

Monterey Bay Area Self Insurance Authority

**An Actuarial Review of the
Liability Self-Insurance Program**

DRAFT

**BAY ACTUARIAL CONSULTANTS
Moraga, California
April 3, 2013**

Bay Actuarial Consultants

April 3, 2013

Mr. Michael Simmons
Vice Chairman
Alliant Insurance Services
100 Pine Street, 11th Floor
San Francisco, CA 94111

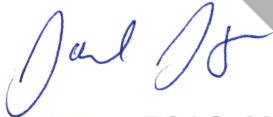
Dear Mr. Simmons:

We are pleased to present Bay Actuarial's Actuarial Review of the Monterey Bay Area Self Insurance Authority's General and Auto Liability self-insurance program. We appreciate the opportunity to serve the Authority.

If you have any questions, please call me at (925) 377-5269.

Respectfully,

BAY ACTUARIAL CONSULTANTS



Jack Joyce, FCAS, MAAA
Principal

Monterey Bay Area Self Insurance Authority

An Actuarial Review of the Liability Self-Insurance Program

Table of Contents

	<u>Page</u>
Introduction	2
<i>Background & Purpose</i>	3
<i>Conditions & Limitations</i>	4
<i>Organization of the Report</i>	4
Management Summary	5
<i>Projected 2013-14 Losses and Loss Rates</i>	6
<i>The Authority's Past Rates of Loss</i>	7
<i>Loss Frequency</i>	8
<i>Average Loss Amount</i>	8
<i>Liability for Unpaid Losses – 6/30/13</i>	9
<i>ULAE Liability</i>	9
<i>Comparison with 2012 Estimates</i>	10
<i>Reconciling the 12/31/11 & 12/31/12 Liabilities</i>	10
<i>Loss Breakout as of 6/30/13</i>	11
<i>Short-Term Liability</i>	11
<i>Alternative Interest Rates</i>	11
<i>The EPL 500x500 Layer</i>	12
Technical Approach	13
Summary Exhibits	16
Fiscal Year End Exhibits	21
Loss Projection Exhibits	29
\$250,000 Limit Loss Exhibits	43
Future Loss Exhibits	50
Discounting Exhibits	54
Deductibles Exhibits	58
Claims Data	62

Monterey Bay Area Self Insurance Authority

An Actuarial Review of the Liability Self-Insurance Program

Introduction

DRAFT

Monterey Bay Area Self Insurance Authority

An Actuarial Review of the Liability Self-Insurance Program

Introduction

Background & Purpose

The Monterey Bay Area Self Insurance Authority (“MBASIA”) self-insures its general and auto liability claims. The Authority has asked Bay Actuarial Consultants to provide an actuarial report on its liability self-insurance program. The specific topics covered in this report include the following:

- 1) **Projected 2013-14 Loss Rate.** A projection of the losses expected to be incurred during 2013-14, expressed in terms of a rate of loss per \$100 of payroll.
- 2) **Unpaid Losses.** We projected the Authority’s liability for unpaid losses as of June 30, 2013.
- 3) **Discounting.** We have also discounted the projected 2013-14 losses and the liabilities to present value, assuming a 1% interest rate. The discounted estimates take into account the time value of money as general and auto liability costs discharge over an extended timeframe.
- 4) **Variability of Estimates.** We have included an analysis of items (1) and (2) above, in terms of “probability levels.”
- 5) **Short-Term versus Long-Term.** We have broken out the liabilities into their short-term and long-term components.

Conditions & Limitations

This report has been prepared for the Authority's internal use. Copies of this report may be provided to the Authority's auditors. Any other use of this report is not authorized without the prior written permission of Bay Actuarial. In particular, those interested in providing insurance to the Authority must perform their own actuarial analysis and may not rely upon our work.

In this report, we relied upon loss data provided by Risk Management Services and payroll information provided by Alliant Insurance Services. We have not audited this data and are not responsible for its accuracy. With any actuarial analysis, the accuracy and relevance of the conclusions, and the reasonableness of the recommendations, depend upon the accuracy and relevance of the underlying data.

Unless otherwise noted, the term "losses" refers to all costs that can be tied to specific claims. These include loss payments, attorney's fees, and other expenses linked to specific claims.

The actuarial projections in this report are estimates so they are uncertain. This uncertainty is unavoidable because many of the events that will determine future claims costs have not yet taken place. These events include, but are not limited to, future legislation that may affect the tort liability system, changes in the rate of inflation, and the outcomes of current and future litigation and settlement negotiations. Our projections are based upon the Authority's historical experience. We have not anticipated any extraordinary changes in the various factors that might affect the future cost of claims. We used actuarial methods that should produce reasonable results given current information. There is no guarantee, express or implied, that losses will develop as projected in this report.

Organization of the Report

We have divided the remainder of this report into seven sections: the *Management Summary*, the *Technical Approach* section, the *Summary Exhibits*, the *Fiscal Year End Exhibits*, the *Loss Projection Exhibits*, the *Future Loss Exhibits*, and the *Discounting Exhibits*.

The *Management Summary* gives an overview of the results of our analysis. The *Technical Approach* section explains and discusses the assumptions and details underlying our calculations. The *Exhibits* document the actual calculations used in developing our results.

Monterey Bay Area Self Insurance Authority

An Actuarial Review of the Liability Self-Insurance Program

Management Summary

DRAFT

Monterey Bay Area Self Insurance Authority

An Actuarial Review of the Liability Self-Insurance Program

Management Summary

Projected 2013-14 Losses and Loss Rates

Tables I and II shows the projected 2013-14 losses and loss rates at various probability levels, discounted and undiscounted. The rates in Table I are gross of the \$10,000 per loss deductible, while those in Table II are net of that deductible. We discounted the rates at 1% interest. The items in Tables I and II do not include claims handling fees ("ULAE"), administrative costs, or the cost of excess insurance coverage. The losses have been calculated assuming that CARMA will cover any general and auto liability losses that exceed \$1,000,000, and that ERMA will cover any EPL losses that exceed \$500,000.

Tables I and II show actuarial central estimates, plus estimates at various probability levels. The probability level rates correspond to the estimated probabilities that the indicated rate will be adequate. For example, we estimate that there is a 70% probability that the actual 2013-14 discounted loss rate, gross of deductibles (Table I) will be less than **\$2.70**.

Table V on page 11 shows factors to adjust these rates for interest rates other than 1%.

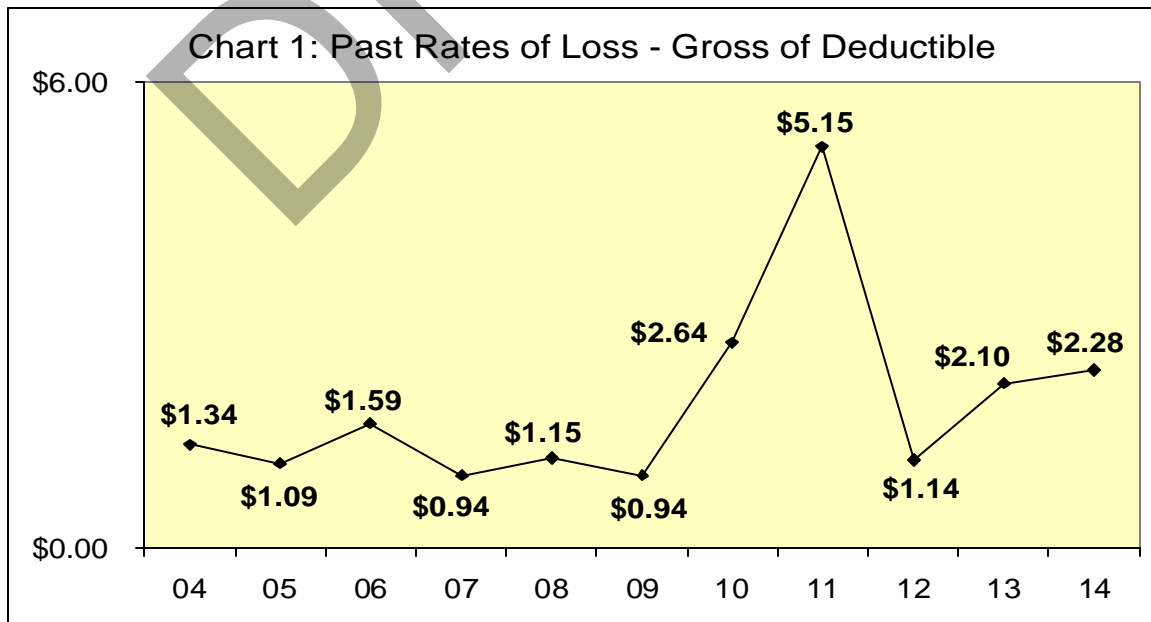
Table I: Projected 2013-14 Losses and Loss Rates (\$1M SIR (\$500K EPL SIR), Gross of \$10K Deductible, 1% Interest Rate)				
<u>Probability Level</u>	<u>Undiscounted Losses</u>	<u>Discounted Losses</u>	<u>Undiscounted Loss Rate</u>	<u>Discounted Loss Rate</u>
Central Estimate	\$989,579	\$958,902	\$2.28	\$2.21
70%	1,207,286	1,169,861	2.79	2.70
80%	1,484,369	1,438,353	3.43	3.32
90%	1,781,242	1,726,024	4.11	3.98
2012 C.E.	\$1,159,438	\$1,128,133	\$2.55	\$2.48
% Change from 12	-14.7%	-15.0%	-10.6%	-10.9%

Table II: Projected 2013-14 Losses and Loss Rates (\$1M SIR (\$500K EPL SIR), NET of \$10K Deductible, 1% Interest Rate)				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
Central Estimate	\$835,274	\$807,710	\$1.93	\$1.86
70%	1,044,093	1,009,638	2.41	2.33
80%	1,336,439	1,292,336	3.09	2.98
90%	1,670,549	1,615,421	3.86	3.73
2012 C.E.	\$987,436	\$957,813	\$2.17	\$2.10
% Change from 12	-15.4%	-15.7%	-11.1%	-11.4%

The \$10,000 deductible rates in Table II are about 15% lower than the Table I rates. The rates have come down because the 2012 experience was generally very good. The ultimate loss estimates for three of the last four program years have come down. The exception was in 2010-11, where one of the losses is now estimated to have exceeded \$1.4 million. The actual indicated contributions for 2013-14 are down more than the rates because the MBASIA payroll fell from \$45.8 million in 2011-12 to \$43.3 million in 2012-13.

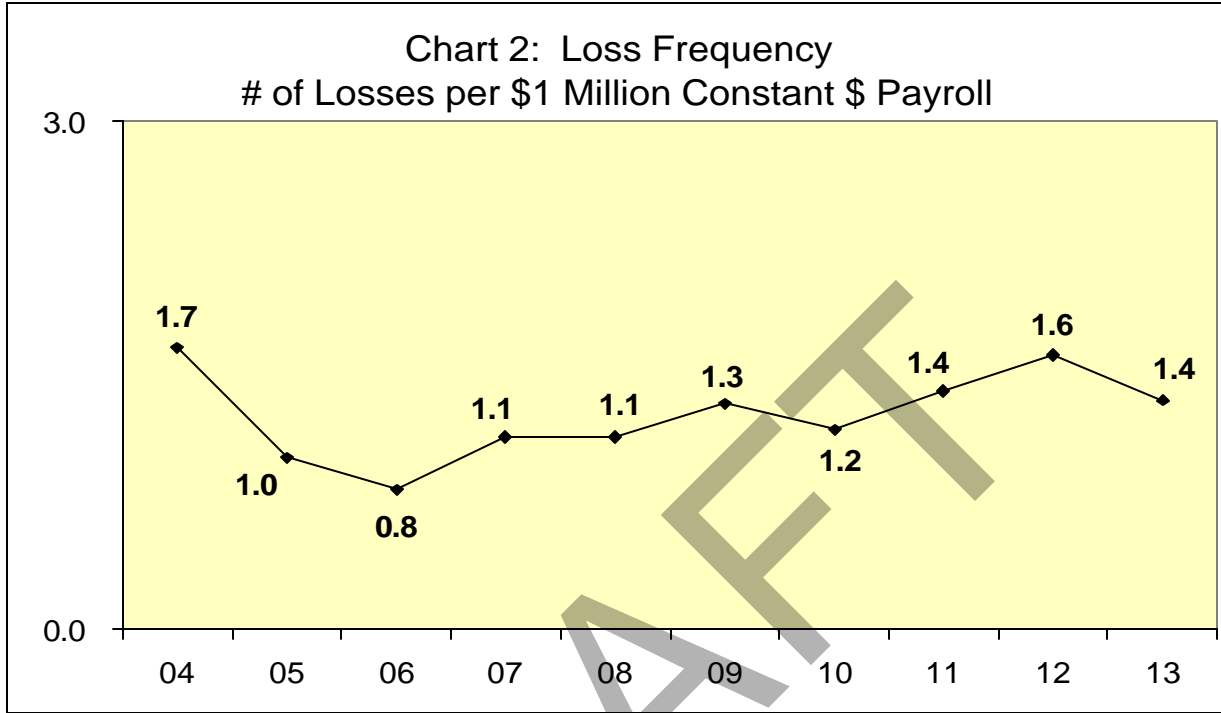
The Authority's Past Rates of Loss

Chart 1 shows the Authority's estimated past rates of loss. The rate is equal to the estimated total losses for the year divided by the total insured payroll measured in hundreds of dollars. These rates are not discounted. The rate of **\$2.28** projected for 2013-14 in Chart 1 corresponds to the undiscounted rate of **\$2.21** in Table I.



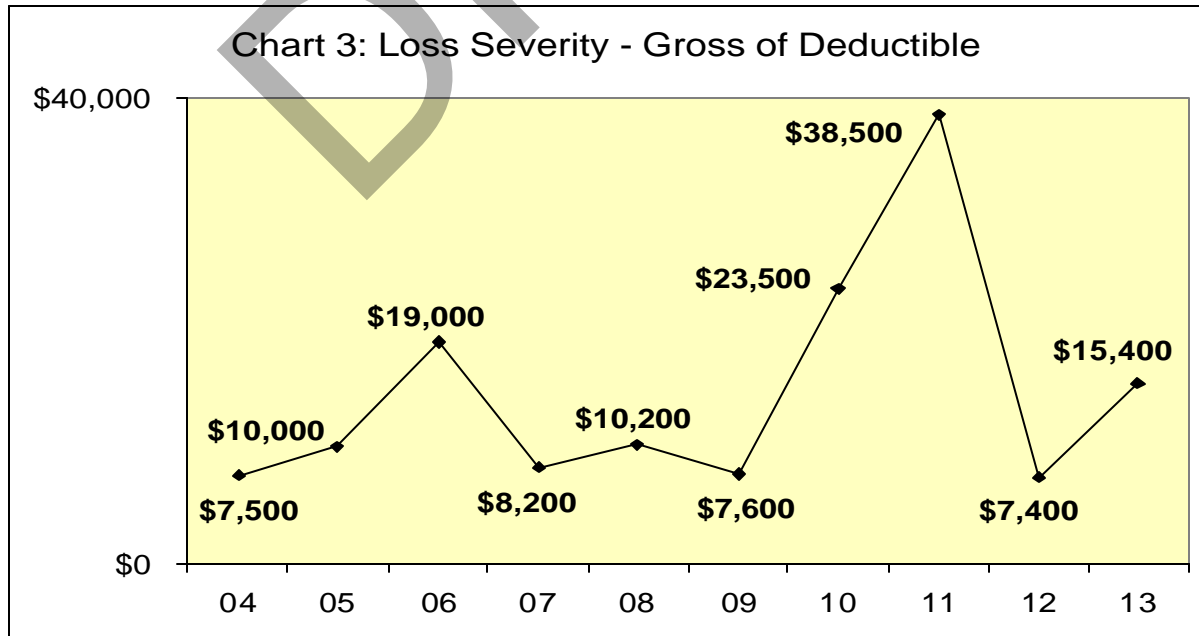
Loss Frequency

Loss “frequency” is the number of losses divided by 2012 payroll. Chart 2 shows recent loss frequency.



Average Loss Amount

The average loss amount is the estimated ultimate losses divided by the number of losses. Chart 3 shows the estimated average cost per loss.



Liability for Unpaid Losses – 6/30/13

We project that the Authority's liability for unpaid losses, undiscounted, will be **\$2,820,000** on June 30, 2013, or **\$2,777,000** if discounted at 1% interest. Table III shows the actuarial central estimate plus various probability levels. The estimates in Table III are net of the \$10,000 deductible that the members pay on each loss.

Table III: Projected Liability for Unpaid Losses As of June 30, 2013 – Net of Deductibles		
Probability Level	Undiscounted Losses	Discounted at 1.0%
50%	2,650,438	2,610,681
Central Estimate	\$2,820,128	\$2,777,320
60%	2,876,006	2,832,866
70%	3,101,576	3,055,052
80%	3,439,929	3,388,330
90%	3,919,264	3,860,475

Table IV shows the projected liability gross of deductibles.

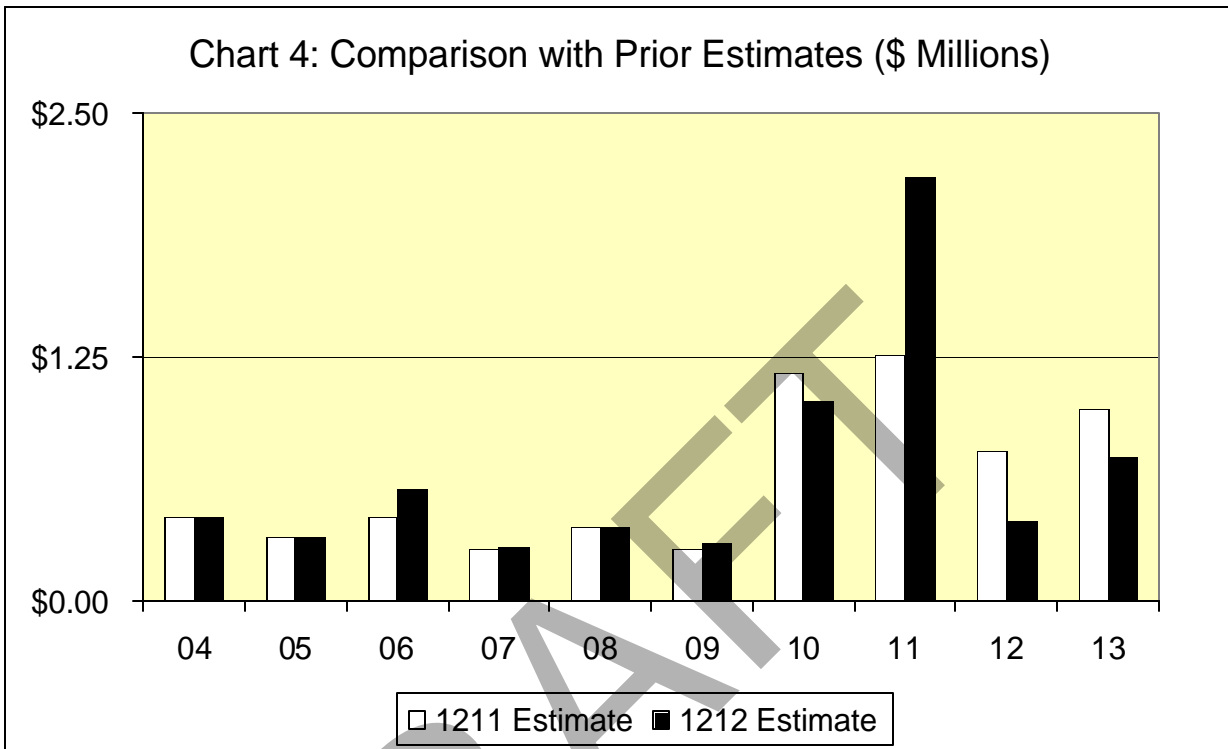
Table IV: Projected Liability for Unpaid Losses As of June 30, 2013 – Gross of Deductibles		
Probability Level	Undiscounted Losses	Discounted at 1.0%
50%	2,805,967	2,764,382
Central Estimate	\$2,985,616	\$2,940,831
60%	3,044,772	2,999,648
70%	3,283,579	3,234,915
80%	3,641,787	3,587,814
90%	4,149,250	4,087,756

ULAE Liability

We estimate the liability for unpaid unallocated loss adjustment expenses ("ULAE") will be \$183,000 on June 30, 2013. See page 20.

Comparison with 2012 Estimates

Chart 4 compares the prior estimates of the net losses by program year with the new estimates.



The overall increase for all years combined was \$360,000. The increase was mostly caused by the very large development in 2010-11. A storm loss featuring dozens of claimants was estimated at a total of \$160,000 last year. The latest data indicates that this loss is now estimated at over \$1.4 million. Last year we commented upon the Authority's unusually good experience on regard to large claims. The spell has now been unbroken.

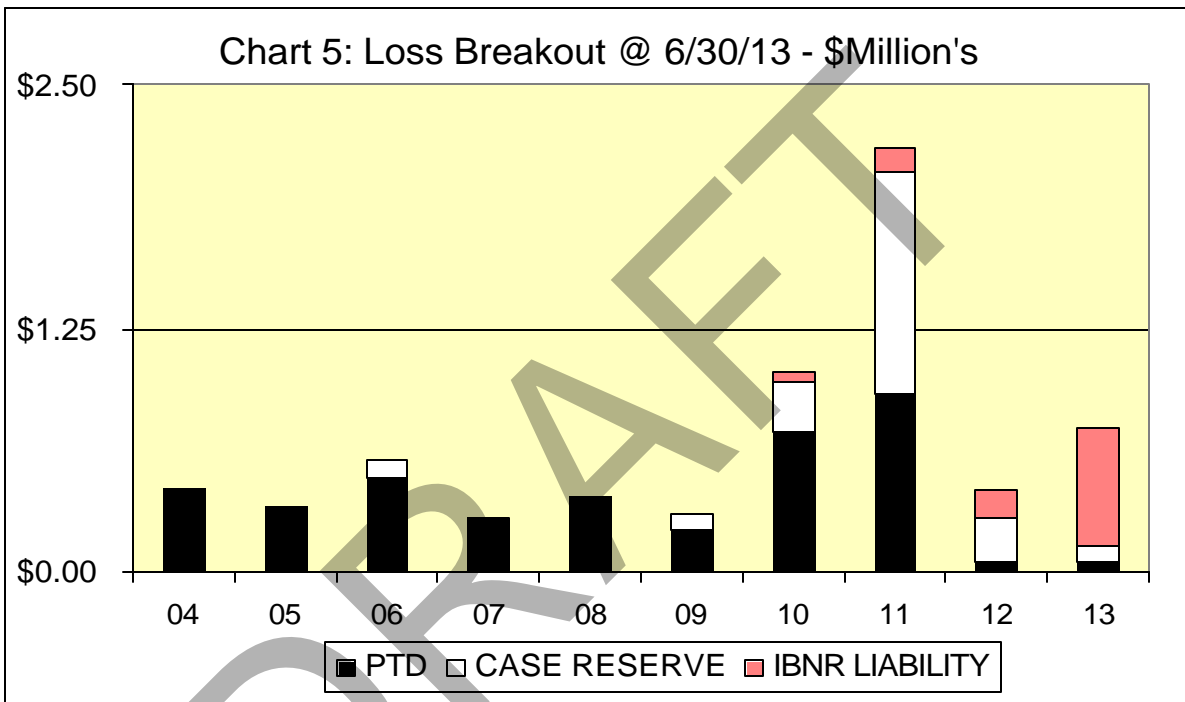
Reconciliation of 12/31/11 & 12/31/12 Estimates

These estimates are based on analysis of the 12/31/12 data. Last year we used 12/31/11 data and estimated a gross liability of \$2.770 million on that date. Claims expenditures were \$791,000 during 2012. We increased the losses estimates for 12/31/11 and prior by \$606,000 in this report. We estimate the losses incurred during 2012 at \$715,000.

Therefore starting with last year's 12/31/11 liability estimate, subtracting the claims payments, and adding the change in the estimates and the 2012 losses produces \$3.300 million as the estimated liability on 12/31/12. This matched the direct calculation shown on page 25.

Loss Breakout as of 6/30/13

In Table III we projected that the Authority's 6/30/13 liability, net of deductibles, would be **\$2,820,000**. This comprises **\$1,894,000** in case reserves for known claims and an IBNR liability of **\$926,000**. Chart 5 breaks out the projected total program year losses into their components: losses paid, case reserves, and IBNR liability. The details are on page 22. There is \$0.49 of IBNR liability for every \$1.00 of case reserves. Total IBNR is down 32% from last year while case reserves are up 72%. The case reserve on the catastrophic 2010-11 loss is over \$1 million.



Short-Term Liability

Short-term liabilities are those expected to be discharged within twelve months. The total projected 6/30/13 liability of **\$2,820,000** comprises **\$1,107,000** of short-term and **\$1,713,000** of long-term liabilities.

Interest Rates

The discounted liabilities and rates in this report were discounted at 1% interest. Here are the adjustments to make for different interest rate assumptions:

Interest Rate	0.0%	0.22%	0.48%	1.0%	1.5%
Gross Rates	+3.2%	+2.5%	+1.7%	+0.0%	-1.5%
Net Rates	+3.4%	+2.7%	+1.8%	+0.0%	-1.7%
Liabilities	+1.5%	+1.2%	+0.8%	+0.0%	-0.8%

We included columns labeled 0.22% and 0.48%. These are the “risk-free” interest rates applicable to the 6/30/13 liability and the 2013-14 rates, respectively. If one assembles a current portfolio of treasury bills and notes selected to mature just as the expected claims payments on the 2013-14 losses come due, that portfolio would yield an overall interest rate of 0.48%. If one assembles a similar portfolio with bills and notes selected to mature just as the expected payments on the 6/30/13 liability come due, that portfolio would yield 0.22%. Higher yields may be available, but only by taking on credit risk or by speculating instead of holding the items in the portfolio to maturity.

The EPL 500K xs 500K Layer

The Authority buys the 500Kx500K layer of coverage for EPL losses from ERMA. We were asked to comment. MBASIA has very little history on EPL losses. Only 28 of these have been incurred since 2002-03. However 5 of these 28 (18%) have exceeded \$250,000 and 2 (7%) have exceeded \$500,000. When we look at the 524 non-EPL losses incurred since 2002-03, only 3 have exceeded \$250,000 (0.6%) and only 1 has exceeded \$500,000 (0.2%). Therefore EPL losses are much larger than non-EPL losses and a much higher percentage of EPL losses will fall into the 500Kx500K layer.

We estimate the full undiscounted loss rate to cover the first \$1 million of loss in 2013-14 at \$2.28 per \$100 of payroll. We estimate that **\$0.29** of this is to cover the 500Kx500K layer of all losses, not just EPL losses. However, given the above statistics on large losses, we can estimate the conservative 500Kx500K EPL-only rate at \$0.29, assuming that all of the losses that exceed \$500,000 will be EPL losses. The chances of a non-EPL loss reaching \$500,000 have been negligible in the past (only one time since 2002-03).

Monterey Bay Area Self Insurance Authority

An Actuarial Review of the Liability Self-Insurance Program

Technical Approach

DRAFT

Monterey Bay Area Self Insurance Authority

An Actuarial Review of the Liability Self-Insurance Program

Technical Approach

This section describes the actuarial calculations.

Exhibits

Summary Exhibits

These exhibits summarize the analysis and conclusions. Summary Exhibit 1 shows the projected liabilities for unpaid losses as of June 30, 2013. Summary Exhibit 2 shows our projected rate for the 2013-14 program year, which runs from July 1, 2013 to June 30, 2014. Summary Exhibit 3 shows the projected unpaid losses as of June 30, 2013 by program year on both discounted and non-discounted bases.

Fiscal Year End Exhibits

These exhibits show the calculation of the projected unpaid losses as of June 30, 2013.

Loss Projection Exhibits

These exhibits show the various actuarial projection methods and summarize the results for each program year.

We used five different actuarial methods:

- 1) Reported loss projection method;
- 2) Paid loss projection method;
- 3) IBNR to Case Reserves Ratio method;
- 4) Bornhuetter-Ferguson method using reported losses; and
- 5) Frequency times Severity method.

Loss Projection Exhibit 1 summarizes the results of these methods.

Limited Loss Exhibits - \$250,000 Limit

These exhibits show the estimated ultimate losses limited to \$250,000 per loss. We use this limited loss analysis to calculate the projected 2013-14 loss rate.

Future Loss Exhibits

These exhibits show the projection of the expected rate for 2013-14.

Discounting Exhibits

These exhibits show the discounting of the remaining unpaid losses and the projected future loss rate. They also include the Program Information Exhibit.

Deductibles Exhibits

These exhibits show the estimation of the losses that fall under the \$10,000 deductible.

Claims Data

We included development triangles for reported losses, paid losses, and number of claims reported, plus a Program Information Exhibit.

DRAFT

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

Summary Exhibits

DRAFT

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Unpaid Losses as of 06/30/13
Losses Limited to SIR, NET of \$10K Deductible

	<u>06/30/13</u>
(1) Projected Unpaid Losses:	\$2,820,128
(2) Discounted Value of Unpaid Losses: (Assuming 1.0% Interest Rate)	\$2,777,320

Probability Levels for 06/30/13 Liabilities

Probability Level <u>(3)</u>	Probability Factor <u>(4)</u>	Discounted * Liability <u>(5)</u>
50%	0.94	2,610,681
Central Estimate	1.00	\$2,777,320
60%	1.02	2,832,866
70%	1.10	3,055,052
80%	1.22	3,388,330
90%	1.39	3,860,475

* Multiply by 1.015 to obtain undiscounted values.

Notes:

- (1) Page 19, Column (1).
- (2) Page 19, Column (2).
- (3) Estimated probability that funding will be adequate.
- (4) Estimated by BAC.
- (5) (2) x (4).

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Projected Loss Funding Rate for 2013-14
Losses Limited to \$1,000,000, NET of \$10K Deductible

(1) Discounted Loss Rate: Loss Rates
 (as of July 1, 2013, 1.0% interest rate) \$1.86

<u>Probability Levels</u>		
Probability Level (2)	Probability Factor (3)	Discounted * Rate (4)
50%	0.80	1.49
Central Estimate	1.00	\$1.86
60%	1.00	1.86
70%	1.25	2.33
80%	1.56	2.90
90%	2.02	3.76

* Multiply by 1.034 to obtain undiscounted values.

Notes:

- (1) [Page 51, Column] x [Page 57, Column (4)],
 adjusted for \$10,000 deductible.
- (2) Estimated probability that funding will be adequate.
- (3) Estimated by BAC.
- (4) (1) x (3).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2013
Losses Limited to SIR, NET of \$10K Deductible

Program Year	Undiscounted Value: Claims Liabilities as of 6/30/13 (1)	Discounted (1.0% Interest) Claims Liabilities as of 6/30/13 (2)	Estimated Ultimate Losses (3)
2003-04	\$0	\$0	\$426,270
2004-05	780	780	332,159
2005-06	95,398	95,398	577,572
2006-07	0	0	274,868
2007-08	0	0	382,509
2008-09	82,971	82,559	300,529
2009-10	311,400	308,334	1,028,865
2010-11	1,266,017	1,250,078	2,172,172
2011-12	366,475	360,450	414,719
2012-13	697,088	679,721	741,798
Total	\$2,820,128	\$2,777,320	\$6,651,461

Notes:

- (1) Page 22, Column (6).
- (2) Page 55, Column (3).
- (3) Page 22, Column (1).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

ULAE Projections and Calculation of Unpaid ULAE

(1) Selected ULAE Ratio:		8.7%	
	<u>Case Reserves with Development</u>	<u>"True" IBNR</u>	<u>Total</u>
(2) ULAE Ratio:	4.3%	8.7%	
(3) Estimated Unpaid Losses as of 12/31/12:	\$3,268,655	\$486,008	\$3,754,663
(4) Estimated Unpaid ULAE as of 12/31/12:	\$140,552	\$42,176	\$182,728
(5) Discounted Unpaid ULAE as of 12/31/12: (1.0% interest rate)			\$179,987

We project that the 6/30/13 ULAE liability will equal the 12/31/12 ULAE liability.

Notes:

- (1) Estimated by BAC.
- (2) "50-50 Rule."
- (3) Page 28, assuming 50% of IBNR is development on known claims.
- (4) (2) x [(3)].
- (5) (4) x [Page 55, Item].

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

Fiscal Year End Exhibits

DRAFT

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2013
Losses Limited to SIR, NET of \$10K Deductible

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/13 (2)	Projected Case Reserves 6/30/13 (3)	Projected Losses Reported as of 6/30/13 (4)	Projected IBNR as of 6/30/13 (5)	Projected Unpaid Losses as of 6/30/13 (6)
2003-04	\$426,270	\$426,270	\$0	\$426,270	\$0	\$0
2004-05	332,159	331,379	-1	331,378	781	780
2005-06	577,572	482,175	88,817	570,991	6,581	95,398
2006-07	274,868	274,867	0	274,867	0	0
2007-08	382,509	382,509	0	382,509	0	0
2008-09	300,529	217,558	74,813	292,372	8,157	82,971
2009-10	1,028,865	717,466	263,018	980,484	48,382	311,400
2010-11	2,172,172	906,156	1,152,388	2,058,544	113,629	1,266,017
2011-12	414,719	48,244	228,305	276,549	138,170	366,475
2012-13	741,798	44,710	86,616	131,325	610,472	697,088
Total	\$6,651,461	\$3,831,333	\$1,893,955	\$5,725,288	\$926,173	\$2,820,128

Notes:

(1) through (6) Page 23 entries minus Page 26 entries.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2013
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/13 (2)	Projected Case Reserves 6/30/13 (3)	Projected Losses Reported as of 6/30/13 (4)	Projected IBNR as of 6/30/13 (5)	Projected Unpaid Losses as of 6/30/13 (6)
2003-04	\$537,556	\$537,556	\$0	\$537,556	\$0	\$0
2004-05	440,000	438,305	914	439,219	781	1,695
2005-06	684,000	588,602	88,817	677,419	6,581	95,398
2006-07	401,336	401,336	0	401,336	0	0
2007-08	500,365	500,365	0	500,365	0	0
2008-09	440,000	352,011	79,831	431,843	8,157	87,989
2009-10	1,200,000	882,696	268,814	1,151,510	48,490	317,304
2010-11	2,350,000	1,069,537	1,165,158	2,234,695	115,305	1,280,463
2011-12	520,000	126,312	245,308	371,619	148,381	393,688
2012-13	910,000	100,922	118,660	219,582	690,418	809,078
Total	\$7,983,257	\$4,997,641	\$1,967,502	\$6,965,143	\$1,018,114	\$2,985,616

Notes:

- (1) Page 30, Column (6).
- (2) Page 24, Column (3).
- (3) (4) - (2).
- (4) Page 24, Column (6).
- (5) (1) - (4).
- (6) (3) + (5).

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Projected Paid and Reported Losses between 1/1/13 and 6/30/13
 Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Losses Paid as of 12/31/12 (1)	Projected Losses Paid 1/1/13 - 6/30/13 (2)	Projected Losses Paid as of 6/30/13 (3)	Losses Reported as of 12/31/12 (4)	Projected Losses Reported 1/1/13 - 6/30/13 (5)	Projected Losses Reported as of 6/30/13 (6)
2003-04	\$537,556	\$0	\$537,556	\$537,556	\$0	\$537,556
2004-05	436,606	1,699	438,305	438,436	783	439,219
2005-06	556,750	31,852	588,602	673,244	4,175	677,419
2006-07	401,336	0	401,336	401,336	0	401,336
2007-08	500,365	0	500,365	500,365	0	500,365
2008-09	306,347	45,664	352,011	423,531	8,311	431,843
2009-10	727,626	155,069	882,696	1,147,924	3,586	1,151,510
2010-11	650,645	418,891	1,069,537	2,221,296	13,399	2,234,695
2011-12	108,030	18,282	126,312	215,515	156,104	371,619
2012-13	3,334	97,588	100,922	28,895	190,687	219,582
Total	\$4,228,594	\$769,047	\$4,997,641	\$6,588,098	\$377,045	\$6,965,143

Notes:

- (1) Page 32, Column (1).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 31, Column (1).
- (5) Projected by BAC.
- (6) (4) + (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Estimated Unpaid Losses as of December 31, 2012
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Estimated Ultimate Losses (1)	Losses Paid as of 12/31/12 (2)	Case Reserves 12/31/12 (3)	Losses Reported as of 12/31/12 (4)	Estimated IBNR as of 12/31/12 (5)	Estimated Unpaid Losses as of 12/31/12 (6)
2003-04	\$537,556	\$537,556	\$0	\$537,556	\$0	\$0
2004-05	440,000	436,606	1,831	438,436	1,564	3,394
2005-06	684,000	556,750	116,494	673,244	10,756	127,250
2006-07	401,336	401,336	0	401,336	0	0
2007-08	500,365	500,365	0	500,365	0	0
2008-09	440,000	306,347	117,184	423,531	16,469	133,653
2009-10	1,200,000	727,626	420,297	1,147,924	52,076	472,374
2010-11	2,350,000	650,645	1,570,651	2,221,296	128,704	1,699,355
2011-12	520,000	108,030	107,485	215,515	304,485	411,970
2012-13	455,000	3,334	25,561	28,895	426,105	451,666
Total	\$7,528,257	\$4,228,594	\$2,359,503	\$6,588,098	\$940,159	\$3,299,663

Notes:

- (1) Page 30, Column (6).
2012-13 entry adjusted for partial year through 12/31/12.
- (2) Page 32, Column (1).
- (3) (4) - (2).
- (4) Page 31, Column (1).
- (5) (1) - (4).
- (6) (3) + (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Deductibles as of June 30, 2013
Losses Limited to \$10K Deductible

Program Year	Estimated Ultimate Deductibles (1)	Projected Ded Paid as of 6/30/13 (2)	Projected Case Reserves 6/30/13 (3)	Projected Ded Reported as of 6/30/13 (4)	Projected Deductible IBNR as of 6/30/13 (5)	Projected Deductible Losses as of 6/30/13 (6)
2003-04	\$111,286	\$111,286	\$0	\$111,286	\$0	\$0
2004-05	107,841	106,926	915	107,841	0	915
2005-06	106,428	106,428	0	106,428	0	0
2006-07	126,468	126,468	0	126,468	0	0
2007-08	117,856	117,856	0	117,856	0	0
2008-09	139,471	134,453	5,018	139,471	0	5,018
2009-10	171,135	165,230	5,796	171,026	108	5,904
2010-11	177,828	163,381	12,770	176,151	1,677	14,447
2011-12	105,281	78,068	17,003	95,071	10,211	27,213
2012-13	168,202	56,213	32,044	88,257	79,946	111,990
Total	\$1,331,796	\$1,166,309	\$73,546	\$1,239,855	\$91,941	\$165,487

Notes:

- (1) Page 59, Column (3).
- (2) Page 27, Column (3).
- (3) (4) - (2).
- (4) Page 27, Column (6).
- (5) (1) - (4).
- (6) (3) + (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Paid and Reported Deductibles between 1/1/13 and 6/30/13
Losses Limited to \$10K Deductible

Program Year	Ded Paid as of 12/31/12 <u>(1)</u>	Projected Losses Paid 1/1/13 - 6/30/13 <u>(2)</u>	Projected Losses Paid as of 6/30/13 <u>(3)</u>	Losses Reported as of 12/31/12 <u>(4)</u>	Projected Losses Reported 1/1/13 - 6/30/13 <u>(5)</u>	Projected Losses Reported as of 6/30/13 <u>(6)</u>
2003-04	\$111,286	\$0	\$111,286	\$111,286	\$0	\$111,286
2004-05	106,010	916	106,926	107,841	0	107,841
2005-06	106,428	0	106,428	106,428	0	106,428
2006-07	126,468	0	126,468	126,468	0	126,468
2007-08	117,856	0	117,856	117,856	0	117,856
2008-09	131,424	3,029	134,453	139,471	0	139,471
2009-10	162,712	2,518	165,230	170,918	108	171,026
2010-11	157,497	5,883	163,381	174,687	1,464	176,151
2011-12	60,328	17,740	78,068	85,999	9,071	95,071
2012-13	3,334	52,879	56,213	18,544	69,713	88,257
Total	\$1,083,345	\$82,964	\$1,166,309	\$1,159,499	\$80,356	\$1,239,855

Notes:

- (1) Page 28, Column (2).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 28, Column (4).
- (5) Projected by BAC.
- (6) (4) + (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Estimated Unpaid Deductibles as of December 31, 2012
Losses Limited to \$10K Deductible

Program Year	Estimated Ultimate Deductibles (1)	Ded Paid as of 12/31/12 (2)	Case Reserves 12/31/12 (3)	Ded Reported as of 12/31/12 (4)	Estimated Deductible IBNR as of 12/31/12 (5)	Estimated Deductible Losses as of 12/31/12 (6)
2003-04	\$111,286	\$111,286	\$0	\$111,286	\$0	\$0
2004-05	107,841	106,010	1,831	107,841	0	1,831
2005-06	106,428	106,428	0	106,428	0	0
2006-07	126,468	126,468	0	126,468	0	0
2007-08	117,856	117,856	0	117,856	0	0
2008-09	139,471	131,424	8,047	139,471	0	8,047
2009-10	171,135	162,712	8,206	170,918	216	8,423
2010-11	177,828	157,497	17,190	174,687	3,140	20,330
2011-12	105,281	60,328	25,671	85,999	19,282	44,953
2012-13	84,101	3,334	15,210	18,544	65,557	80,767
Total	\$1,247,695	\$1,083,345	\$76,154	\$1,159,499	\$88,196	\$164,350

Notes:

- (1) Page 59, Column (3).
2012-13 adjusted for partial year through 12/31/12.
- (2) Provided by Risk Management Services.
- (3) (4) - (2).
- (4) Page 60, Column (1).
- (5) (1) - (4).
- (6) (3) + (5).

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

Loss Projection Exhibits

DRAFT

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Selected Ultimate Losses
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Reported Projection (1)	Paid Projection (2)	IBNR to Case Reserves Ratio (3)	B-F Method Using Reported (4)	Frequency Times Severity (5)	Selected Ultimate Losses (6)
2003-04	\$537,556	\$538,631	\$537,556	\$537,556	\$882,293	\$537,556
2004-05	438,436	439,666	438,436	438,436	556,482	440,000
2005-06	673,917	563,456	683,961	673,938	469,963	684,000
2006-07	402,540	410,231	401,336	403,484	660,326	401,336
2007-08	502,844	520,986	500,365	504,062	681,808	500,365
2008-09	431,573	330,963	462,671	438,024	833,090	440,000
2009-10	1,212,464	832,113	1,457,263	1,189,682	756,143	1,200,000
2010-11	2,634,743	977,142	3,611,322	2,348,937	933,485	2,350,000
2011-12	462,646	502,799	444,244	663,529	1,105,450	520,000
2012-13	603,824	200,213	808,913	853,154	961,700	910,000
Total	\$7,900,543	\$5,316,200	\$9,346,067	\$8,050,802	\$7,840,740	\$7,983,257

Notes:

- (1) Page 31, Column (3).
- (2) Page 32, Column (3).
- (3) Page 33, Column (6).
- (4) Page 34, Column (6).
- (5) Page 38, Column (4).
- (6) Selected on the basis of (1) - (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Reported Loss Development
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Cumulative Reported Losses as of 12/31/12 (1)	Reported Development Factor as of 12/31/12 (2)	Projected Ultimate Losses (3)
2003-04	\$537,556	1.000	\$537,556
2004-05	438,436	1.000	438,436
2005-06	673,244	1.001	673,917
2006-07	401,336	1.003	402,540
2007-08	500,365	1.005	502,844
2008-09	423,531	1.019	431,573
2009-10	1,147,924	1.056	1,212,464
2010-11	2,221,296	1.186	2,634,743
2011-12	215,515	2.147	462,646
2012-13	28,895	20.897	603,824
Total	\$6,588,098		\$7,900,543

Notes:

- (1) Provided by Risk Management Services.
- (2) Page 63.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Paid Loss Projection
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Cumulative Paid Losses as of 12/31/12 (1)	Paid Development Factor as of 12/31/12 (2)	Projected Ultimate Losses (3)
2003-04	\$537,556	1.002	\$538,631
2004-05	436,606	1.007	439,666
2005-06	556,750	1.012	563,456
2006-07	401,336	1.022	410,231
2007-08	500,365	1.041	520,986
2008-09	306,347	1.080	330,963
2009-10	727,626	1.144	832,113
2010-11	650,645	1.502	977,142
2011-12	108,030	4.654	502,799
2012-13	3,334	60.052	200,213
Total	\$4,228,594		\$5,316,200

Notes:

- (1) Provided by Risk Management Services.
- (2) Page 64.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

IBNR to Case Reserves Ratio Method
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Reported Development Factor as of 12/31/12 (1)	Paid Development Factor as of 12/31/12 (2)	IBNR to Case Reserves Ratio (3)	Case Reserves 12/31/12 (4)	Estimated IBNR as of 12/31/12 (5)	Estimated Ultimate Losses (6)
2003-04	1.000	1.002	0.000	\$0	\$0	\$537,556
2004-05	1.000	1.007	0.000	1,831	0	438,436
2005-06	1.001	1.012	0.092	116,494	10,717	683,961
2006-07	1.003	1.022	0.160	0	0	401,336
2007-08	1.005	1.041	0.142	0	0	500,365
2008-09	1.019	1.080	0.334	117,184	39,140	462,671
2009-10	1.056	1.144	0.736	420,297	309,339	1,457,263
2010-11	1.186	1.502	0.885	1,570,651	1,390,026	3,611,322
2011-12	2.147	4.654	2.128	107,485	228,729	444,244
2012-13	20.897	60.052	30.516	25,561	780,018	808,913
Total				\$2,359,503	\$2,757,969	\$9,346,067

Notes:

- (1) Page 31, Column (2).
- (2) Page 32, Column (2).
- (3) $[(1) - 1.000] \times (2) / [(2) - (1)]$.
- (4) Page 31, Column (1) - Page 32, Column (1).
- (5) $(3) \times (4)$, rounded.
- (6) $(5) + \text{Page 31, Column (1)}$.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Bornhuetter-Ferguson Using Reported Losses
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Reported Loss Development Factors (2)	Percentage of Losses Not Yet Reported (3)	Expected Unreported Losses (4)	Losses Reported as of 12/31/12 (5)	Estimated Ultimate Losses (6)
2003-04	\$651,095	1.000	0.0%	\$0	\$537,556	\$537,556
2004-05	671,875	1.000	0.0%	0	438,436	438,436
2005-06	693,520	1.001	0.1%	694	673,244	673,938
2006-07	716,032	1.003	0.3%	2,148	401,336	403,484
2007-08	739,409	1.005	0.5%	3,697	500,365	504,062
2008-09	762,786	1.019	1.9%	14,493	423,531	438,024
2009-10	787,895	1.056	5.3%	41,758	1,147,924	1,189,682
2010-11	813,003	1.186	15.7%	127,641	2,221,296	2,348,937
2011-12	838,978	2.147	53.4%	448,014	215,515	663,529
2012-13	865,818	20.897	95.2%	824,259	28,895	853,154
	\$7,540,411			\$1,462,704	\$6,588,098	\$8,050,802

Notes:

- (1) Page 35, Column (3).
- (2) Page 31, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 31, Column (1).
- (6) $(4) + (5)$.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

A Priori Losses for Bornhuetter-Ferguson
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	<i>A Priori</i> 2012-13 Loss (1)	Factor to Remove Trend (2)	<i>A Priori</i> Ultimate Losses (3)
2003-04	\$865,818	0.752	\$651,095
2004-05	865,818	0.776	671,875
2005-06	865,818	0.801	693,520
2006-07	865,818	0.827	716,032
2007-08	865,818	0.854	739,409
2008-09	865,818	0.881	762,786
2009-10	865,818	0.910	787,895
2010-11	865,818	0.939	813,003
2011-12	865,818	0.969	838,978
2012-13	865,818	1.000	865,818
Total			\$7,540,411

Notes:

- (1) Page 36, Average of Column (3).
- (2) $1.000 / [\text{Page 36, Column (2)}]$.
- (3) $(1) \times (2)$.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

A Priori Loss Rate for Bornhuetter-Ferguson Method
At \$1M SIR, Gross of \$10K Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Estimated Pure Premium Trend (2)	Constant Dollar Ultimate Losses (3)
2003-04	\$537,556	1.330	\$715,041
2004-05	439,049	1.289	565,851
2005-06	673,244	1.249	840,619
2006-07	401,336	1.210	485,437
2007-08	500,365	1.171	586,150
2008-09	423,531	1.135	480,628
2009-10	1,147,924	1.099	1,262,023
2010-11	2,221,296	1.065	2,366,010
2011-12	475,320	1.032	490,606
2012-13	499,632	1.000	499,632
Average			\$829,200
03/04-11/12			\$865,818
	(4) <i>A Priori</i> 2012-13 Losses:		\$865,818

Notes:

- (1) Page 37, Column (3).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Average of (3) excluding 2012-13.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

A Priori Ultimate losses
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Reported Loss Projection (1)	Paid Loss Projection (2)	<i>A Priori</i> Selection (3)
2003-04	\$537,556	\$538,631	\$537,556
2004-05	438,436	439,666	439,049
2005-06	673,917	563,456	673,244
2006-07	402,540	410,231	401,336
2007-08	502,844	520,986	500,365
2008-09	431,573	330,963	423,531
2009-10	1,212,464	832,113	1,147,924
2010-11	2,634,743	977,142	2,221,296
2011-12	462,646	502,799	475,320
2012-13	603,824	200,213	499,632
Total	\$7,900,543	\$5,316,200	\$7,319,253

Notes:

- (1) Page 31, Column (3).
- (2) Page 32, Column (3).
- (3) Selected on the basis of (1) and (2).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Frequency Times Severity Method
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Selected Claim Severity (1)	Factor to Remove Trend (2)	Selected Ultimate Claims (3)	Estimated Ultimate Losses (4)
2003-04	\$16,300	0.752	72	\$882,293
2004-05	16,300	0.776	44	556,482
2005-06	16,300	0.801	36	469,963
2006-07	16,300	0.827	49	660,326
2007-08	16,300	0.854	49	681,808
2008-09	16,300	0.881	58	833,090
2009-10	16,300	0.910	51	756,143
2010-11	16,300	0.939	61	933,485
2011-12	16,300	0.969	70	1,105,450
2012-13	16,300	1.000	59	961,700
Total				\$7,840,740

Notes:

- (1) Page 39, Item (5).
- (2) 1.000 / [Page 39, Column (2)].
- (3) Page 40, Column (3).
- (4) (1) x (2) x (3).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Calculation of Expected Claim Severity
Frequency Times Severity Method
At \$1M SIR, Gross of \$10K Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Estimated Severity Trend (2)	Selected Claim Count (3)	Trended Claim Severity (4)
2003-04	\$537,556	1.330	72	\$9,931
2004-05	439,049	1.289	44	12,860
2005-06	673,244	1.249	36	23,351
2006-07	401,336	1.210	49	9,907
2007-08	500,365	1.171	49	11,962
2008-09	423,531	1.135	58	8,287
2009-10	1,147,924	1.099	51	24,746
2010-11	2,221,296	1.065	61	38,787
2011-12	475,320	1.032	70	7,009
2012-13	499,632	1.000	59	8,468
Total	\$7,319,253		549	\$15,531
03/04-11/12	\$6,819,621		490	\$16,316
			(5) Selected Severity:	\$16,300

Notes:

- (1) Page 37, Column (3).
- (2) Estimated by BAC.
- (3) Page 40, Column (3).
- (4) (1) x (2) / (3).
- (5) Selected on the basis of (4).

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Selected Claim Counts

Program Year	Reported Claim Count Projection (1)	Bornhuetter-Ferguson Method (2)	Selected Claim Count (3)
2003-04	72		72
2004-05	44		44
2005-06	36		36
2006-07	49		49
2007-08	49		49
2008-09	58		58
2009-10	51		51
2010-11	61		61
2011-12	70		70
2012-13	73	59	59
Total	563		549

Notes:

- (1) Page 41, Column (3).
- (2) Page 42, Column (6).
- (3) Selected on the basis of (1) and (2).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projection of Ultimate Claim Counts
Projection of Reported Claims

Program Year	Total Claims Reported 12/31/12 (1)	Development Factors as of 12/31/12 (2)	Projected Ultimate Claims (3)
2003-04	72	1.000	72
2004-05	44	1.000	44
2005-06	36	1.000	36
2006-07	49	1.000	49
2007-08	49	1.000	49
2008-09	58	1.000	58
2009-10	51	1.000	51
2010-11	60	1.014	61
2011-12	64	1.086	70
2012-13	17	4.299	73
Average			56
03/04-11/12 Average			54

Notes:

- (1) Provided by Risk Management Services.
- (2) Page 63.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projection of Ultimate Claim Counts
Bornhuetter-Ferguson Method

<u>Program Year</u>	<u>A Priori Claim Count (1)</u>	<u>Claim Development Factor (2)</u>	<u>Estimated Percentage of Claims Unreported (3)</u>	<u>Estimated Unreported Claims (4)</u>	<u>Reported Claims as of 12/31/12 (5)</u>	<u>Projected Ultimate Claims (6)</u>
2012-13	54	4.299	76.7%	42	17	59

DRAFT

Notes:

- (1) Page 41, Column (3), average 2003-04 to 2011-12.
- (2) Page 41, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 41, Column (1).
- (6) $(4) + (5)$.

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

**Limited Loss Analysis
Losses Limited to \$250,000 per Loss**

DRAFT

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Selected Ultimate Losses
Losses Limited to \$250,000, Gross of \$10K Deductible

Program Year	Reported Projection (1)	Paid Projection (2)	IBNR to Case Reserves Ratio (3)	B-F Method Using Reported (4)	B-F Method Using Paid (5)	Selected Ultimate Losses (6)
2003-04	\$486,322	\$486,581	\$486,322	\$486,322	\$486,946	\$486,322
2004-05	438,436	437,563	438,436	438,436	437,950	438,436
2005-06	673,521	559,484	683,961	673,244	560,218	683,961
2006-07	401,709	405,687	401,336	402,052	409,212	401,336
2007-08	501,007	510,328	500,365	501,104	515,153	500,365
2008-09	427,821	319,439	461,499	431,159	337,621	440,000
2009-10	961,257	773,572	1,033,348	952,804	765,049	980,000
2010-11	1,263,426	934,533	1,386,667	1,187,115	816,733	1,230,000
2011-12	381,994	408,691	371,691	581,309	725,518	440,000
2012-13	453,663	127,228	667,305	717,461	719,854	720,000
Total	\$5,989,156	\$4,963,106	\$6,430,930	\$6,371,006	\$5,774,254	\$6,320,420

Notes:

- (1) Page 45, Column (3).
- (2) Page 46, Column (3).
- (3) Page 47, Column (6).
- (4) Page 48, Column (6).
- (5) Page 49, Column (6).
- (6) Selected on the basis of (1) - (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Reported Loss Development
Losses Limited to \$250,000, Gross of \$10K Deductible

Program Year	Cumulative Reported Losses as of 12/31/12 (1)	Reported Development Factor as of 12/31/12 (2)	Projected Ultimate Losses (3)
2003-04	\$486,322	1.000	\$486,322
2004-05	438,436	1.000	438,436
2005-06	673,244	1.000	673,521
2006-07	401,336	1.001	401,709
2007-08	500,365	1.001	501,007
2008-09	423,531	1.010	427,821
2009-10	932,963	1.030	961,257
2010-11	1,129,203	1.119	1,263,426
2011-12	215,515	1.772	381,994
2012-13	28,895	15.700	453,663
Total	\$5,229,810		\$5,989,156

Notes:

- (1) Provided by Risk Management Services.
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Paid Loss Development
Losses Limited to \$250,000, Gross of \$10K Deductible

Program Year	Cumulative Paid Losses as of 12/31/12 (1)	Paid Development Factor as of 12/31/12 (2)	Projected Ultimate Losses (3)
2003-04	\$486,322	1.001	\$486,581
2004-05	436,606	1.002	437,563
2005-06	556,750	1.005	559,484
2006-07	401,336	1.011	405,687
2007-08	500,365	1.020	510,328
2008-09	306,347	1.043	319,439
2009-10	697,316	1.109	773,572
2010-11	650,645	1.436	934,533
2011-12	108,030	3.783	408,691
2012-13	3,334	38.161	127,228
Total	\$4,147,051		\$4,963,106

Notes:

- (1) Provided by Risk Management Services.
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

IBNR to Case Reserves Ratio Method
Losses Limited to \$250,000, Gross of \$10K Deductible

Program Year	Reported LDF (1)	Paid LDF (2)	IBNR to Case Reserves Ratio (3)	Case Reserves as of 12/31/12 (4)	Estimated IBNR as of 12/31/12 (5)	Estimated Ultimate Losses (6)
2003-04	1.000	1.001	0.000	\$0	\$0	\$486,322
2004-05	1.000	1.002	0.000	1,831	0	438,436
2005-06	1.000	1.005	0.092	116,494	10,717	683,961
2006-07	1.001	1.011	0.095	0	0	401,336
2007-08	1.001	1.020	0.070	0	0	500,365
2008-09	1.010	1.043	0.324	117,184	37,968	461,499
2009-10	1.030	1.109	0.426	235,646	100,385	1,033,348
2010-11	1.119	1.436	0.538	478,558	257,464	1,386,667
2011-12	1.772	3.783	1.453	107,485	156,176	371,691
2012-13	15.700	38.161	24.976	25,561	638,410	667,305
Total				\$1,082,759	\$1,201,120	\$6,430,930

Notes:

- (1) Page 45, Column (2).
- (2) Page 46, Column (2).
- (3) $[(1) - 1.000] \times (2) / [(2) - (1)]$.
- (4) Page 45, Column (1) - Page 46, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 45, Column (1).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Bornhuetter-Ferguson Using Reported Losses
Losses Limited to \$250,000, Gross of \$10K Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Reported Loss Development Factors (2)	Percentage of Losses Not Yet Reported (3)	Expected Unreported Losses (4)	Losses Reported as of 12/31/12 (5)	Estimated Ultimate Losses (6)
2003-04	\$624,455	1.000	0.0%	\$0	\$486,322	\$486,322
2004-05	671,875	1.000	0.0%	0	438,436	438,436
2005-06	693,520	1.000	0.0%	0	673,244	673,244
2006-07	716,032	1.001	0.1%	716	401,336	402,052
2007-08	739,409	1.001	0.1%	739	500,365	501,104
2008-09	762,786	1.010	1.0%	7,628	423,531	431,159
2009-10	684,173	1.030	2.9%	19,841	932,963	952,804
2010-11	546,343	1.119	10.6%	57,912	1,129,203	1,187,115
2011-12	838,978	1.772	43.6%	365,794	215,515	581,309
2012-13	735,647	15.700	93.6%	688,566	28,895	717,461
Total	\$7,013,219			\$1,141,196	\$5,229,810	\$6,371,006

Notes:

- (1) Page 30, Column (6), adjusted for \$250K limit.
- (2) Page 45, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 45, Column (1).
- (6) $(4) + (5)$.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Bornhuetter-Ferguson Using Paid Losses
Losses Limited to \$250,000, Gross of \$10K Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Paid Loss Development Factors (2)	Percentage of Losses Not Yet Paid (3)	Expected Unpaid Losses (4)	Losses Paid as of 12/31/12 (5)	Estimated Ultimate Losses (6)
2003-04	\$624,455	1.001	0.1%	\$624	\$486,322	\$486,946
2004-05	671,875	1.002	0.2%	1,344	436,606	437,950
2005-06	693,520	1.005	0.5%	3,468	556,750	560,218
2006-07	716,032	1.011	1.1%	7,876	401,336	409,212
2007-08	739,409	1.020	2.0%	14,788	500,365	515,153
2008-09	762,786	1.043	4.1%	31,274	306,347	337,621
2009-10	684,173	1.109	9.9%	67,733	697,316	765,049
2010-11	546,343	1.436	30.4%	166,088	650,645	816,733
2011-12	838,978	3.783	73.6%	617,488	108,030	725,518
2012-13	735,647	38.161	97.4%	716,520	3,334	719,854
Total	\$7,013,219			\$1,627,203	\$4,147,051	\$5,774,254

Notes:

- (1) Page 48, Column (1).
- (2) Page 46, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 46, Column (1).
- (6) $(4) + (5)$.

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

Future Loss Exhibits

DRAFT

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected \$1M Loss Rate for 2013-14
All Gross of \$10K Deductible

Based on \$250K Limit Analysis

Program Year	250K Limit Loss Rate (1)	Factor for \$1M SIR (2)	Projected \$1M SIR Loss Rate (3)
2013-14	\$1.69	1.351	\$2.28

Based on \$1M Limit Analysis

Program Year	1M Limit Loss Rate (4)	Factor for \$1M SIR (5)	Projected \$1M SIR Loss Rate (6)
2013-14	\$2.14	1.000	\$2.14

Program Year	Selected 2013-14 \$1M SIR Loss Rate (7)	Projected 2013-14 Payroll (\$00's) (8)	Projected Ultimate Losses (9)
2013-14	\$2.28	\$433,156	\$989,579

Notes:

- (1) Page 52, Item (5).
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.
- (4) Page 53, Item (5).
- (5) Estimated by BAC.
- (6) (4) x (5), rounded.
- (7) Selected by BAC.
- (8) Page 66, Column (2).
- (9) (7) x (8), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Future Loss Rate
Losses Limited to \$250,000, Gross of \$10K Deductible

Program Year	Estimated Ultimate Losses (1)	Trend Factor (2)	Losses Trended to 2013-14 (3)
2003-04	\$486,322	1.341	\$652,387
2004-05	438,436	1.302	570,863
2005-06	683,961	1.264	864,242
2006-07	401,336	1.226	492,144
2007-08	500,365	1.190	595,636
2008-09	440,000	1.156	508,500
2009-10	980,000	1.122	1,099,819
2010-11	1,230,000	1.090	1,341,034
2011-12	440,000	1.059	466,047
2012-13	720,000	1.029	740,887
Average 03-04 through 11-12:			\$732,297
(4) Projected 2013-14 Payroll (\$00's):			\$433,156
(5) Projected 2013-14 \$250K Limit Rate:			\$1.69

Notes:

- (1) Page 44, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 66, Column (2).
- (5) Average (3) / (4).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Future Loss Rate
Losses Limited to \$1,000,000, Gross of \$10K Deductible

Program Year	Estimated Ultimate Losses (1)	Trend Factor (2)	Losses Trended to 2013-14 (3)
2003-04	\$537,556	1.373	\$738,083
2004-05	440,000	1.330	585,350
2005-06	684,000	1.289	881,570
2006-07	401,336	1.249	501,080
2007-08	500,365	1.209	605,038
2008-09	440,000	1.171	515,407
2009-10	1,200,000	1.135	1,361,788
2010-11	2,350,000	1.099	2,583,759
2011-12	520,000	1.065	554,018
2012-13	910,000	1.032	939,324

Average 03-04 through 11-12: \$925,122

(4) Projected 2013-14 Payroll (\$00's): \$433,156

(5) Projected 2013-14 \$1M Limit Rate: \$2.14

Notes:

- (1) Page 30, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 66, Column (2).
- (5) (3) / (4).

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

Discounting Exhibits

DRAFT

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Discounted Value of Unpaid Losses as of June 30, 2013
 Assuming a 1.0% Interest Rate

Losses Limited to SIR, NET of \$10K Deductible

Program Year	Projected Unpaid Losses (1)	Discount Factor (2)	Discounted Unpaid Losses (3)
2003-04	\$0	1.000	\$0
2004-05	780	1.000	780
2005-06	95,398	1.000	95,398
2006-07	0	1.000	0
2007-08	0	1.000	0
2008-09	82,971	0.995	82,559
2009-10	311,400	0.990	308,334
2010-11	1,266,017	0.987	1,250,078
2011-12	366,475	0.984	360,450
2012-13	697,088	0.975	679,721
Total	\$2,820,128		\$2,777,320

(4) Indicated Discount Factor: 0.985

Notes:

- (1) Page 22, Column (6).
- (2) (3) / (1).
- (3) Based upon a 1.0% interest rate.
- (4) [Sum of Column (3)] / [Sum of Column (1)].

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Discounted Value of 2013-14 Losses as of July 1, 2013
 Assuming a 1.0% Interest Rate

Losses Limited to \$1M SIR, Gross of \$10K Deductible

Program Year	Projected Loss Payments (1)	Discounted Value Factor (2)	Discounted Value of Payments (3)
2013-14	\$109,748	0.995	\$109,203
2014-15	130,627	0.985	128,692
2015-16	210,004	0.975	204,844
2016-17	277,535	0.966	268,036
2017-18	63,774	0.956	60,982
2018-19	197,890	0.947	187,351
2019-20	0	0.937	0
2020-21	0	0.928	0
2021-22	0	0.919	0
2022-23	0	0.910	0
2023-24	0	0.901	0
Total	\$989,579		\$959,108
	(4) Indicated Discount Factor:		0.969

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 1.0% interest rate.
- (3) (1) x (2).
- (4) [Sum of Column (3)] / [Sum of Column (1)].

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Discounted Value of 2013-14 Losses as of July 1, 2013
 Assuming a 1.0% Interest Rate

Losses Limited to \$1M SIR, NET of \$10K Deductible

Program Year	Projected Loss Payments (1)	Discounted Value Factor (2)	Discounted Value of Payments (3)
2013-14	\$50,344	0.995	\$50,094
2014-15	46,823	0.985	46,129
2015-16	251,281	0.975	245,107
2016-17	234,020	0.966	226,010
2017-18	127,516	0.956	121,932
2018-19	125,291	0.947	118,619
2019-20	0	0.937	0
2020-21	0	0.928	0
2021-22	0	0.919	0
2022-23	0	0.910	0
2023-24	0	0.901	0
Total	\$835,274		\$807,891

(4) Indicated Discount Factor: 0.967

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 1.0% interest rate.
- (3) (1) x (2).
- (4) [Sum of Column (3)] / [Sum of Column (1)].

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

Deductibles

DRAFT

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Selected Ultimate Deductible Losses
Losses Limited to \$10,000 Deductible

Program Year	Reported Projection (1)	B-F Method Using Reported (2)	Selected Ultimate Losses (3)
2003-04	\$111,286	\$111,286	\$111,286
2004-05	107,841	107,841	107,841
2005-06	106,429	106,428	106,428
2006-07	126,470	126,468	126,468
2007-08	117,858	117,856	117,856
2008-09	139,530	139,471	139,471
2009-10	171,100	171,169	171,135
2010-11	176,915	178,740	177,828
2011-12	104,809	105,753	105,281
2012-13	159,912	176,493	168,202
Total	\$1,322,150	\$1,341,506	\$1,331,796

Notes:

- (1) Page 60, Column (3).
- (2) Page 61, Column (6).
- (3) Selected on the basis of (1) - (2).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Reported Loss Development
Deductible Losses Limited to \$10,000

Program Year	Cumulative Reported Losses as of 12/31/12 (1)	Reported Development Factor as of 12/31/12 (2)	Projected Ultimate Losses (3)
2003-04	\$111,286	1.000	\$111,286
2004-05	107,841	1.000	107,841
2005-06	106,428	1.000	106,429
2006-07	126,468	1.000	126,470
2007-08	117,856	1.000	117,858
2008-09	139,471	1.000	139,530
2009-10	170,918	1.001	171,100
2010-11	174,687	1.013	176,915
2011-12	85,999	1.219	104,809
2012-13	18,544	8.624	159,912
Total	\$1,159,499		\$1,322,150

Notes:

- (1) Provided by Risk Management Services.
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Bornhuetter-Ferguson Using Reported Losses
Deductible Losses Limited to \$10,000

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Reported Loss Development Factors (2)	Percentage of Losses Not Yet Reported (3)	Expected Unreported Losses (4)	Limited Losses Reported as of 12/31/12 (5)	Estimated Ultimate Deductible Losses (6)
2003-04	\$133,217	1.000	0.0%	\$0	\$111,286	\$111,286
2004-05	118,783	1.000	0.0%	0	107,841	107,841
2005-06	183,210	1.000	0.0%	0	106,428	106,428
2006-07	106,280	1.000	0.0%	0	126,468	126,468
2007-08	131,026	1.000	0.0%	0	117,856	117,856
2008-09	113,949	1.000	0.0%	0	139,471	139,471
2009-10	251,047	1.001	0.1%	251	170,918	171,169
2010-11	311,775	1.013	1.3%	4,053	174,687	178,740
2011-12	110,355	1.219	17.9%	19,754	85,999	105,753
2012-13	178,675	8.624	88.4%	157,949	18,544	176,493
Total	\$1,638,316			\$182,007	\$1,159,499	\$1,341,506

Notes:

- (1) Page 44, Column (6), adjusted for \$10K limit.
- (2) Page 60, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 60, Column (1).
- (6) $(4) + (5)$.

Monterey Bay Area Self Insurance Authority

**Actuarial Analysis of the
General and Auto Liability Program**

Claims Data Exhibits

DRAFT

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Cumulative Reported Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/12

Program	Months of Development										
	<u>6</u>	<u>18</u>	<u>30</u>	<u>42</u>	<u>54</u>	<u>66</u>	<u>78</u>	<u>90</u>	<u>102</u>	<u>114</u>	<u>126</u>
2003								1,154	1,154	1,154	1,154
2004							538	538	538	538	
2005						427	437	437	437		
2006					618	557	557	557			
2007				451	424	401	401				
2008			662	617	500	500					
2009		541	307	355	405						
2010	151	569	1,025	1,082							
2011	76	819	2,507								
2012	19	278									
2013	55										
	<u>6 - 18</u>	<u>18 - 30</u>	<u>30 - 42</u>	<u>42 - 54</u>	<u>54 - 66</u>	<u>66 - 78</u>	<u>78 - 90</u>	<u>90 - 102</u>	<u>102 - 114</u>	<u>114 - 126</u>	<u>126 - Ult.</u>
3 YR VOL	6.775	1.990	1.030	0.934	0.945	1.007	1.000	1.000	1.000	1.000	
3 YR AVG	9.735	1.810	1.048	0.964	0.949	1.007	1.000	1.000	1.000	1.000	
REFERENCE	6.641	1.671	1.198	1.037	1.014	1.002	1.006	1.003	1.004	1.003	1.000
SELECT	9.735	1.810	1.123	1.037	1.014	1.002	1.002	1.001	1.000	1.000	1.000
CUMULATIVE	20.897	2.147	1.186	1.056	1.019	1.005	1.003	1.001	1.000	1.000	1.000

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Cumulative Paid Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/12

Program Year	Months of Development										
	<u>6</u>	<u>18</u>	<u>30</u>	<u>42</u>	<u>54</u>	<u>66</u>	<u>78</u>	<u>90</u>	<u>102</u>	<u>114</u>	<u>126</u>
2003								1,154	1,154	1,154	1,154
2004							538	538	538	538	
2005						411	437	437	437		
2006					565	557	557	557			
2007				386	406	401	401				
2008			337	497	500	500					
2009		151	255	274	306						
2010	15	122	524	727							
2011	5	194	646								
2012	13	113									
2013	3										
	<u>6 - 18</u>	<u>18 - 30</u>	<u>30 - 42</u>	<u>42 - 54</u>	<u>54 - 66</u>	<u>66 - 78</u>	<u>78 - 90</u>	<u>90 - 102</u>	<u>102 - 114</u>	<u>114 - 126</u>	<u>126 - Ult.</u>
3 YR VOL	12.903	3.048	1.343	1.048	0.992	1.019	1.000	1.000	1.000	1.000	
3 YR AVG	18.074	3.099	1.313	1.059	0.992	1.021	1.000	1.000	1.000	1.000	
REFERENCE	8.242	3.565	1.915	1.165	1.083	1.016	1.004	1.019	1.000	1.025	1.010
SELECT	12.903	3.099	1.313	1.059	1.038	1.019	1.010	1.005	1.005	1.002	1.000
CUMULATIVE	60.052	4.654	1.502	1.144	1.080	1.041	1.022	1.012	1.007	1.002	1.000

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Cumulative # of Reported Losses - 12/31/12

Program	Months of Development									
	<u>6</u>	<u>18</u>	<u>30</u>	<u>42</u>	<u>54</u>	<u>66</u>	<u>78</u>	<u>90</u>	<u>102</u>	<u>114</u>
2004							72	72	72	72
2005						50	51	51	51	
2006					41	40	40	40		
2007				56	56	56	56			
2008			57	55	55	55				
2009		56	61	62	62					
2010	17	46	49	52						
2011	21	121	128							
2012	22	75								
2013	17									
	<u>6 - 18</u>	<u>18 - 30</u>	<u>30 - 42</u>	<u>42 - 54</u>	<u>54 - 66</u>	<u>66 - 78</u>	<u>78 - 90</u>	<u>90 - 102</u>	<u>102 - 114</u>	<u>114 - Ult.</u>
ALLYR VOL	4.033	1.067	1.012	1.000	0.993	1.007	1.000	1.000	1.000	
ALL YR AVG	3.959	1.071	1.014	1.000	0.992	1.007	1.000	1.000	1.000	1.000
SELECT	3.959	1.071	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000
CUMULATIVE	4.299	1.086	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Program Information
Program Years run July 1 to June 30

Program Year	Self-Insured Retention (SIR) (1)	Payroll (\$00's) (2)	Exposure Index (3)	Deductible (4)
2003-04	\$1,000,000	\$401,995	1.000	\$10,000
2004-05	1,000,000	401,860	1.000	10,000
2005-06	1,000,000	429,640	1.000	10,000
2006-07	1,000,000	428,182	1.000	10,000
2007-08	1,000,000	437,000	1.000	10,000
2008-09	1,000,000	470,000	1.000	10,000
2009-10	1,000,000	455,000	1.000	10,000
2010-11	1,000,000	456,468	1.000	10,000
2011-12	1,000,000	457,935	1.000	10,000
2012-13	1,000,000	433,156	1.000	10,000
2013-14	?	433,156	1.000	10,000

Notes:

- (1) Provided by MBASIA.
EPL SIR is \$500,000 claims made starting 2011-12.
- (2) Provided by MBASIA.
- (4) Provided by MBASIA.
Deductible assumed to apply to combined loss & ALAE.
(Unconfirmed).