

# **Monterey Bay Area Self Insurance Authority**

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

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**BAY ACTUARIAL CONSULTANTS**  
**Moraga, California**  
**March 23, 2014**

# Bay Actuarial Consultants

March 23, 2014

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

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# **Monterey Bay Area Self Insurance Authority**

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

### **Introduction**

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# 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 2014-15 Loss Rate.** A projection of the losses expected to be incurred during 2014-15, 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, 2014.
- 3) **Discounting.** We have also discounted the projected 2014-15 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**

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# Monterey Bay Area Self Insurance Authority

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

### Management Summary

#### Projected 2014-15 Losses and Loss Rates

Tables I and II shows the projected 2014-15 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 1.0% 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 the Employment Risk Management Authority (“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 2014-15 discounted loss rate, gross of deductibles (Table I) will be less than **\$2.76**.

Table V on page 11 shows factors to adjust these rates for interest rates other than 1.0%.

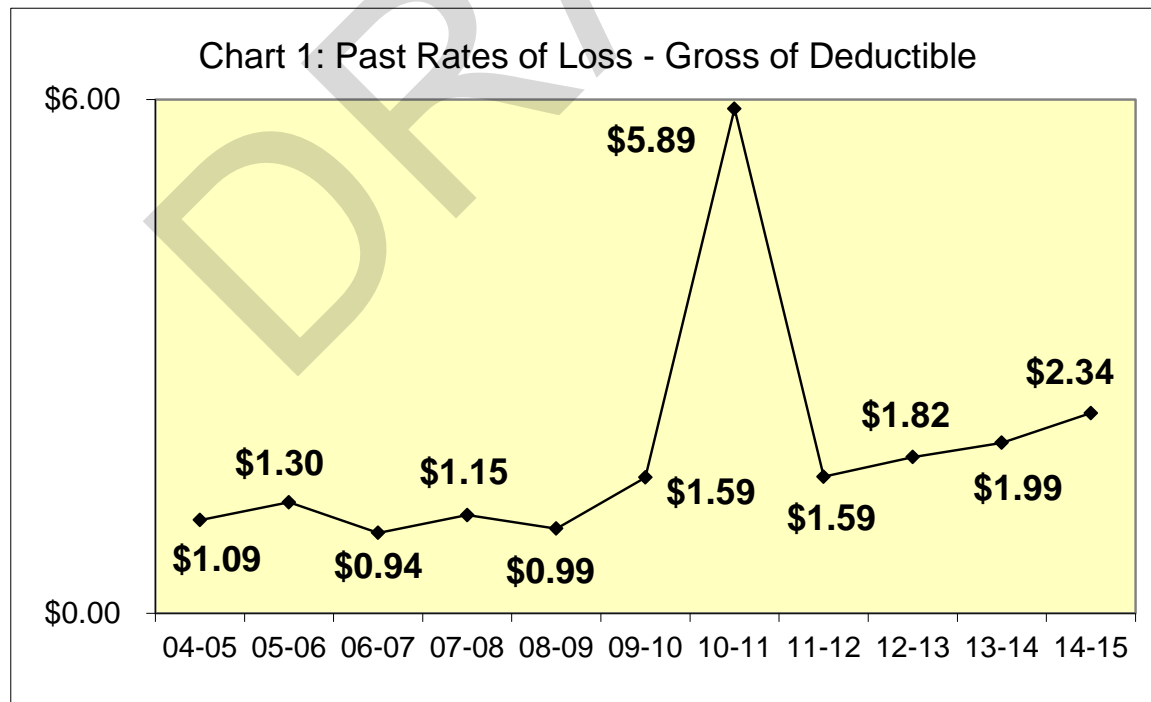
<b>Table I: Projected 2014-15 Losses and Loss Rates</b>				
<b>\$1M SIR (\$500K EPL SIR), Gross of \$10K Deductible, 1.0% Interest Rate</b>				
<u>Probability Level</u>	<u>Undiscounted Losses</u>	<u>Discounted Losses</u>	<u>Undiscounted Loss Rate</u>	<u>Discounted Loss Rate</u>
<b>Central Estimate</b>	<b>\$1,009,739</b>	<b>\$978,437</b>	<b>\$2.34</b>	<b>\$2.26</b>
70%	1,231,882	1,193,693	2.85	2.76
80%	1,514,609	1,467,656	3.50	3.40
90%	1,817,530	1,761,187	4.21	4.07
<b>2013-14 C.E.</b>	<b>\$989,579</b>	<b>\$958,902</b>	<b>\$2.28</b>	<b>\$2.21</b>
% Change from 13-14	+2.0%	+2.0%	+2.6%	+2.3%

<b>Table II: Projected 2014-15 Losses and Loss Rates</b> <b>\$1M SIR (\$500K EPL SIR), NET of \$10K Deductible, 1.0% Interest Rate</b>				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
<b>Central Estimate</b>	<b>\$860,198</b>	<b>\$831,811</b>	<b>\$1.99</b>	<b>\$1.92</b>
70%	1,075,247	1,039,764	2.49	2.41
80%	1,376,317	1,330,898	3.18	3.08
90%	1,720,396	1,663,623	3.98	3.85
<b>2013-14 C.E.</b>	<b>\$835,274</b>	<b>\$807,710</b>	<b>\$1.93</b>	<b>\$1.86</b>
% Change from 13-14	+3.0%	+3.0%	+3.1%	+3.2%

The \$10,000 deductible rates in Table II are about 15% lower than the Table I rates.

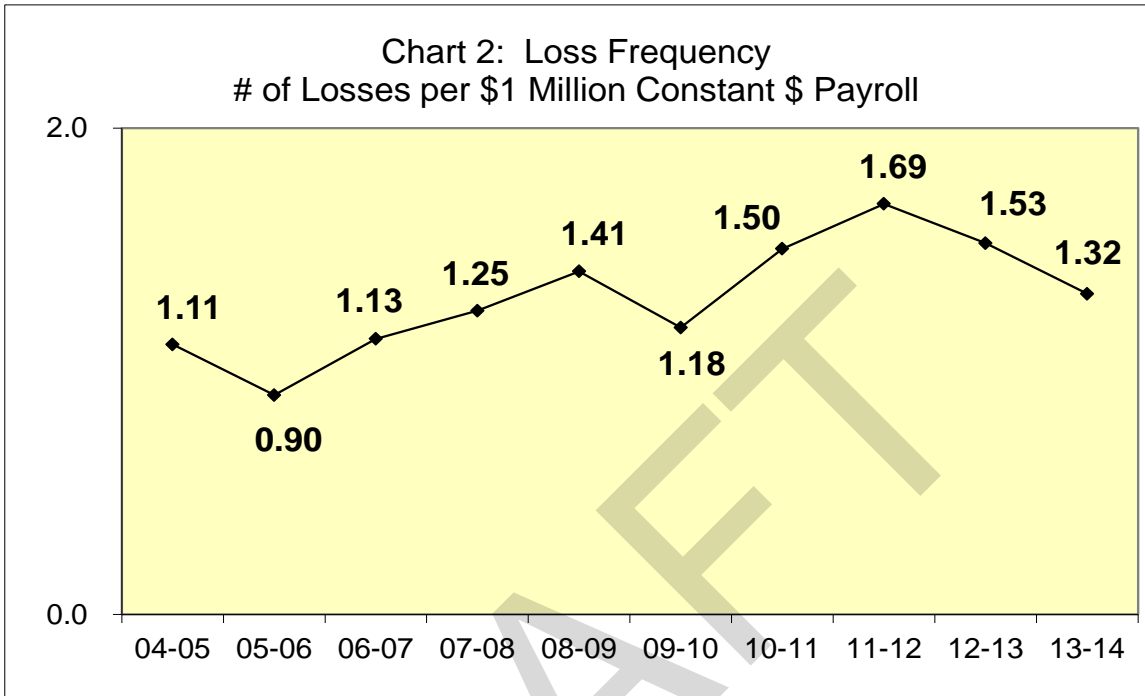
### The Authority's Past Rates of Loss

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 **\$2.34** projected for 2014-15 in Chart 1 matches the undiscounted central estimate rate in Table I.



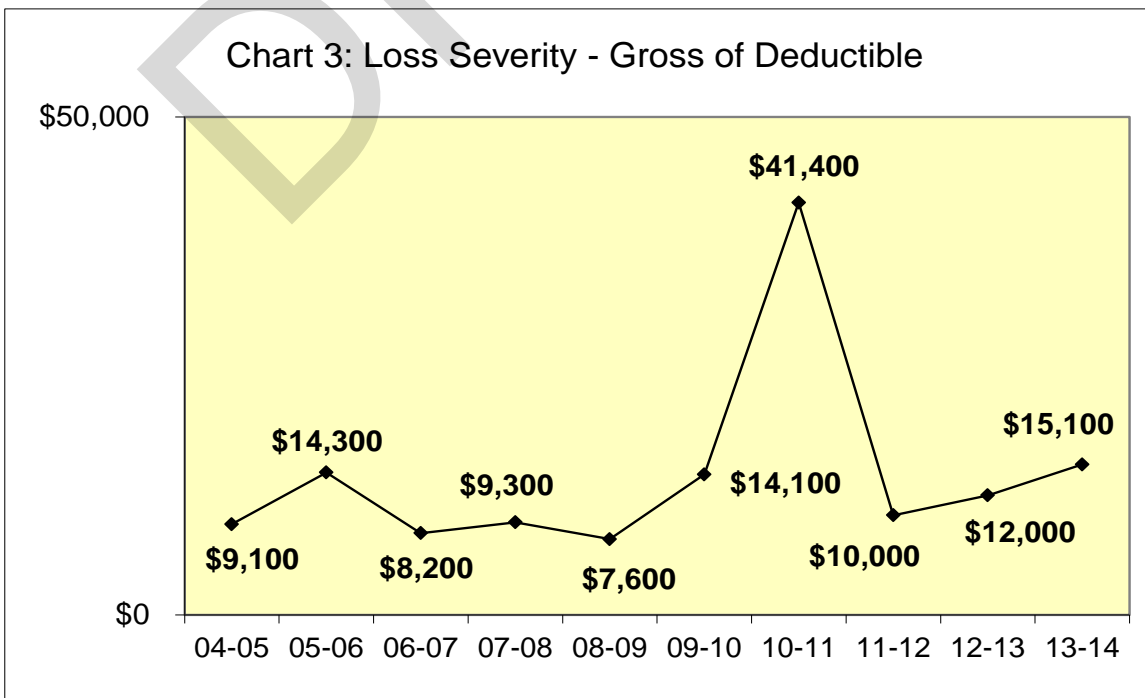
### Loss Frequency

Loss “frequency” is the number of losses divided by 2013 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 – 6/30/14

We project that the Authority's liability for unpaid losses, undiscounted, will be **\$2,274,000** on June 30, 2014, or **\$2,232,000** if discounted at 1.0% 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.

<b>Table III: Projected Liability for Unpaid Losses As of June 30, 2014 – Net of Deductibles</b>		
Probability <u>Level</u>	Undiscounted <u>Losses</u>	Discounted <u>at 1.0%</u>
50%	2,114,202	2,076,146
<b>Central Estimate</b>	<b>\$2,274,282</b>	<b>\$2,232,415</b>
60%	2,318,801	2,277,063
70%	2,591,602	2,544,953
80%	2,909,869	2,857,491
90%	3,410,003	3,348,623

Table IV shows the projected liability gross of deductibles.

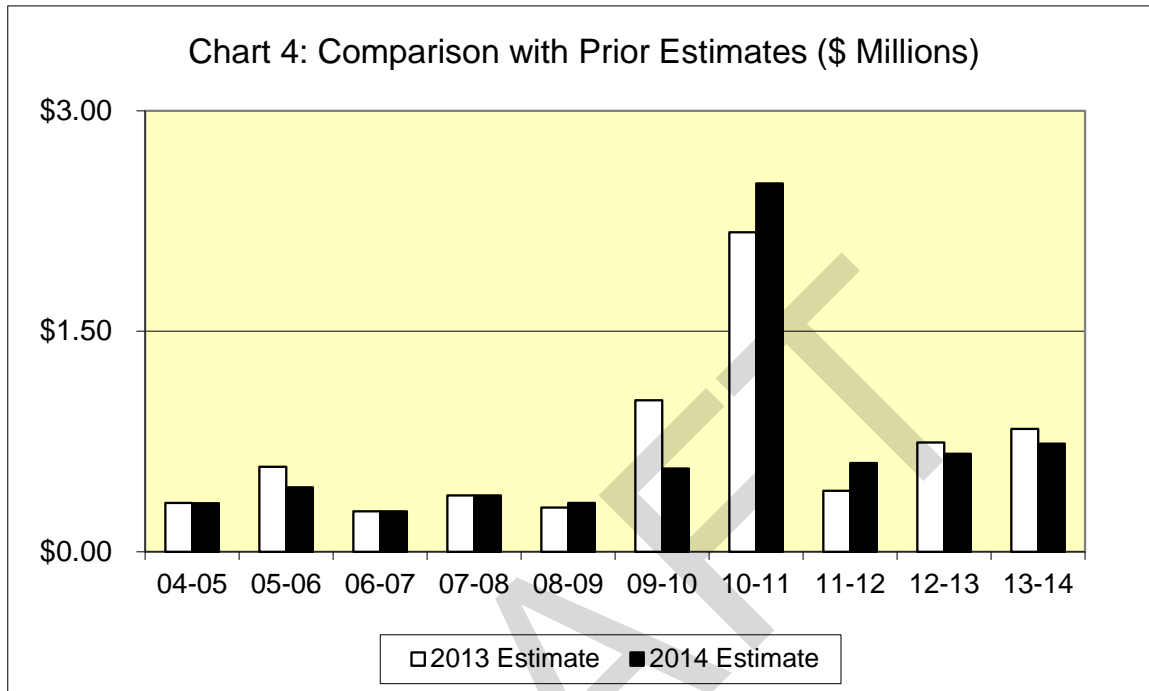
<b>Table IV: Projected Liability for Unpaid Losses As of June 30, 2014 – Gross of Deductibles</b>		
Probability <u>Level</u>	Undiscounted <u>Losses</u>	Discounted <u>at 1.0%</u>
50%	2,246,902	2,207,377
<b>Central Estimate</b>	<b>\$2,417,030</b>	<b>\$2,373,524</b>
60%	2,464,344	2,420,994
70%	2,754,267	2,705,817
80%	3,092,510	3,038,110
90%	3,624,036	3,560,286

### ULAE Liability

We estimate the liability for unpaid unallocated loss adjustment expenses ("ULAE") will be \$129,000 on June 30, 2014. See page 20.

## Comparison with 2013 Estimates

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



The overall reduction in the estimates, for all years through 2012-13, was \$128,000. The big drop in the 2009-10 estimate was due to an employment liability claim that was estimated at \$435,000 in last year's data. That claim settled during 2013 for only \$93,000. After six months of actual claims experience (through December 31, 2013) we have lowered the estimate for 2013-14 to \$735,000. Last year's preliminary projection was \$835,000.

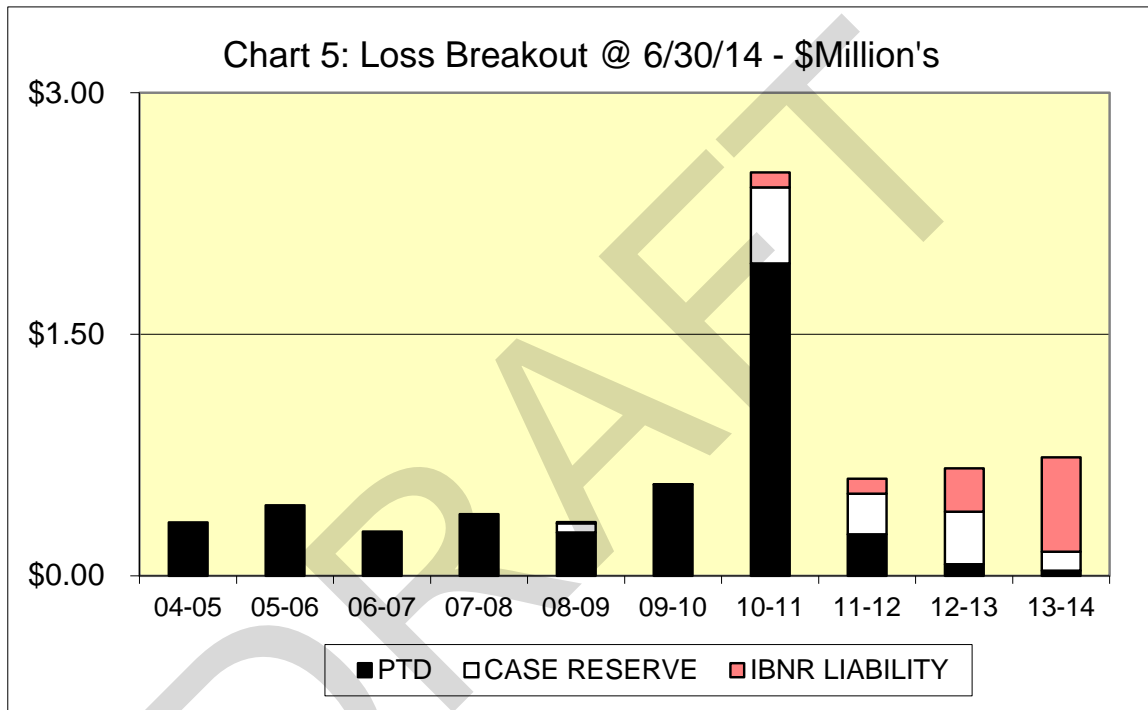
### Reconciliation of 12/31/12 & 12/31/13 Estimates

These estimates are based on analysis of the 12/31/13 data. Last year we used 12/31/12 data and estimated a gross liability of \$3.300 million on that date. Claims expenditures were \$1,536,000 during 2013. We reduced the losses estimates for 12/31/12 and prior by \$95,000 in this report. We estimate the losses incurred during 2013 at \$825,000.

Therefore starting with last year's 12/31/12 liability estimate, subtracting the claims payments and the change in the estimates, and adding the 2013 losses produces \$2.494 million as the estimated liability on 12/31/13. This matched the direct calculation shown on page 25.

### Loss Breakout as of 6/30/14

In Table III we projected that the Authority's 6/30/14 liability, net of deductibles, would be **\$2,274,000**. This comprises **\$1,228,000** in case reserves for known claims and an IBNR liability of **\$1,046,000**. 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 \$0.85 of IBNR liability for every \$1.00 of case reserves. Total IBNR is up 13% from last year while case reserves are down 35%.



### Short-Term Liability

Short-term liabilities are those expected to be discharged within twelve months. The total projected 6/30/14 liability of **\$2,274,000** comprises **\$808,000** of short-term and **\$1,466,000** of long-term liabilities.

### Interest Rates

The discounted liabilities and rates in this report were discounted at 1.0% interest. Here are the adjustments to make for different interest rate assumptions:

Interest Rate	0.0%	0.51%	1.0%	1.07%	1.5%
Gross Rates	+3.2%	+0.0%	+0.0%	-0.2%	-1.5%
Net Rates	+3.4%	+1.7%	+0.0%	-0.3%	-1.7%
Liabilities	+1.8%	+0.9%	+0.0%	-0.2%	-0.9%

The Table includes columns for 0.51% and 1.07% interest rates. Those are the “risk-free” interest rates obtained by calculating the overall yield on a portfolio of US Treasuries selected to mature to match the future claims expenditures. The portfolio that matches the payments on the 2014-15 losses yields 1.07% and the portfolio matching the 6/30/14 liability expenditures yields 0.51%.

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# **Monterey Bay Area Self Insurance Authority**

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

### **Technical Approach**

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# 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, 2014. Summary Exhibit 2 shows our projected rate for the 2014-15 program year, which runs from July 1, 2013 to June 30, 2014. Summary Exhibit 3 shows the projected unpaid losses as of June 30, 2014 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, 2014.

##### ***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 2014-15 loss rate.

***Future Loss Exhibits***

These exhibits show the projection of the expected rate for 2014-15.

***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.

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**Monterey Bay Area Self Insurance Authority**

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

**Summary Exhibits**

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Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Unpaid Losses as of 06/30/14  
**Losses Limited to SIR, NET of \$10K Deductible**

	<u>06/30/14</u>
(1) Projected Unpaid Losses:	\$2,274,282
(2) Discounted Value of Unpaid Losses: (Assuming 1.0% Interest Rate)	\$2,232,415

**Probability Levels for 06/30/14 Liabilities**

Probability Level <u>(3)</u>	Probability Factor <u>(4)</u>	Discounted * Liability <u>(5)</u>
50%	0.93	2,076,146
<b>Central Estimate</b>	<b>1.00</b>	<b>\$2,232,415</b>
60%	1.02	2,277,063
70%	1.14	2,544,953
80%	1.28	2,857,491
90%	1.50	3,348,623

\* Multiply by 1.018 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 2014-15  
Losses Limited to \$1,000,000, NET of \$10K Deductible

(1) Discounted Loss Rate:  
 (as of July 1, 2014, 1.0% interest rate)

Loss Rates  
\$1.92

<u>Probability Levels</u>		
Probability Level <u>(2)</u>	Probability Factor <u>(3)</u>	Discounted * Rate <u>(4)</u>
50%	0.80	1.54
<b>Central Estimate</b>	<b>1.00</b>	<b>\$1.92</b>
60%	1.00	1.92
70%	1.25	2.40
80%	1.56	3.00
90%	2.01	3.86

\* 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, 2014  
**Losses Limited to SIR, NET of \$10K Deductible**

Program Year	Undiscounted Value: Claims Liabilities as of 6/30/14 <u>(1)</u>	Discounted (1.0% Interest) Claims Liabilities as of 6/30/14 <u>(2)</u>	Estimated Ultimate Losses <u>(3)</u>
2004-05	\$0	\$0	\$330,236
2005-06	0	0	437,893
2006-07	0	0	274,835
2007-08	0	0	382,169
2008-09	64,129	63,811	332,289
2009-10	0	0	566,348
2010-11	566,245	556,795	2,505,322
2011-12	344,034	339,406	601,997
2012-13	595,463	585,558	666,126
2013-14	704,410	686,845	735,237
Total	\$2,274,282	\$2,232,415	\$6,832,450

## 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%**

	Case Reserves with <u>Development</u>	"True" <u>IBNR</u>	<u>Total</u>
(2) ULAE Ratio:	4.3%	8.7%	
(3) Estimated Unpaid Losses as of 12/31/13:	\$2,001,593	\$492,803	\$2,494,396
(4) Estimated Unpaid ULAE as of 12/31/13:	\$86,068	\$42,766	\$128,834
(5) Discounted Unpaid ULAE as of 12/31/13: ( 1.0% interest rate)			\$126,515

We project that the 6/30/14 ULAE liability will equal the 12/31/13 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**

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Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2014  
**Losses Limited to SIR, NET of \$10K Deductible**

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/14 (2)	Projected Case Reserves 6/30/14 (3)	Projected Losses Reported as of 6/30/14 (4)	Projected IBNR as of 6/30/14 (5)	Projected Unpaid Losses as of 6/30/14 (6)
2004-05	\$330,236	\$330,236	\$0	\$330,236	\$0	\$0
2005-06	437,893	437,893	0	437,893	0	0
2006-07	274,835	274,834	0	274,834	0	0
2007-08	382,169	382,169	0	382,169	0	0
2008-09	332,289	268,160	58,011	326,171	6,118	64,129
2009-10	566,348	566,348	0	566,348	0	0
2010-11	2,505,322	1,939,076	473,288	2,412,365	92,957	566,245
2011-12	601,997	257,963	252,124	510,087	91,910	344,034
2012-13	666,126	70,663	325,931	396,594	269,532	595,463
2013-14	735,237	30,827	118,814	149,641	585,596	704,410
<b>Total</b>	<b>\$6,832,450</b>	<b>\$4,558,168</b>	<b>\$1,228,169</b>	<b>\$5,786,337</b>	<b>\$1,046,113</b>	<b>\$2,274,282</b>

## 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, 2014  
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/14 (2)	Projected Case Reserves 6/30/14 (3)	Projected Losses Reported as of 6/30/14 (4)	Projected IBNR as of 6/30/14 (5)	Projected Unpaid Losses as of 6/30/14 (6)
2004-05	\$436,606	\$436,606	\$0	\$436,606	\$0	\$0
2005-06	556,750	556,750	0	556,750	0	0
2006-07	401,303	401,303	0	401,303	0	0
2007-08	500,365	500,365	0	500,365	0	0
2008-09	464,000	399,871	58,011	457,882	6,118	64,129
2009-10	721,403	721,403	0	721,403	0	0
2010-11	2,690,000	2,115,176	481,735	2,596,910	93,090	574,824
2011-12	730,000	371,332	265,769	637,101	92,899	358,668
2012-13	790,000	158,705	347,972	506,677	283,323	631,295
2013-14	860,000	71,887	138,057	209,944	650,056	788,113
<b>Total</b>	<b>\$8,150,427</b>	<b>\$5,733,397</b>	<b>\$1,291,544</b>	<b>\$7,024,941</b>	<b>\$1,125,486</b>	<b>\$2,417,030</b>

## 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 1/1/14 and 6/30/14  
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Losses Paid as of 12/31/13 (1)	Projected Losses Paid 1/1/14 - 6/30/14 (2)	Projected Losses Paid as of 6/30/14 (3)	Losses Reported as of 12/31/13 (4)	Projected Losses Reported 1/1/14 - 6/30/14 (5)	Projected Losses Reported as of 6/30/14 (6)
2004-05	\$436,606	\$0	\$436,606	\$436,606	\$0	\$436,606
2005-06	556,750	0	556,750	556,750	0	556,750
2006-07	401,303	0	401,303	401,303	0	401,303
2007-08	500,365	0	500,365	500,365	0	500,365
2008-09	372,092	27,779	399,871	451,682	6,200	457,882
2009-10	721,403	0	721,403	721,403	0	721,403
2010-11	1,932,193	182,983	2,115,176	2,500,485	96,425	2,596,910
2011-12	177,495	193,838	371,332	593,133	43,968	637,101
2012-13	123,854	34,851	158,705	343,453	163,224	506,677
2013-14	3,972	67,915	71,887	7,209	202,735	209,944
<b>Total</b>	<b>\$5,226,032</b>	<b>\$507,365</b>	<b>\$5,733,397</b>	<b>\$6,512,388</b>	<b>\$512,552</b>	<b>\$7,024,941</b>

## 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, 2013  
Losses Limited to SIR, Gross of \$10K Deductible

Program Year	Estimated Ultimate Losses (1)	Losses Paid as of 12/31/13 (2)	Case Reserves 12/31/13 (3)	Losses Reported as of 12/31/13 (4)	Estimated IBNR as of 12/31/13 (5)	Estimated Unpaid Losses as of 12/31/13 (6)
2004-05	\$436,606	\$436,606	\$0	\$436,606	\$0	\$0
2005-06	556,750	556,750	0	556,750	0	0
2006-07	401,303	401,303	0	401,303	0	0
2007-08	500,365	500,365	0	500,365	0	0
2008-09	464,000	372,092	79,590	451,682	12,318	91,908
2009-10	721,403	721,403	0	721,403	0	0
2010-11	2,690,000	1,932,193	568,292	2,500,485	189,515	757,807
2011-12	730,000	177,495	415,639	593,133	136,867	552,505
2012-13	790,000	123,854	219,599	343,453	446,547	666,146
2013-14	430,000	3,972	3,237	7,209	422,791	426,028
Total	\$7,720,427	\$5,226,032	\$1,286,357	\$6,512,388	\$1,208,039	\$2,494,395

## Notes:

- (1) Page 30, Column (6).  
2013-14 entry adjusted for partial year through 12/31/13.
- (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, 2014  
Losses Limited to \$10K Deductible

Program Year	Estimated Ultimate Deductibles (1)	Projected Ded Paid as of 6/30/14 (2)	Projected Case Reserves 6/30/14 (3)	Projected Ded Reported as of 6/30/14 (4)	Projected Deductible IBNR as of 6/30/14 (5)	Projected Deductible Losses as of 6/30/14 (6)
2004-05	\$106,370	\$106,370	\$0	\$106,370	\$0	\$0
2005-06	118,857	118,857	0	118,857	0	0
2006-07	126,468	126,468	0	126,468	0	0
2007-08	118,196	118,196	0	118,196	0	0
2008-09	131,711	131,711	0	131,711	0	0
2009-10	155,055	155,055	0	155,055	0	0
2010-11	184,678	176,099	8,446	184,545	133	8,579
2011-12	128,003	113,369	13,645	127,014	989	14,634
2012-13	123,874	88,042	22,041	110,084	13,790	35,832
2013-14	124,763	41,060	19,243	60,303	64,460	83,703
<b>Total</b>	<b>\$1,317,977</b>	<b>\$1,175,229</b>	<b>\$63,375</b>	<b>\$1,238,604</b>	<b>\$79,373</b>	<b>\$142,748</b>

## 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 1/1/14 and 6/30/14  
Losses Limited to \$10K Deductible

Program Year	Ded Paid as of 12/31/13 (1)	Projected Losses Paid 1/1/14 - 6/30/14 (2)	Projected Losses Paid as of 6/30/14 (3)	Losses Reported as of 12/31/13 (4)	Projected Losses Reported 1/1/14 - 6/30/14 (5)	Projected Losses Reported as of 6/30/14 (6)
2004-05	\$106,370	\$0	\$106,370	\$106,370	\$0	\$106,370
2005-06	118,857	0	118,857	118,857	0	118,857
2006-07	126,468	0	126,468	126,468	0	126,468
2007-08	118,196	0	118,196	118,196	0	118,196
2008-09	131,711	0	131,711	131,711	0	131,711
2009-10	155,055	0	155,055	155,055	0	155,055
2010-11	171,081	5,018	176,099	184,412	133	184,545
2011-12	107,938	5,431	113,369	126,204	810	127,014
2012-13	69,116	18,926	88,042	96,735	13,348	110,084
2013-14	3,972	37,088	41,060	7,209	53,094	60,303
Total	\$1,108,766	\$66,463	\$1,175,229	\$1,171,218	\$67,385	\$1,238,604

## 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, 2013  
Losses Limited to \$10K Deductible

Program Year	Estimated Ultimate Deductibles (1)	Ded Paid as of 12/31/13 (2)	Case Reserves 12/31/13 (3)	Ded Reported as of 12/31/13 (4)	Estimated Deductible IBNR as of 12/31/13 (5)	Estimated Deductible Losses as of 12/31/13 (6)
2004-05	\$106,370	\$106,370	\$0	\$106,370	\$0	\$0
2005-06	118,857	118,857	0	118,857	0	0
2006-07	126,468	126,468	0	126,468	0	0
2007-08	118,196	118,196	0	118,196	0	0
2008-09	131,711	131,711	0	131,711	0	0
2009-10	155,055	155,055	0	155,055	0	0
2010-11	184,678	171,081	13,331	184,412	266	13,597
2011-12	128,003	107,938	18,265	126,204	1,800	20,065
2012-13	123,874	69,116	27,619	96,735	27,139	54,758
2013-14	62,382	3,972	3,237	7,209	55,172	58,409
<b>Total</b>	<b>\$1,255,595</b>	<b>\$1,108,766</b>	<b>\$62,453</b>	<b>\$1,171,218</b>	<b>\$84,377</b>	<b>\$146,830</b>

## Notes:

- (1) Page 59, Column (3).  
2013-14 adjusted for partial year through 12/31/13.
- (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)
2004-05	\$436,606	\$437,479	\$436,606	\$436,606	\$559,255	\$436,606
2005-06	556,750	560,653	556,750	556,750	469,024	556,750
2006-07	401,704	406,136	401,303	402,006	608,315	401,303
2007-08	501,867	511,456	500,365	502,542	692,197	500,365
2008-09	453,920	386,423	463,859	455,428	807,167	464,000
2009-10	735,099	798,220	721,403	736,088	696,584	721,403
2010-11	2,641,069	2,227,538	2,881,809	2,542,797	916,349	2,690,000
2011-12	699,607	354,563	775,183	718,348	1,062,023	730,000
2012-13	765,751	672,241	801,756	811,860	991,064	790,000
2013-14	142,420	325,771	87,185	839,767	883,500	860,000
Total	\$7,334,793	\$6,680,480	\$7,626,218	\$8,002,191	\$7,685,478	\$8,150,427

## 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 12/31/13 (1)	Reported Development Factor as of 12/31/13 (2)	Projected Ultimate Losses (3)
2004-05	\$436,606	1.000	\$436,606
2005-06	556,750	1.000	556,750
2006-07	401,303	1.001	401,704
2007-08	500,365	1.003	501,867
2008-09	451,682	1.005	453,920
2009-10	721,403	1.019	735,099
2010-11	2,500,485	1.056	2,641,069
2011-12	593,133	1.180	699,607
2012-13	343,453	2.230	765,751
2013-14	7,209	19.756	142,420
Total	\$6,512,388		\$7,334,793

## 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 12/31/13 (1)	Paid Development Factor as of 12/31/13 (2)	Projected Ultimate Losses (3)
2004-05	\$436,606	1.002	\$437,479
2005-06	556,750	1.007	560,653
2006-07	401,303	1.012	406,136
2007-08	500,365	1.022	511,456
2008-09	372,092	1.039	386,423
2009-10	721,403	1.106	798,220
2010-11	1,932,193	1.153	2,227,538
2011-12	177,495	1.998	354,563
2012-13	123,854	5.428	672,241
2013-14	3,972	82.016	325,771
Total	\$5,226,032		\$6,680,480

## 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 12/31/13 (1)	Paid Development Factor as of 12/31/13 (2)	IBNR to Case Reserves Ratio (3)	Case Reserves 12/31/13 (4)	Estimated IBNR as of 12/31/13 (5)	Estimated Ultimate Losses (6)
2004-05	1.000	1.002	0.000	\$0	\$0	\$436,606
2005-06	1.000	1.007	0.000	0	0	556,750
2006-07	1.001	1.012	0.092	0	0	401,303
2007-08	1.003	1.022	0.160	0	0	500,365
2008-09	1.005	1.039	0.153	79,590	12,177	463,859
2009-10	1.019	1.106	0.240	0	0	721,403
2010-11	1.056	1.153	0.671	568,292	381,324	2,881,809
2011-12	1.180	1.998	0.438	415,639	182,050	775,183
2012-13	2.230	5.428	2.087	219,599	458,303	801,756
2013-14	19.756	82.016	24.707	3,237	79,976	87,185
Total				\$1,286,357	\$1,113,830	\$7,626,218

## 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) x (4), rounded.
- (6) (5) + 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 12/31/13 (5)	Estimated Ultimate Losses (6)
2004-05	\$659,730	1.000	0.0%	\$0	\$436,606	\$436,606
2005-06	680,785	1.000	0.0%	0	556,750	556,750
2006-07	702,718	1.001	0.1%	703	401,303	402,006
2007-08	725,527	1.003	0.3%	2,177	500,365	502,542
2008-09	749,215	1.005	0.5%	3,746	451,682	455,428
2009-10	772,902	1.019	1.9%	14,685	721,403	736,088
2010-11	798,343	1.056	5.3%	42,312	2,500,485	2,542,797
2011-12	823,785	1.180	15.2%	125,215	593,133	718,348
2012-13	850,104	2.230	55.1%	468,407	343,453	811,860
2013-14	877,300	19.756	94.9%	832,558	7,209	839,767
	\$7,640,409			\$1,489,803	\$6,512,388	\$8,002,191

## 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> 2013-14 Loss (1)	Factor to Remove Trend (2)	<i>A Priori</i> Ultimate Losses (3)
2004-05	\$877,300	0.752	\$659,730
2005-06	877,300	0.776	680,785
2006-07	877,300	0.801	702,718
2007-08	877,300	0.827	725,527
2008-09	877,300	0.854	749,215
2009-10	877,300	0.881	772,902
2010-11	877,300	0.910	798,343
2011-12	877,300	0.939	823,785
2012-13	877,300	0.969	850,104
2013-14	877,300	1.000	877,300
Total			\$7,640,409

## 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)
2004-05	\$436,606	1.330	\$580,835
2005-06	556,750	1.289	717,565
2006-07	401,303	1.249	501,039
2007-08	500,365	1.209	605,038
2008-09	451,682	1.171	529,092
2009-10	721,403	1.135	818,664
2010-11	2,500,485	1.099	2,749,214
2011-12	593,133	1.065	631,936
2012-13	738,524	1.032	762,323
2013-14	178,012	1.000	178,012
Average			\$807,372
04/05-12/13			\$877,300
	(4) A Priori 2013-14 Losses:		\$877,300

## Notes:

- (1) Page 37, Column (3).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Average of (3) excluding 2013-14.

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)
2004-05	\$436,606	\$437,479	\$436,606
2005-06	556,750	560,653	556,750
2006-07	401,704	406,136	401,303
2007-08	501,867	511,456	500,365
2008-09	453,920	386,423	451,682
2009-10	735,099	798,220	721,403
2010-11	2,641,069	2,227,538	2,500,485
2011-12	699,607	354,563	593,133
2012-13	765,751	672,241	738,524
2013-14	142,420	325,771	178,012
Total	\$7,334,793	\$6,680,480	\$7,078,262

## 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)
2004-05	\$15,500	0.752	48	\$559,255
2005-06	15,500	0.776	39	469,024
2006-07	15,500	0.801	49	608,315
2007-08	15,500	0.827	54	692,197
2008-09	15,500	0.854	61	807,167
2009-10	15,500	0.881	51	696,584
2010-11	15,500	0.910	65	916,349
2011-12	15,500	0.939	73	1,062,023
2012-13	15,500	0.969	66	991,064
2013-14	15,500	1.000	57	883,500
Total				\$7,685,478

## Notes:

- (1) Page 39, Item (5).
- (2)  $1.000 / [\text{Page 39, Column (2)}]$ .
- (3) Page 40, Column (3).
- (4)  $(1) \times (2) \times (3)$ .

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)
2004-05	\$436,606	1.330	48	\$12,101
2005-06	556,750	1.289	39	18,399
2006-07	401,303	1.249	49	10,225
2007-08	500,365	1.209	54	11,204
2008-09	451,682	1.171	61	8,674
2009-10	721,403	1.135	51	16,052
2010-11	2,500,485	1.099	65	42,296
2011-12	593,133	1.065	73	8,657
2012-13	738,524	1.032	66	11,550
2013-14	178,012	1.000	57	3,123
Total	\$7,078,262		563	\$14,228
04/05-12/13	\$6,900,250		506	\$15,462
			(5) Selected Severity:	\$15,500

## Notes:

- (1) Page 37, Column (3).
- (2) Estimated by BAC.
- (3) Page 40, Column (3).
- (4)  $(1) \times (2) / (3)$ .
- (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)
2004-05	48		48
2005-06	39		39
2006-07	49		49
2007-08	54		54
2008-09	61		61
2009-10	51		51
2010-11	65		65
2011-12	73		73
2012-13	66		66
2013-14	58	57	57
Total	564		563

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 12/31/13 (1)	Development Factors as of 12/31/13 (2)	Projected Ultimate Claims (3)
2004-05	48	1.000	48
2005-06	39	1.000	39
2006-07	49	1.000	49
2007-08	54	1.000	54
2008-09	61	1.000	61
2009-10	51	1.000	51
2010-11	65	1.000	65
2011-12	72	1.020	73
2012-13	62	1.064	66
2013-14	14	4.129	58
Average			56
04/05-12/13 Average			56

## 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

Program Year	A Priori Claim Count (1)	Claim Development Factor (2)	Estimated Percentage of Claims Unreported (3)	Estimated Unreported Claims (4)	Reported Claims as of 12/31/13 (5)	Projected Ultimate Claims (6)
2013-14	56	4.129	75.8%	43	14	57

## Notes:

- (1) Page 41, Column (3), average 2004-05 to 2012-13.
- (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)
2004-05	\$436,606	\$436,838	\$436,606	\$436,606	\$437,266	\$436,606
2005-06	556,750	557,970	556,750	556,750	558,112	556,750
2006-07	401,468	403,273	401,303	401,303	404,817	401,303
2007-08	500,831	505,791	500,365	501,091	508,346	500,365
2008-09	452,262	379,016	457,651	452,431	385,578	458,000
2009-10	698,092	730,231	691,093	698,580	731,525	691,093
2010-11	1,305,523	1,202,385	1,341,796	1,308,460	1,225,359	1,320,000
2011-12	661,129	331,455	711,174	677,983	559,731	680,000
2012-13	627,932	541,512	656,162	717,404	760,314	670,000
2013-14	107,105	206,478	70,016	825,730	864,603	850,000
<b>Total</b>	<b>\$5,747,698</b>	<b>\$5,294,949</b>	<b>\$5,822,915</b>	<b>\$6,576,337</b>	<b>\$6,435,650</b>	<b>\$6,564,117</b>

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 12/31/13 (1)	Reported Development Factor as of 12/31/13 (2)	Projected Ultimate Losses (3)
2004-05	\$436,606	1.000	\$436,606
2005-06	556,750	1.000	556,750
2006-07	401,303	1.000	401,468
2007-08	500,365	1.001	500,831
2008-09	451,682	1.001	452,262
2009-10	691,093	1.010	698,092
2010-11	1,267,095	1.030	1,305,523
2011-12	593,133	1.115	661,129
2012-13	343,453	1.828	627,932
2013-14	7,209	14.857	107,105
Total	\$5,248,688		\$5,747,698

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 12/31/13 (1)	Paid Development Factor as of 12/31/13 (2)	Projected Ultimate Losses (3)
2004-05	\$436,606	1.001	\$436,838
2005-06	556,750	1.002	557,970
2006-07	401,303	1.005	403,273
2007-08	500,365	1.011	505,791
2008-09	372,092	1.019	379,016
2009-10	691,093	1.057	730,231
2010-11	1,077,015	1.116	1,202,385
2011-12	177,495	1.867	331,455
2012-13	123,854	4.372	541,512
2013-14	3,972	51.983	206,478
<b>Total</b>	<b>\$4,340,544</b>		<b>\$5,294,949</b>

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 12/31/13 (4)	Estimated IBNR as of 12/31/13 (5)	Estimated Ultimate Losses (6)
2004-05	1.000	1.001	0.000	\$0	\$0	\$436,606
2005-06	1.000	1.002	0.000	0	0	556,750
2006-07	1.000	1.005	0.092	0	0	401,303
2007-08	1.001	1.011	0.095	0	0	500,365
2008-09	1.001	1.019	0.075	79,590	5,969	457,651
2009-10	1.010	1.057	0.230	0	0	691,093
2010-11	1.030	1.116	0.393	190,079	74,701	1,341,796
2011-12	1.115	1.867	0.284	415,639	118,041	711,174
2012-13	1.828	4.372	1.424	219,599	312,709	656,162
2013-14	14.857	51.983	19.403	3,237	62,807	70,016
Total				\$908,144	\$574,227	\$5,822,915

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 12/31/13 (5)	Estimated Ultimate Losses (6)
2004-05	\$659,730	1.000	0.0%	\$0	\$436,606	\$436,606
2005-06	680,785	1.000	0.0%	0	556,750	556,750
2006-07	702,718	1.000	0.0%	0	401,303	401,303
2007-08	725,527	1.001	0.1%	726	500,365	501,091
2008-09	749,215	1.001	0.1%	749	451,682	452,431
2009-10	748,746	1.010	1.0%	7,487	691,093	698,580
2010-11	1,426,383	1.030	2.9%	41,365	1,267,095	1,308,460
2011-12	823,785	1.115	10.3%	84,850	593,133	677,983
2012-13	825,499	1.828	45.3%	373,951	343,453	717,404
2013-14	877,300	14.857	93.3%	818,521	7,209	825,730
<b>Total</b>	<b>\$8,219,689</b>			<b>\$1,327,649</b>	<b>\$5,248,688</b>	<b>\$6,576,337</b>

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 12/31/13 (5)	Estimated Ultimate Losses (6)
2004-05	\$659,730	1.001	0.1%	\$660	\$436,606	\$437,266
2005-06	680,785	1.002	0.2%	1,362	556,750	558,112
2006-07	702,718	1.005	0.5%	3,514	401,303	404,817
2007-08	725,527	1.011	1.1%	7,981	500,365	508,346
2008-09	749,215	1.019	1.8%	13,486	372,092	385,578
2009-10	748,746	1.057	5.4%	40,432	691,093	731,525
2010-11	1,426,383	1.116	10.4%	148,344	1,077,015	1,225,359
2011-12	823,785	1.867	46.4%	382,236	177,495	559,731
2012-13	825,499	4.372	77.1%	636,460	123,854	760,314
2013-14	877,300	51.983	98.1%	860,631	3,972	864,603
<b>Total</b>	<b>\$8,219,689</b>			<b>\$2,095,106</b>	<b>\$4,340,544</b>	<b>\$6,435,650</b>

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 2014-15  
**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)
2014-15	\$1.72	1.356	\$2.34

Based on \$1M Limit Analysis

Program Year	1M Limit Loss Rate (4)	Factor for \$1M SIR (5)	Projected \$1M SIR Loss Rate (6)
2014-15	\$2.21	1.000	\$2.21

Program Year	Selected 2014-15 \$1M SIR Loss Rate (7)	Projected 2014-15 Payroll (\$00's) (8)	Projected Ultimate Losses (9)
2014-15	<b>\$2.34</b>	\$432,210	\$1,009,739

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 2014-15 (3)
2004-05	\$436,606	1.340	\$585,026
2005-06	556,750	1.300	723,976
2006-07	401,303	1.262	506,427
2007-08	500,365	1.225	612,972
2008-09	458,000	1.189	544,708
2009-10	691,093	1.155	798,163
2010-11	1,320,000	1.122	1,481,046
2011-12	680,000	1.090	741,218
2012-13	670,000	1.059	709,503
2013-14	850,000	1.029	874,740
Average 04-05 through 12-13:			\$744,782
(4) Projected 2014-15 Payroll (\$00's):			\$432,210
(5) Projected 2014-15 \$250K Limit Rate:			\$1.72

## 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 2014-15 (3)
2004-05	\$436,606	1.374	\$599,693
2005-06	556,750	1.331	740,862
2006-07	401,303	1.289	517,306
2007-08	500,365	1.248	624,682
2008-09	464,000	1.209	561,167
2009-10	721,403	1.172	845,244
2010-11	2,690,000	1.135	3,053,604
2011-12	730,000	1.100	803,008
2012-13	790,000	1.066	841,933
2013-14	860,000	1.032	887,922
	Average 04-05 through 12-13:		\$954,167
	(4) Projected 2014-15 Payroll (\$00's):		\$432,210
	(5) Projected 2014-15 \$1M Limit Rate:		\$2.21

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, 2014  
 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)
2004-05	\$0	1.000	\$0
2005-06	0	1.000	0
2006-07	0	1.000	0
2007-08	0	1.000	0
2008-09	64,129	0.995	63,811
2009-10	0	0.989	0
2010-11	566,245	0.983	556,795
2011-12	344,034	0.987	339,406
2012-13	595,463	0.983	585,558
2013-14	704,410	0.975	686,845

Total \$2,274,282 \$2,232,415

(4) Indicated Discount Factor: 0.982

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 2014-15 Losses as of July 1, 2014  
 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)
2014-15	\$84,404	0.995	\$83,985
2015-16	118,445	0.985	116,691
2016-17	310,779	0.975	303,143
2017-18	280,341	0.966	270,745
2018-19	64,310	0.956	61,494
2019-20	70,682	0.947	66,917
2020-21	80,779	0.937	75,720
2021-22	0	0.928	0
2022-23	0	0.919	0
2023-24	0	0.910	0
2024-25	0	0.901	0
Total	\$1,009,739		\$978,695
	(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 2014-15 Losses as of July 1, 2014  
 Assuming a 1.0% Interest Rate

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

Program Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2014-15	\$36,066	0.995	\$35,887
2015-16	55,184	0.985	54,366
2016-17	277,355	0.975	270,541
2017-18	297,173	0.966	287,002
2018-19	48,186	0.956	46,076
2019-20	60,214	0.947	57,007
2020-21	86,020	0.937	80,632
2021-22	0	0.928	0
2022-23	0	0.919	0
2023-24	0	0.910	0
2024-25	0	0.901	0
Total	\$860,198		\$831,511

(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)
2004-05	\$106,370	\$106,370	\$106,370
2005-06	118,857	118,857	118,857
2006-07	126,470	126,468	126,468
2007-08	118,197	118,196	118,196
2008-09	131,713	131,711	131,711
2009-10	155,120	155,055	155,055
2010-11	184,609	184,747	184,678
2011-12	127,756	128,251	128,003
2012-13	119,422	128,326	123,874
2013-14	59,014	190,512	124,763
Total	\$1,247,528	\$1,388,494	\$1,317,977

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 12/31/13 (1)	Reported Development Factor as of 12/31/13 (2)	Projected Ultimate Losses (3)
2004-05	\$106,370	1.000	\$106,370
2005-06	118,857	1.000	118,857
2006-07	126,468	1.000	126,470
2007-08	118,196	1.000	118,197
2008-09	131,711	1.000	131,713
2009-10	155,055	1.000	155,120
2010-11	184,412	1.001	184,609
2011-12	126,204	1.012	127,756
2012-13	96,735	1.235	119,422
2013-14	7,209	8.186	59,014
Total	\$1,171,218		\$1,247,528

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 12/31/13 (5)	Estimated Ultimate Deductible Losses (6)
2004-05	\$118,287	1.000	0.0%	\$0	\$106,370	\$106,370
2005-06	149,135	1.000	0.0%	0	118,857	118,857
2006-07	106,271	1.000	0.0%	0	126,468	126,468
2007-08	131,026	1.000	0.0%	0	118,196	118,196
2008-09	118,610	1.000	0.0%	0	131,711	131,711
2009-10	177,037	1.000	0.0%	0	155,055	155,055
2010-11	334,587	1.001	0.1%	335	184,412	184,747
2011-12	170,549	1.012	1.2%	2,047	126,204	128,251
2012-13	166,267	1.235	19.0%	31,591	96,735	128,326
2013-14	208,773	8.186	87.8%	183,303	7,209	190,512
<b>Total</b>	<b>\$1,680,542</b>			<b>\$217,276</b>	<b>\$1,171,218</b>	<b>\$1,388,494</b>

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 - 12/31/13

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>
2004							538	538	538	538	538
2005						427	437	437	437	437	
2006					618	557	557	557	557		
2007				451	424	401	401	401			
2008			662	617	500	500	500				
2009		541	307	355	405	452					
2010	151	569	1,025	1,082	721						
2011	76	819	2,507	2,500							
2012	19	278	593								
2013	55	343									
2014	7										
	<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>
4 YR VOL	6.677	2.008	1.012	0.819	0.981	1.005	1.000	1.000	1.000	1.000	
4 YR AVG	8.861	1.890	1.035	0.889	0.991	1.005	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	8.861	1.890	1.117	1.037	1.014	1.002	1.002	1.001	1.000	1.000	1.000
CUMULATIVE	19.756	2.230	1.180	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 - 12/31/13

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>
2004							538	538	538	538	538
2005						411	437	437	437	437	437
2006					565	557	557	557	557	557	
2007				386	406	401	401	401	401		
2008			337	497	500	500	500				
2009		151	255	274	306	372					
2010	15	122	524	727	721						
2011	5	194	646	1,932							
2012	13	113	177								
2013	3	124									
2014	4										
	<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>
4 YR VOL	15.111	2.761	1.947	1.026	1.030	1.014	1.000	1.000	1.000	1.000	
4 YR AVG	22.843	2.717	1.733	1.042	1.047	1.016	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	15.111	2.717	1.733	1.042	1.065	1.016	1.010	1.005	1.005	1.002	1.000
CUMULATIVE	82.016	5.428	1.998	1.153	1.106	1.039	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 - 12/31/13

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>
2005						50	51	51	51	48
2006					41	40	40	40	39	
2007				56	56	56	56	49		
2008			57	55	55	55	54			
2009		56	61	62	62	61				
2010	17	46	49	52	51					
2011	21	121	128	65						
2012	22	75	72							
2013	17	62								
2014	14									
	<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	3.948	1.040	0.793	0.996	0.991	1.000	0.952	0.989	0.941	
ALL YR AVG	3.881	1.043	0.888	0.995	0.990	1.000	0.958	0.988	0.941	1.000
SELECT	3.881	1.043	1.020	1.000	1.000	1.000	1.000	1.000	1.000	1.000
CUMULATIVE	4.129	1.064	1.020	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)
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	1,000,000	432,210	1.000	10,000
2014-15	?	432,210	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).