203,990
Outstanding Liability	11,332,088	11,206,010	11,280,724
Total Outstanding ULAE	0	0	0
Outstanding Liability plus ULAE	11,332,088	11,206,010	11,280,724

Notes appear on the next page.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

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 2013-2014, \$878,048 is expected to be paid between 10/1/15 and 6/30/16, \$1,706,632 will have been paid by 6/30/16, and the reserve for remaining payments on these claims should be \$1,840,368.
- Ultimate Losses for each accident year are from Pool Excluding Richmond - 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, $\$771,114 = \$1,840,368 \times 41.9\%$.
- Paid to Date is Paid in Calendar Period plus Paid to Date from previous calendar period. For example, $\$2,477,746 = \$771,114 + \$1,706,632$.
- Outstanding Liability is Ultimate Loss minus Paid to Date. For example, $\$1,840,368 = \$3,547,000 - \$1,706,632$.

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 without City of Richmond

Short- and Long-Term Liabilities

<u>Liabilities as of 9/30/15:</u>		<u>Expected</u>	<u>Discounted</u>
<u>Current (Short Term)</u>	Loss and ALAE:	\$2,691,248	\$2,664,733
	ULAE:	0	0
	Short-Term Loss and LAE:	<u>\$2,691,248</u>	<u>\$2,664,733</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$8,640,840	\$8,088,539
	ULAE:	0	0
	Long-Term Loss and LAE:	<u>\$8,640,840</u>	<u>\$8,088,539</u>
<u>Total Liability</u>	Loss and ALAE:	\$11,332,088	\$10,753,272
	ULAE:	0	0
	Total Loss and LAE:	<u>\$11,332,088</u>	<u>\$10,753,272</u>
<u>Liabilities as of 6/30/16:</u>			
<u>Current (Short Term)</u>	Loss and ALAE:	\$3,559,920	\$3,524,846
	ULAE:	0	0
	Short-Term Loss and LAE:	<u>\$3,559,920</u>	<u>\$3,524,846</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$7,646,090	\$7,113,113
	ULAE:	0	0
	Long-Term Loss and LAE:	<u>\$7,646,090</u>	<u>\$7,113,113</u>
<u>Total Liability</u>	Loss and ALAE:	\$11,206,010	\$10,637,959
	ULAE:	0	0
	Total Loss and LAE:	<u>\$11,206,010</u>	<u>\$10,637,959</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 9/30/15:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$2,965,848	\$3,096,420	\$3,250,974	\$3,442,835	\$3,701,314
	ULAE:	0	0	0	0	0
	Short-Term Loss and LAE:	<u>\$2,965,848</u>	<u>\$3,096,420</u>	<u>\$3,250,974</u>	<u>\$3,442,835</u>	<u>\$3,701,314</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$9,002,544	\$9,398,882	\$9,868,018	\$10,450,392	\$11,234,981
	ULAE:	0	0	0	0	0
	Long-Term Loss and LAE:	<u>\$9,002,544</u>	<u>\$9,398,882</u>	<u>\$9,868,018</u>	<u>\$10,450,392</u>	<u>\$11,234,981</u>
<u>Total Liability</u>	Loss and ALAE:	\$11,968,392	\$12,495,302	\$13,118,992	\$13,893,227	\$14,936,295
	ULAE:	0	0	0	0	0
	Total Loss and LAE:	<u>\$11,968,392</u>	<u>\$12,495,302</u>	<u>\$13,118,992</u>	<u>\$13,893,227</u>	<u>\$14,936,295</u>
<u>Liabilities as of 6/30/16:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$3,923,154	\$4,095,871	\$4,300,312	\$4,554,101	\$4,896,011
	ULAE:	0	0	0	0	0
	Short-Term Loss and LAE:	<u>\$3,923,154</u>	<u>\$4,095,871</u>	<u>\$4,300,312</u>	<u>\$4,554,101</u>	<u>\$4,896,011</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$7,916,894	\$8,265,437	\$8,677,998	\$9,190,142	\$9,880,114
	ULAE:	0	0	0	0	0
	Long-Term Loss and LAE:	<u>\$7,916,894</u>	<u>\$8,265,437</u>	<u>\$8,677,998</u>	<u>\$9,190,142</u>	<u>\$9,880,114</u>
<u>Total Liability</u>	Loss and ALAE:	\$11,840,048	\$12,361,308	\$12,978,310	\$13,744,243	\$14,776,125
	ULAE:	0	0	0	0	0
	Total Loss and LAE:	<u>\$11,840,048</u>	<u>\$12,361,308</u>	<u>\$12,978,310</u>	<u>\$13,744,243</u>	<u>\$14,776,125</u>

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Discount Factors to be Applied to Overall Reserves

Accident Year	Full Value of Reserve at 9/30/15 (A)	Discount Factor (B)	Discounted Reserve at 9/30/15 (C)	Full Value of Reserve at 6/30/16 (D)	Discount Factor (E)	Discounted Reserve at 6/30/16 (F)
2005-2006	9,985	0.933	9,316	8,357	0.934	7,809
2006-2007	2,596	0.935	2,427	2,002	0.932	1,867
2007-2008	367,485	0.938	344,661	282,596	0.936	264,491
2008-2009	71,976	0.940	67,679	55,853	0.939	52,420
2009-2010	692,931	0.942	652,653	532,864	0.941	501,372
2010-2011	881,766	0.943	831,671	696,595	0.942	656,330
2011-2012	1,422,493	0.948	1,348,042	1,025,617	0.944	967,688
2012-2013	1,331,436	0.953	1,269,010	918,691	0.949	871,878
2013-2014	2,718,416	0.955	2,597,042	1,840,368	0.954	1,756,576
2014-2015	2,548,503	0.950	2,421,601	2,054,093	0.956	1,962,983
2015-2016	972,000	0.939	912,539	3,537,170	0.948	3,354,624
Totals	\$11,332,088		\$10,753,272	\$11,206,010		\$10,637,959

(G) Discount Factor at 9/30/15 for Overall Reserve: 0.949
(H) Discount Factor at 6/30/16 for Overall Reserve: 0.949

Notes:

- (A) From Pool Excluding Richmond - Appendix F, Outstanding Liability at 9/30/15.
- (B) Based on Pool Excluding Richmond - Appendix H, Page 2, Column (E).
- (C) (A) x (B).
- (D) From Pool Excluding Richmond - Appendix F, Outstanding Liability at 6/30/16.
- (E) Based on Pool Excluding Richmond - 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 0.949, the discounted liability for outstanding claims is 94.9% of the full value.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

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	0.0%	0.001	0.001	0.971
20	0.1%	0.002	0.002	0.971
19	0.0%	0.002	0.002	0.952
18	0.2%	0.004	0.004	0.962
17	0.2%	0.006	0.006	0.958
16	0.3%	0.009	0.009	0.956
15	0.3%	0.011	0.012	0.951
14	0.3%	0.014	0.015	0.944
13	0.4%	0.017	0.019	0.939
12	0.5%	0.022	0.023	0.934
11	0.7%	0.028	0.030	0.932
10	1.2%	0.039	0.042	0.936
9	1.7%	0.056	0.059	0.939
8	2.5%	0.079	0.084	0.941
7	3.5%	0.112	0.119	0.942
6	5.0%	0.160	0.169	0.944
5	9.9%	0.255	0.268	0.949
4	18.1%	0.429	0.449	0.954
3	25.9%	0.677	0.708	0.956
2	19.5%	0.857	0.903	0.948
1	9.7%	0.936	1.000	0.936
(F) Discount Factor for Future Funding:				0.945
* 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 Excluding Richmond - 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, 85.7% = $[67.7\% / 1.020] + [19.5\% / (1.010)]$.
- (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 - Pooled Layer

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	0.5%	0.017	0.019	0.937
7	0.8%	0.025	0.026	0.939
6	1.7%	0.041	0.043	0.948
5	5.9%	0.099	0.102	0.965
4	17.2%	0.267	0.274	0.974
3	31.3%	0.572	0.587	0.973
2	25.9%	0.817	0.846	0.965
1	15.3%	0.952	0.999	0.953
(F) Discount Factor for Future Funding:				0.963
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - Pooled Layer

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	0.6%	0.020	0.021	0.937
7	0.9%	0.028	0.030	0.939
6	1.9%	0.047	0.049	0.948
5	6.7%	0.112	0.117	0.964
4	19.2%	0.300	0.308	0.973
3	33.0%	0.621	0.639	0.973
2	24.5%	0.852	0.884	0.964
1	11.5%	0.949	0.999	0.950
(F) Discount Factor for Future Funding:				0.960
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - Pooled Layer

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	0.7%	0.024	0.026	0.937
7	1.1%	0.034	0.037	0.939
6	2.3%	0.057	0.060	0.948
5	8.0%	0.135	0.140	0.964
4	22.2%	0.352	0.362	0.973
3	34.9%	0.690	0.710	0.972
2	21.6%	0.891	0.926	0.961
1	7.2%	0.945	0.999	0.946
(F) Discount Factor for Future Funding:				0.955
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - Pooled Layer

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	1.5%	0.055	0.059	0.936
7	2.4%	0.078	0.083	0.938
6	5.0%	0.126	0.133	0.947
5	16.2%	0.284	0.295	0.962
4	35.1%	0.626	0.646	0.969
3	29.5%	0.906	0.941	0.962
2	5.4%	0.941	0.995	0.946
1	0.2%	0.925	0.997	0.928
(F) Discount Factor for Future Funding:				0.937
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - Pooled Layer

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	3.1%	0.118	0.127	0.935
7	4.8%	0.163	0.174	0.937
6	9.7%	0.256	0.271	0.944
5	26.8%	0.516	0.539	0.958
4	35.7%	0.860	0.896	0.959
3	9.5%	0.937	0.991	0.945
2	0.2%	0.920	0.993	0.927
1	0.0%	0.902	0.993	0.909
(F) Discount Factor for Future Funding:				0.918
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - Pooled Layer

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	2.9%	0.107	0.114	0.935
7	4.4%	0.148	0.158	0.937
6	8.9%	0.233	0.247	0.945
5	25.4%	0.480	0.501	0.959
4	37.0%	0.836	0.870	0.961
3	12.0%	0.939	0.990	0.948
2	0.3%	0.924	0.994	0.930
1	0.0%	0.906	0.994	0.911
(F) Discount Factor for Future Funding:				0.921
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - Pooled Layer
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	2.9%	0.107	0.114	0.935
7	4.4%	0.148	0.158	0.937
6	8.9%	0.233	0.247	0.945
5	25.4%	0.480	0.501	0.959
4	37.0%	0.836	0.870	0.961
3	12.0%	0.939	0.990	0.948
2	0.3%	0.924	0.994	0.930
1	0.0%	0.906	0.994	0.911
(F) Discount Factor for Future Funding:				0.921
* Assumed Investment Rate:				2.0%

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Confidence Level Table

Probability	Projected Losses	Outstanding Losses
95%	1.915	1.554
90	1.641	1.389
85	1.476	1.292
80	1.353	1.220
75	1.255	1.162
70	1.171	1.113
65	1.098	1.070
60	1.032	1.031
55	0.972	0.995
50	0.914	0.960
45	0.860	0.928
40	0.807	0.896
35	0.755	0.864
30	0.703	0.831
25	0.650	0.798

To read table: For the above retention, there is a 90% chance that final loss settlements will be less than 1.641 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 without City of Richmond

Program History

Policy Year Start Date	Policy Year End Date	Policy Year	Self-Insured Retention	
			Per Occurrence	Aggregate
7/1/1995	6/30/1996	1995-1996	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)

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Incurred Losses as of 9/30/15

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 to SIR Layer \$100,000 (I)	Incurred Capped at SIR (J)	Incurred Capped at SIR & Aggregate (K)
Prior	\$2,453,330	\$0	\$0	\$2,453,330	\$0	\$569,351	\$1,883,979	\$569,351	\$2,453,330	\$2,453,330
1995-1996	2,033,428	0	0	2,033,428	0	899,600	1,133,828	899,600	2,033,428	2,033,428
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	3,056,850	315,503	0	3,372,353	0	1,552,269	1,820,084	1,552,269	3,372,353	3,372,353
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	3,406,392	98,476	0	3,504,868	0	1,363,770	2,141,098	1,363,770	3,504,868	3,504,868
2003-2004	2,210,245	0	0	2,210,245	0	668,087	1,542,158	668,087	2,210,245	2,210,245
2004-2005	3,143,983	0	0	3,143,983	30,042	1,830,042	1,313,942	1,800,000	3,113,942	3,113,942
2005-2006	4,962,763	0	0	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	5,611,225	0	0	5,611,225	0	3,250,985	2,360,240	3,250,985	5,611,225	5,611,225
2008-2009	2,718,177	0	0	2,718,177	0	1,051,285	1,666,892	1,051,285	2,718,177	2,718,177
2009-2010	6,352,183	0	0	6,352,183	0	3,411,428	2,940,755	3,411,428	6,352,183	6,352,183
2010-2011	4,945,671	0	0	4,945,671	0	2,796,885	2,148,787	2,796,885	4,945,671	4,945,671
2011-2012	6,200,194	0	0	6,200,194	1,658	3,528,012	2,672,182	3,526,354	6,198,536	6,198,536
2012-2013	2,752,084	0	0	2,752,084	0	713,401	2,038,683	713,401	2,752,084	2,752,084
2013-2014	3,857,997	0	0	3,857,997	0	1,420,772	2,437,225	1,420,772	3,857,997	3,857,997
2014-2015	2,317,888	0	0	2,317,888	0	282,501	2,035,387	282,501	2,317,888	2,317,888
2015-2016	626,956	0	0	626,956	0	404,561	222,396	404,561	626,956	626,956
Total	\$73,701,156	\$3,646,196	\$0	\$77,347,352	\$31,700	\$34,008,319	\$43,339,033	\$33,976,620	\$77,315,653	\$77,315,653

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) No adjustments were made.
- (E) (B) + (C) + (D).
- (F) Sum of incurred losses in excess of SIR.
- (G) Sum of incurred losses in excess of \$100,000.
- (H) (E) - (G).
- (I) (G) - (F).
- (J) (E) - (F).
- (K) Minimum of (J) and the aggregate stop loss. See Pool Excluding Richmond - Appendix J.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Paid Losses as of 9/30/15

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	\$2,426,045	\$0	\$0	\$2,426,045	\$0	\$569,351	\$1,856,694	\$569,351	\$2,426,045	\$2,426,045
1995-1996	2,033,428	0	0	2,033,428	0	899,600	1,133,828	899,600	2,033,428	2,033,428
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	3,121,549	98,476	0	3,220,024	0	1,079,420	2,140,604	1,079,420	3,220,024	3,220,024
2003-2004	2,210,245	0	0	2,210,245	0	668,087	1,542,158	668,087	2,210,245	2,210,245
2004-2005	3,143,983	0	0	3,143,983	30,042	1,830,042	1,313,942	1,800,000	3,113,942	3,113,942
2005-2006	4,952,800	0	0	4,952,800	0	2,180,217	2,772,583	2,180,217	4,952,800	4,952,800
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	5,249,453	0	0	5,249,453	0	2,935,719	2,313,733	2,935,719	5,249,453	5,249,453
2008-2009	2,659,755	0	0	2,659,755	0	1,051,186	1,608,569	1,051,186	2,659,755	2,659,755
2009-2010	5,697,601	0	0	5,697,601	0	2,817,995	2,879,606	2,817,995	5,697,601	5,697,601
2010-2011	4,182,498	0	0	4,182,498	0	2,092,425	2,090,073	2,092,425	4,182,498	4,182,498
2011-2012	4,983,327	0	0	4,983,327	1,658	2,474,812	2,508,516	2,473,154	4,981,669	4,981,669
2012-2013	1,430,586	0	0	1,430,586	0	107,583	1,323,002	107,583	1,430,586	1,430,586
2013-2014	1,565,385	0	0	1,565,385	0	281,864	1,283,522	281,864	1,565,385	1,565,385
2014-2015	356,629	0	0	356,629	0	0	356,629	0	356,629	356,629
2015-2016	24,287	0	0	24,287	0	0	24,287	0	24,287	24,287
Total	\$64,146,006	\$3,646,196	\$0	\$67,792,202	\$31,700	\$28,615,612	\$39,176,591	\$28,583,912	\$67,760,503	\$67,760,503

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) No adjustments were made.
- (E) (B) + (C) + (D).
- (F) Sum of paid losses in excess of SIR.
- (G) Sum of paid losses in excess of \$100,000.
- (H) (E) - (G).
- (I) (G) - (F).
- (J) (E) - (F).
- (K) Minimum of (J) and the aggregate stop loss. See Pool Excluding Richmond - Appendix J.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Case Reserves as of 9/30/15

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	\$27,285	\$0	\$0	\$27,285	\$0	\$0	\$27,285	\$0	\$27,285	\$27,285
1995-1996	0	0	0	0	0	0	0	0	0	0
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	1	0	0	1	0	0	1	0	1	1
2001-2002	0	0	0	0	0	0	0	0	0	0
2002-2003	284,844	0	0	284,844	0	284,349	494	284,349	284,844	284,844
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	9,963	0	0	9,963	0	9,963	0	9,963	9,963	9,963
2006-2007	204	0	0	204	0	150	54	150	204	204
2007-2008	361,772	0	0	361,772	0	315,265	46,507	315,265	361,772	361,772
2008-2009	58,421	0	0	58,421	0	99	58,322	99	58,421	58,421
2009-2010	654,581	0	0	654,581	0	593,433	61,149	593,433	654,581	654,581
2010-2011	763,174	0	0	763,174	0	704,460	58,714	704,460	763,174	763,174
2011-2012	1,216,866	0	0	1,216,866	0	1,053,200	163,666	1,053,200	1,216,866	1,216,866
2012-2013	1,321,498	0	0	1,321,498	0	605,818	715,681	605,818	1,321,498	1,321,498
2013-2014	2,292,612	0	0	2,292,612	0	1,138,909	1,153,703	1,138,909	2,292,612	2,292,612
2014-2015	1,961,259	0	0	1,961,259	0	282,501	1,678,758	282,501	1,961,259	1,961,259
2015-2016	602,669	0	0	602,669	0	404,561	198,109	404,561	602,669	602,669
Total	\$9,555,150	\$0	\$0	\$9,555,150	\$0	\$5,392,708	\$4,162,442	\$5,392,708	\$9,555,150	\$9,555,150

Notes:

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

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

Claim Counts as of 9/30/15

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	203	0	0	203	202	0	0	202	1	1
1995-1996	153	0	0	153	153	0	0	153	0	0
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	187	39	0	226	186	39	0	225	1	1
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	200	0	0	200	200	0	0	200	0	0
2004-2005	203	0	0	203	202	0	0	202	1	1
2005-2006	229	0	0	229	228	0	0	228	1	1
2006-2007	171	0	0	171	171	0	0	171	0	0
2007-2008	186	0	0	186	183	0	0	183	3	3
2008-2009	179	0	0	179	177	0	0	177	2	2
2009-2010	192	0	0	192	184	0	0	184	8	8
2010-2011	167	0	0	167	160	0	0	160	7	7
2011-2012	160	0	0	160	151	0	0	151	9	9
2012-2013	160	0	0	160	134	0	0	134	26	26
2013-2014	194	0	0	194	149	0	0	149	45	45
2014-2015	257	0	0	257	93	0	0	93	164	164
2015-2016	41	0	0	41	9	0	0	9	32	32
Total	4,071	206	0	4,277	3,770	206	0	3,976	301	301

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) No adjustments were made.
- (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) No adjustments were made.
- (I) (F) + (G) + (H).
- (J) (B) - (F).
- (K) (E) - (I).

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

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			1,143,860				1.679
1995-1996			1,173,170				1.638
1996-1997			1,227,120				1.598
1997-1998			1,326,330				1.559
1998-1999			1,453,820				1.521
1999-2000			1,534,900				1.484
2000-2001			1,706,870				1.448
2001-2002			1,793,210				1.413
2002-2003			1,625,910				1.379
2003-2004			1,888,700				1.345
2004-2005			1,973,887				1.312
2005-2006			2,098,594				1.280
2006-2007			2,274,752				1.249
2007-2008			2,531,867				1.219
2008-2009			2,654,784				1.189
2009-2010			2,596,305				1.160
2010-2011			2,522,385				1.132
2011-2012			2,479,540				1.104
2012-2013			2,406,148				1.077
2013-2014			2,462,209				1.051
2014-2015			2,580,151				1.025
2015-2016			2,875,554				1.000
2016-2017			2,904,310				1.000

Notes: All exposure data provided by the Authority.

Municipal Pooling Authority - Liability - 100K & SIR Analyses without City of Richmond

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			1,920,541				1,920,541
1995-1996			1,921,652				1,921,652
1996-1997			1,960,938				1,960,938
1997-1998			2,067,748				2,067,748
1998-1999			2,211,260				2,211,260
1999-2000			2,277,792				2,277,792
2000-2001			2,471,548				2,471,548
2001-2002			2,533,806				2,533,806
2002-2003			2,242,130				2,242,130
2003-2004			2,540,302				2,540,302
2004-2005			2,589,740				2,589,740
2005-2006			2,686,200				2,686,200
2006-2007			2,841,165				2,841,165
2007-2008			3,086,346				3,086,346
2008-2009			3,156,538				3,156,538
2009-2010			3,011,714				3,011,714
2010-2011			2,855,340				2,855,340
2011-2012			2,737,412				2,737,412
2012-2013			2,591,421				2,591,421
2013-2014			2,587,782				2,587,782
2014-2015			2,644,655				2,644,655
2015-2016			2,875,554				2,875,554
2016-2017			2,904,310				2,904,310
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)).