

# **Monterey Bay Area Self Insurance Authority**

**An Actuarial Review of the  
Workers' Compensation Program**

**BAY ACTUARIAL CONSULTANTS  
Moraga, California  
April 20, 2016**

# Bay Actuarial Consultants

April 20, 2016

Mr. Conor Boughey, ARM  
Vice President  
Alliant Insurance Services  
100 Pine Street, 11th Floor  
San Francisco, CA 94111

Dear Mr. Boughey:

We are pleased to present Bay Actuarial's Actuarial Review of the Monterey Bay Area Self Insurance Authority's workers' compensation 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 Workers' Compensation Program

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# **Monterey Bay Area Self Insurance Authority**

## **An Actuarial Review of the Workers' Compensation Program**

### **Introduction**

# Monterey Bay Area Self Insurance Authority

## An Actuarial Review of the Workers' Compensation Program

### Introduction

#### Background & Purpose

The Monterey Bay Area Self Insurance Authority ("MBASIA") self-insures its workers' compensation claims. Members of the Authority pay the temporary disability ("TD") and Section 4850 of workers' compensation claims directly. Therefore the Authority has no liability for unpaid 4850/TD benefits. Because of this fact we supply two sets of 2016-17 funding rates. The first set includes a provision for 4850/TD benefits and might be useful in evaluating excess insurance options that cover those benefits. The second set of rates excludes 4850/TD and might be useful for projecting the Authority's internal funding requirements. The specific topics covered in this report include the following:

- 1) **Projected 2016-17 Loss Rate.** Projections of the losses expected to be incurred during 2016-17, expressed in terms of rates of loss per \$100 of payroll. There are two sets of rates. The first set includes 4850/TD benefits and the second set doesn't.
- 2) **Unpaid Losses.** We estimated the Authority's liability for unpaid losses as of December 31, 2015 and projected the June 30, 2016 liability.
- 3) **Discounting.** We discounted the projected 2016-17 losses and the 6/30/16 liabilities at 1.5% interest. The discounted estimates take into account the time value of money as workers' compensation costs are disbursed over an extended timeframe.
- 4) **Variability of Estimates.** We 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.

We relied upon loss and payroll data that JT<sup>2</sup> Claims Administrators and MBASIA provided. We did not audit this data and are not responsible for its accuracy. The accuracy and relevance of the conclusions and the reasonableness of the recommendations depend upon the accuracy of the underlying data. We use the term "losses" to refer 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. Uncertainty is unavoidable because many of the events that will determine actual claims costs will take place in the future. These events include, but are not limited to, future legislation or ballot initiatives that may change statutory benefit levels or the workers' compensation laws, changes in the rate of inflation, and the outcomes of future administrative proceedings and litigation. Our projections are based upon the Authority's historical experience. We did not anticipate 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 nine sections: the *Management Summary*, the *Technical Approach* section, the *Summary Exhibits*, the *Fiscal Year End Exhibits*, the *Limited Ultimate Loss Exhibits*, the *Gross Loss Exhibits*, the *Future Loss Exhibits*, the *Discounting Exhibits*, and the *Claims Data Exhibits*.

# **Monterey Bay Area Self Insurance Authority**

## **An Actuarial Review of the Workers' Compensation Program**

### **Management Summary**

# Monterey Bay Area Self Insurance Authority

## An Actuarial Review of the Workers' Compensation Program

### Management Summary

#### Projected 2016-17 Loss Rates

Table I shows the MBASIA's projected rates of loss for 2016-17 at various self-insured retentions ("SIR's) ranging between \$250,000 and \$1,000,000, plus unlimited. These rates are discounted at 1.5% interest and include 4850/TD benefits. Table II is similar except that it excludes 4850/TD benefits. The Table I and II rates do not cover claims handling fees, program administration, or excess insurance.

Tables I and II show actuarial central estimates and estimates at various probability levels. The higher probability level rates have higher probabilities of being adequate. For example, we estimate that there is a 70% probability that the actual 2016-17 \$250,000 SIR loss rate with and without 4850/TD will be less than **\$7.42** and **\$6.39**, respectively.

<b>Table I: Projected 2016-17 Discounted Loss Rates (1.5% interest rate – INCLUDES 4850/TD)</b>						
Probability Level	Projected Loss per \$100 of Payroll					
	\$250,000 SIR	\$350,000 SIR	\$500,000 SIR	\$750,000 SIR	\$1,000,000 SIR	Unlimited Retention
50%	6.04	6.77	7.41	7.91	8.12	8.47
<b>Central Estimate</b>	<b>\$6.37</b>	<b>\$7.17</b>	<b>\$7.87</b>	<b>\$8.47</b>	<b>\$8.77</b>	<b>\$9.21</b>
60%	6.68	7.52	8.25	8.86	9.17	9.62
70%	<b>\$7.42</b>	8.37	9.21	9.97	10.38	10.96
80%	8.34	9.45	10.44	11.37	11.92	12.68
90%	9.74	11.09	12.30	13.53	14.31	15.34
<b>15-16 Central Estimate</b>	<b>\$6.76</b>	<b>\$7.58</b>	<b>\$8.24</b>	<b>\$8.85</b>	<b>\$9.12</b>	<b>\$9.51</b>
<b>Change in C.E.</b>	<b>-5.8%</b>	<b>-5.4%</b>	<b>-4.5%</b>	<b>-4.3%</b>	<b>-3.8%</b>	<b>-3.2%</b>

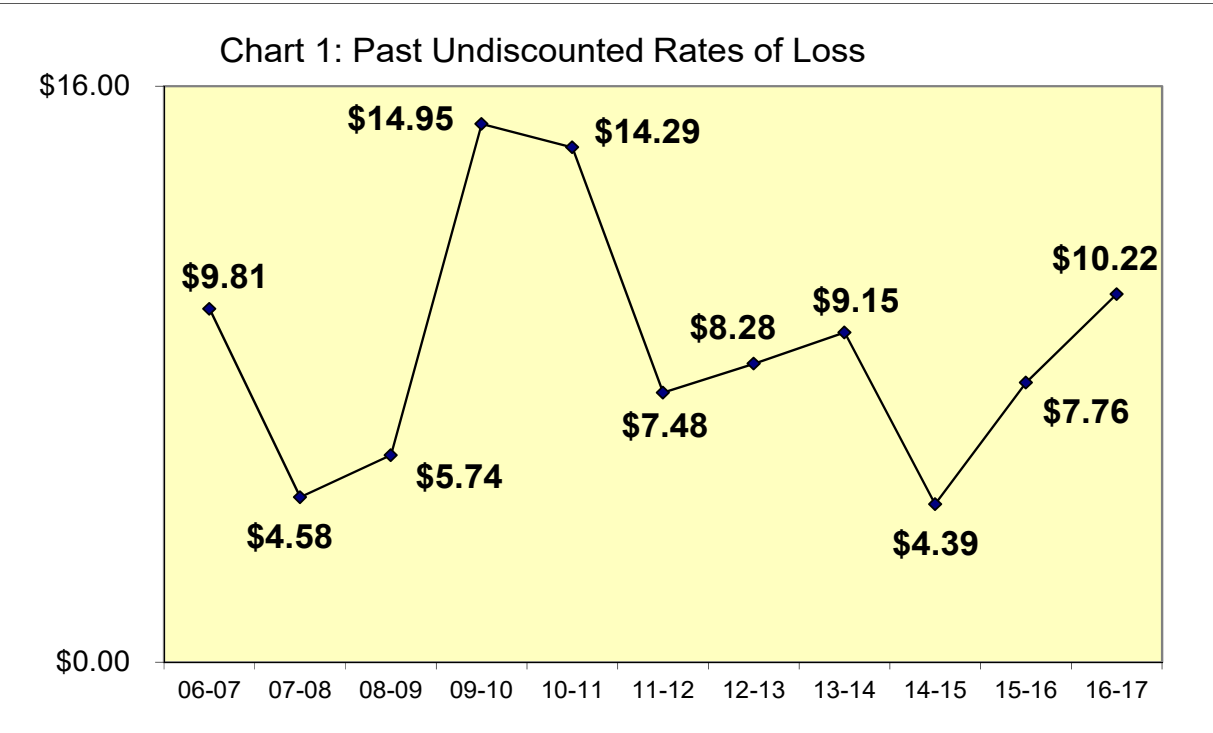
The next to last row in Table I shows last year's projected 2015-16 central value rates. The bottom row shows the percentage changes between last year's and this year's central value rates

<b>Table II: Projected 2016-17 Discounted Loss Rates (1.5% interest rate – EXCLUDES 4850/TD)</b>						
Probability <u>Level</u>	<u>Projected Loss per \$100 of Payroll</u>					
	<u>\$250,000</u> <u>SIR</u>	<u>\$350,000</u> <u>SIR</u>	<u>\$500,000</u> <u>SIR</u>	<u>\$750,000</u> <u>SIR</u>	<u>\$1,000,000</u> <u>SIR</u>	<u>Unlimited</u> <u>Retention</u>
50%	5.21	5.95	6.59	7.11	7.33	7.67
<b>Central Estimate</b>	<b>\$5.49</b>	<b>\$6.30</b>	<b>\$7.00</b>	<b>\$7.61</b>	<b>\$7.91</b>	<b>\$8.35</b>
60%	5.76	6.60	7.33	7.96	8.27	8.72
70%	<b>\$6.39</b>	7.35	8.19	8.96	9.36	9.93
80%	7.19	8.30	9.28	10.22	10.76	11.49
90%	8.39	9.74	10.94	12.16	12.90	13.91
<b>15-16 Central Estimate</b>	<b>\$6.10</b>	<b>\$6.93</b>	<b>\$7.60</b>	<b>\$8.20</b>	<b>\$8.47</b>	<b>\$8.87</b>
<b>Change in C.E.</b>	<b>-10.0%</b>	<b>-9.1%</b>	<b>-7.9%</b>	<b>-7.2%</b>	<b>-6.6%</b>	<b>-5.9%</b>

Last year we estimated that 4850/TD constituted 6.8% of the total unlimited losses. This year the data indicates 9.3%. This higher percentage of 4850/TD caused the rates that exclude 4850/TD to fall farther than those that include it.

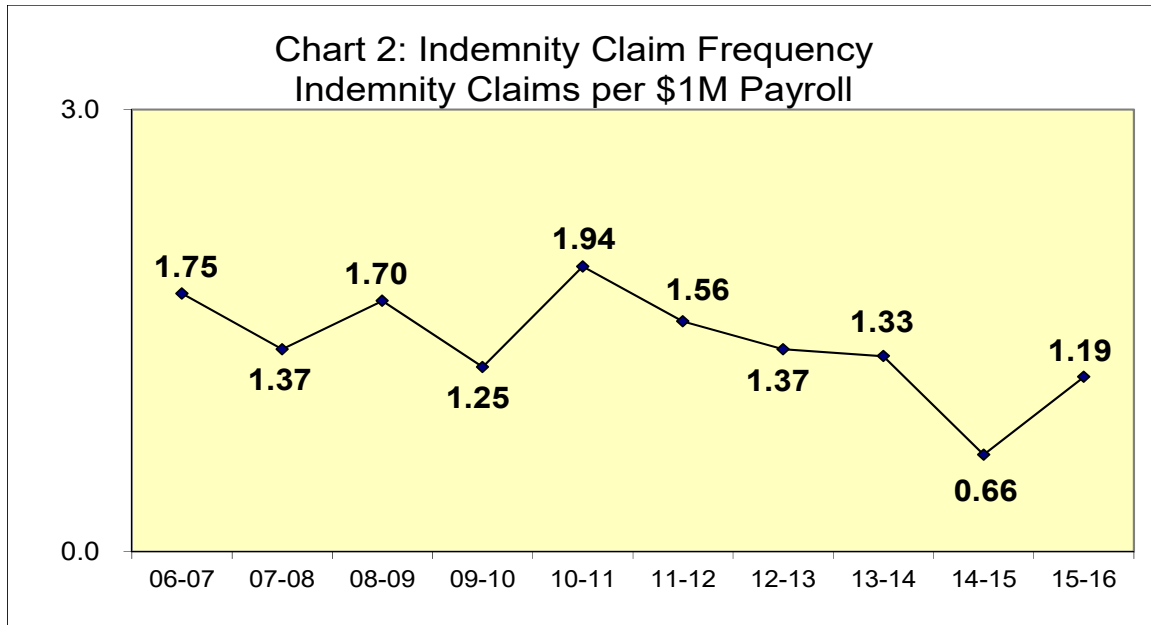
**The Authority’s Past Rates of Loss**

Chart 1 displays the Authority’s estimated past unlimited, undiscounted loss rates (no reduction for losses ceded to excess insurers). The loss rate is ultimate total loss per \$100 of payroll. **\$10.22** is the undiscounted central estimate unlimited rate for 2016-17. The rates in Chart 1 include 4850/TD.



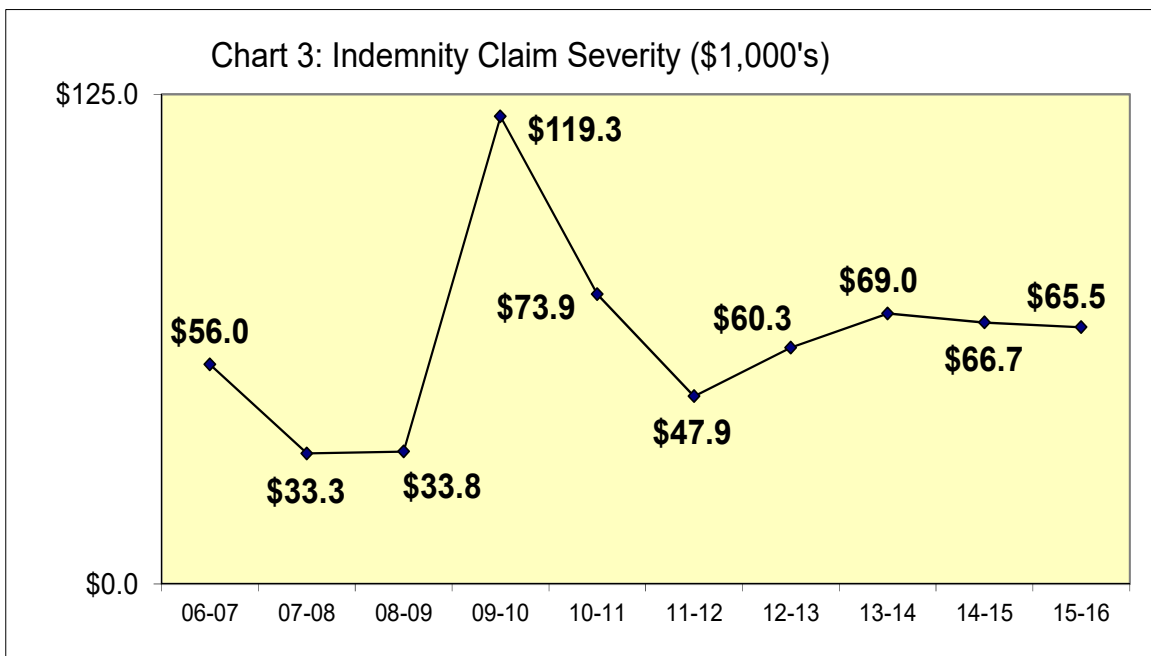
## Claim Frequency

Indemnity claim frequency is the number of "indemnity" claims divided by payroll. Chart 2 displays indemnity claim frequency.



## Average Claim Amount ("Severity")

Chart 3 shows the average indemnity claim amount, calculated by dividing the estimated annual losses by the number of indemnity claims. The values in this chart are based on unlimited loss data, so they include the portions of claims are ceded to excess insurers. The Chart 3 severities include 4850/TD.



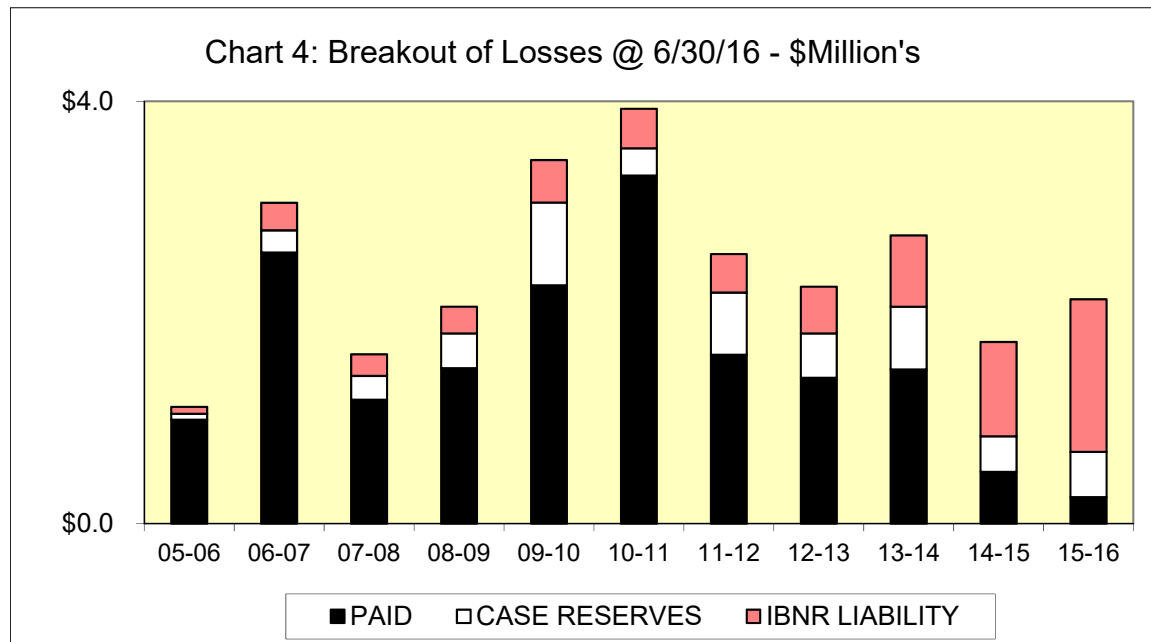
### Limited Liability for Unpaid Losses @ 6/30/16

We project that the limited liability for unpaid losses will be **\$11,590,000** on June 30, 2016, on an undiscounted basis, or **\$10,546,000** if discounted at 1.5% interest. Table III shows these liabilities at various probability levels.

Table III: Projected Liability for Unpaid Losses As of June 30, 2016 - \$1,000's		
Probability	Undiscounted	Discounted at 1.5%
<u>Level</u>	<u>Losses</u>	<u>Interest</u>
<u>Losses</u>	<u>Losses</u>	<u>Losses</u>
50%	11,422	10,079
<b>Central Estimate</b>	<b>\$11,590</b>	<b>\$10,546</b>
60%	11,871	10,475
70%	12,375	10,920
80%	12,998	11,469
90%	13,921	12,284

### Loss Breakout as of 6/30/16

We project that the Authority's liability of **\$11,590,000** will comprise **\$5,464,000** in case reserves for known claims and an IBNR liability of **\$6,127,000**. Chart 4 breaks out the estimated total program year losses for 2005-06 through 2015-16 into their components: losses paid, case reserves, and IBNR liability. There is **\$1.12** of IBNR liability for every **\$1.00** of case reserves.

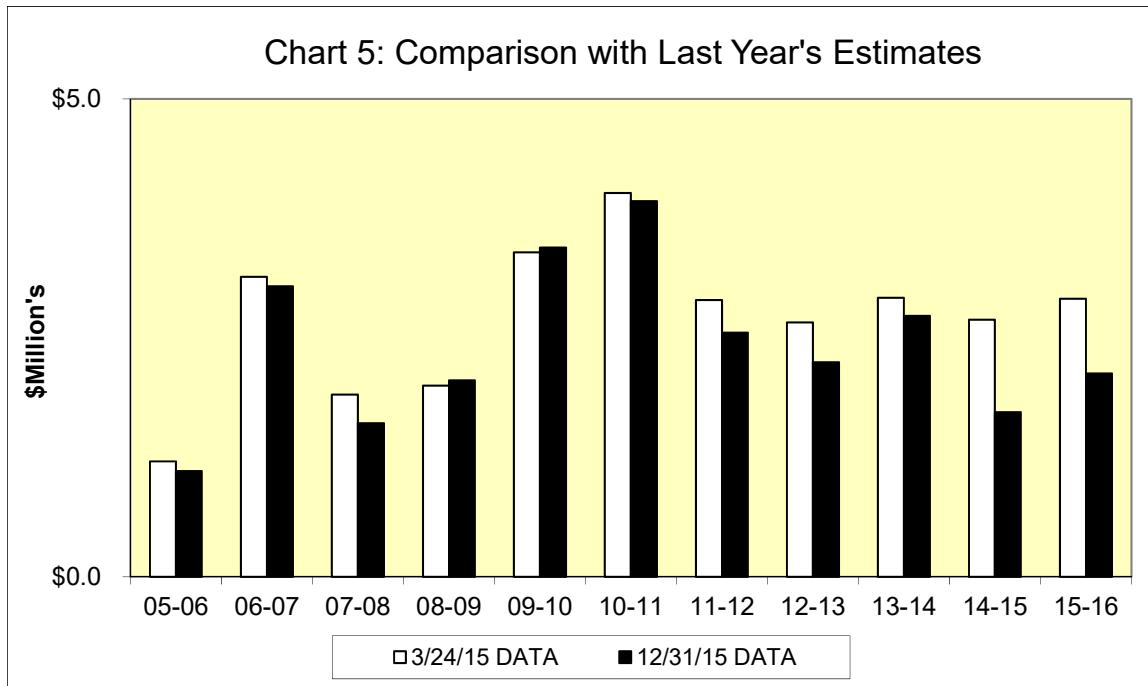


## Short-Term Liability

Short-term liabilities are those expected to be expended within twelve months. The limited 6/30/16 liability comprises **\$1,364,000** in short-term and **\$10,227,000** in long-term liabilities.

## Comparison with Last Year's Estimates

Chart 5 is a comparison of this year's estimates of the limited ultimate losses with last year's estimates. Chart 5 shows limited losses excluding 4850/TD benefits. The total change for all years through 2014-15 was a reduction of \$2,340,000.



## Reconciling the 3/24/15 & 12/31/15 Liability Estimates

Last year we estimated that the liability for unpaid losses (including 4850/TD) was \$12,885,000 on March 31, 2015. Claims expenditures were \$2,266,000 between 3/25/15 and 12/31/15. The change in the estimated losses incurred through 3/24/15 was a reduction of \$1,912,000. The estimated total losses incurred between 3/25/15 and 12/31/15 were \$2,842,000. Therefore starting with the March 31, 2015 liability, if we subtract the claims expenditures and the change in the estimates and then add the total loss incurred since 3/24/15 the indicated liability is \$11,549,000. This matches our direct calculation on [page 29](#).

## Interest Rates

We discounted the rates and liabilities using a 1.5% interest rate. Here are the adjustments to make for different interest rate assumptions:

<b>Interest Rate</b>	<b>0.0%</b>	<b>1.0%</b>	<b>1.24%</b>	<b>1.40%</b>	<b>1.5%</b>	<b>2.0%</b>
<b>UNL Rate</b>	<b>+11.0%</b>	<b>+3.3%</b>	<b>+1.8%</b>	<b>+0.7%</b>	<b>+0.0%</b>	<b>-3.0%</b>
<b>1M Rate</b>	<b>+11.0%</b>	<b>+3.4%</b>	<b>+1.8%</b>	<b>+0.7%</b>	<b>+0.0%</b>	<b>-3.0%</b>
<b>750K Rate</b>	<b>+10.7%</b>	<b>+3.3%</b>	<b>+1.7%</b>	<b>+0.7%</b>	<b>+0.0%</b>	<b>-2.9%</b>
<b>500K Rate</b>	<b>+10.5%</b>	<b>+3.2%</b>	<b>+1.7%</b>	<b>+0.7%</b>	<b>+0.0%</b>	<b>-2.9%</b>
<b>350K Rate</b>	<b>+9.9%</b>	<b>+3.1%</b>	<b>+1.6%</b>	<b>+0.7%</b>	<b>+0.0%</b>	<b>-2.7%</b>
<b>250K Rate</b>	<b>+9.1%</b>	<b>+2.8%</b>	<b>+1.4%</b>	<b>+0.5%</b>	<b>+0.0%</b>	<b>-2.6%</b>
<b>Liabilities</b>	<b>+13.4%</b>	<b>+4.1%</b>	<b>+2.2%</b>	<b>+0.8%</b>	<b>+0.0%</b>	<b>-3.7%</b>

We included columns labeled 1.24% and 1.40%. Those are the “risk-free buy-and-hold” interest rates appropriate for discounting the 2016-17 losses and the 6/30/16 liabilities, respectively. We calculated those rates by assembling hypothetical portfolios of US Treasury bills, notes, and bonds selected to mature just in time to provide exactly the funds that would be needed to pay the claims. The portfolio matching the expenditures on the 2016-17 claims yielded an overall interest rate of 1.24%. The portfolio matching the expenditures on the 6/30/14 liabilities yielded an overall interest rate of 1.40%. These are benchmarks that rise and fall with interest rates in general.

## WC Cost Trend

We have been seeing excellent results this year with most clients. Many clients’ self-funded rates are declining this year. The statewide cost inflation trend, particularly in medical costs, appears to have slowed considerably. The WCIRB, which is the workers’ compensation rating bureau in California, now estimates that the cost of medical care per indemnity claim actually declined in 2013 and 2014. The lower cost trend was not the only factor working for MBASIA. 2014-15 appears to have been the best year in terms of losses since 2005-06.

# **Monterey Bay Area Self Insurance Authority**

## **An Actuarial Review of the Workers' Compensation Program**

### **Technical Approach**

# Monterey Bay Area Self Insurance Authority

## An Actuarial Review of the Workers' Compensation 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 limited liabilities for unpaid losses as of June 30, 2016. Summary Exhibit 2 shows our projected rate for the 2016-17 program year, which runs from July 1, 2016 to June 30, 2017. These rates include 4850/TD benefits. Summary Exhibit 3 shows the estimated limited unpaid losses as of June 30, 2016 by program year on both discounted and non-discounted bases. The limited unpaid losses exclude 4850/TD. Summary Exhibit 4 shows the ULAE liability at 12/31/15 and 6/30/16.

##### ***Fiscal Year End Exhibits***

These exhibits show the estimated unpaid limited losses as of June 30, 2016. Fiscal Year End Exhibit 4 shows limited unpaid losses including 4850/TD benefits. Fiscal Year End Exhibit 3 shows the percentages of the total losses that derive from 4850/TD. Fiscal Year End Exhibit 2 shows the calculation that removes 4850/TD IBNR from the total IBNR liability. Fiscal Year End Exhibit 1 shows the limited unpaid losses excluding 4850/TD.

##### ***Limited Ultimate Loss Exhibits***

These exhibits show the estimation of the limited ultimate losses for each program year, including 4850/TD benefits. We start with the gross (unlimited) loss estimates and adjust them to a limited basis to reflect the expected effect of excess insurance.

### ***Gross Loss Exhibits***

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

We use 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.

Gross Loss Exhibit 1 summarizes these results.

### ***Future Loss Exhibits***

These exhibits show the projection of the projected gross (unlimited) rate for 2016-17, with and without 4850/TD benefits.

### ***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.

### ***Claims Data Exhibits***

These exhibits show the reported loss, paid loss, and claim count triangles as of December 31, 2015, and the associated loss and claim development factors.

**Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program**

**Actuarial Analysis of the  
Workers' Compensation Program**

**Summary Exhibits**

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Unpaid Losses as of June 30, 2016  
Limited Self-Insured Losses Excluding 4850/TD

(1) Projected Unpaid Losses:		\$11,590,372
(2) Discounted Value of Unpaid Losses: (Assuming 1.5% Interest Rate)		\$10,227,631

**Probability Levels**

Probability Level <u>(3)</u>	Probability Factor <u>(4)</u>	Discounted * Liability <u>(5)</u>
40%	0.95	9,702,688
50%	0.99	10,079,293
<b>Central Estimate</b>	<b>1.00</b>	<b>\$10,227,631</b>
60%	1.02	10,474,994
70%	1.07	10,919,889
80%	1.12	11,469,380
90%	1.20	12,283,987
* Multiply by 1.134 to obtain undiscounted values.		

Notes:

- (1) Page 18, Column (1).
- (2) Page 18, Column (2).
- (3) Estimated probability that funding will be adequate.
- (4) Estimated by BAC.
- (5) (2) x (4).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Loss Funding Rate for 2016-17

\$250,000 SIR Loss rate  
**Limited Losses Including 4850/TD**

(1) Discounted Loss Rate: Loss Rates  
(as of July 1, 2016, 1.5% interest rate) \$6.37

<b><u>Probability Levels</u></b>		
Probability Level <u>(2)</u>	Probability Factor <u>(3)</u>	Discounted * Rate <u>(4)</u>
0.20	0.66	\$4.21
0.30	0.76	4.85
0.40	0.85	5.44
0.50	0.95	6.04
<b>Central Estimate</b>	<b>1.00</b>	<b>\$6.37</b>
0.60	1.05	6.68
0.70	1.16	7.42
0.80	1.31	8.34
0.90	1.53	9.74

\* Multiply by 1.091 to obtain undiscounted values.

Notes:

- (1) [Page 53, Column (5)] x [Page 60, Item (4)], adjusted for \$250K SIR.
- (2) Estimated probability that funding will be adequate.
- (3) Estimated by BAC.
- (4) (1) x (3).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

June 30, 2016 Summary  
**Limited Self-Insured Losses Excluding 4850/TD**

Program Year	Undiscounted Claims Liabilities as of 6/30/16 <u>(1)</u>	Discounted (1.5% Interest) Claims Liabilities as of 6/30/16 <u>(2)</u>	Estimated Ultimate Losses <u>(3)</u>
1985-86	\$9,667	\$9,128	\$400,000
1986-87	847	794	756,000
1987-88	1,015	948	132,000
1988-89	574	531	704,000
1989-90	1,348	1,234	740,000
1990-91	32,290	29,533	1,280,000
1991-92	76,003	69,350	1,350,000
1992-93	72,187	65,571	1,492,639
1993-94	65,918	59,562	1,178,561
1994-95	137,485	123,267	829,693
1995-96	22,570	20,138	869,518
1996-97	118,418	105,253	1,438,181
1997-98	101,369	89,688	1,082,837
1998-99	145,712	128,587	1,521,420
1999-00	99,691	88,027	1,442,757
2000-01	168,947	149,520	2,583,152
2001-02	251,672	223,770	2,151,203
2002-03	120,584	108,064	2,032,846
2003-04	97,823	87,860	1,783,776
2004-05	451,368	402,023	1,910,688
2005-06	120,680	106,274	1,105,790
2006-07	470,707	412,509	3,037,898
2007-08	431,775	378,200	1,605,596
2008-09	581,323	508,111	2,055,026
2009-10	1,187,708	1,036,011	3,444,308
2010-11	632,951	550,621	3,930,321
2011-12	952,805	824,294	2,552,083
2012-13	862,794	749,311	2,245,202
2013-14	1,269,598	1,114,435	2,729,601
2014-15	1,230,192	1,093,117	1,721,539
2015-16	1,874,351	1,691,900	2,125,570
Total	\$11,590,372	\$10,227,631	\$52,232,207

## Notes:

- (1) Page 56, Column (1).
- (2) Page 56, Column (3).
- (3) Page 21, Column (1).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

ULAE Projections and Calculation of Unpaid ULAE

(1) Selected ULAE Ratio: **12.0%**

	<u>Case Reserves with Development</u>	<u>"True" IBNR</u>	<u>Total</u>
(2) ULAE Ratio:	6.0%	12.0%	
(3) Estimated Unpaid Losses as of 12/31/15:	\$18,379,491	\$988,672	\$19,368,163
(4) Estimated Unpaid ULAE as of 12/31/15:	\$1,102,769	\$118,641	\$1,221,410
(5) Discounted Unpaid ULAE as of 12/31/15: ( 1.5% interest rate)			\$1,077,284

We project that the ULAE liability will not change between 12/31/15 & 06/30/16.

Notes:

- (1) Estimated by BAC.
- (2) "50-50 Rule."
- (3) From gross ultimates on Page 38 and gross claims data, assuming 90% of IBNR is development on known claims.
- (4) (2) x (3).
- (5) (4) x [Page 56, Item (4)].

**Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program**

**Actuarial Analysis of the  
Workers' Compensation Program**

**Fiscal Year End Exhibits**

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Unpaid Losses as of June 30, 2016  
**Limited Self-Insured Losses Excluding 4850/TD**

Program Year	Estimated Ultimate Losses (1)	Limited Paid Losses less 4850/TD Paid 6/30/16 (2)	Limited Case Reserves less 4850/TD Case 6/30/16 (3)	Lim Reported less 4850/TD Reported 6/30/16 (4)	Limited IBNR less 4850/TD IBNR 6/30/16 (5)	Projected Unpaid Losses excluding 4850/TD 6/30/16 (6)
1985-86	\$400,000	\$390,333	\$3,958	\$394,291	\$5,709	\$9,667
1986-87	756,000	755,153	90	755,243	757	847
1987-88	132,000	130,985	12	130,997	1,003	1,015
1988-89	704,000	703,426	49	703,475	525	574
1989-90	740,000	738,652	57	738,709	1,291	1,348
1990-91	1,280,000	1,247,710	15,755	1,263,464	16,536	32,290
1991-92	1,350,000	1,273,997	64,715	1,338,711	11,289	76,003
1992-93	1,492,639	1,420,452	41,008	1,461,459	31,179	72,187
1993-94	1,178,561	1,112,644	36,041	1,148,684	29,877	65,918
1994-95	829,693	692,208	118,780	810,988	18,705	137,485
1995-96	869,518	846,948	10,058	857,006	12,512	22,570
1996-97	1,438,181	1,319,763	83,071	1,402,834	35,347	118,418
1997-98	1,082,837	981,468	54,660	1,036,128	46,709	101,369
1998-99	1,521,420	1,375,708	118,586	1,494,294	27,127	145,712
1999-00	1,442,757	1,343,065	45,506	1,388,571	54,186	99,691
2000-01	2,583,152	2,414,205	102,300	2,516,505	66,647	168,947
2001-02	2,151,203	1,899,531	136,356	2,035,887	115,316	251,672
2002-03	2,032,846	1,912,262	60,605	1,972,866	59,979	120,584
2003-04	1,783,776	1,685,953	4,206	1,690,159	93,617	97,823
2004-05	1,910,688	1,459,321	336,484	1,795,804	114,884	451,368
2005-06	1,105,790	985,110	54,805	1,039,915	65,875	120,680
2006-07	3,037,898	2,567,191	212,129	2,779,320	258,578	470,707
2007-08	1,605,596	1,173,821	224,948	1,398,769	206,827	431,775
2008-09	2,055,026	1,473,703	329,015	1,802,718	252,308	581,323
2009-10	3,444,308	2,256,600	784,139	3,040,739	403,569	1,187,708
2010-11	3,930,321	3,297,370	258,423	3,555,793	374,527	632,951
2011-12	2,552,083	1,599,278	588,629	2,187,907	364,176	952,805
2012-13	2,245,202	1,382,407	419,593	1,802,001	443,201	862,794
2013-14	2,729,601	1,460,003	594,656	2,054,659	674,942	1,269,598
2014-15	1,721,539	491,347	336,341	827,688	893,851	1,230,192
2015-16	2,125,570	251,220	428,788	680,008	1,445,562	1,874,351
Total	\$52,232,207	\$40,641,835	\$5,463,761	\$46,105,596	\$6,126,611	\$11,590,372

## Notes:

(1) - (6) Page 27 entries - Page 24 entries.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Calculation of 4850/TD IBNR

Program Year	Total Case Reserves 12/31/15 (1)	4850/TD Case Reserves 12/31/15 (2)	4850/TD Case Reserves Percentage (3)	Total IBNR as of 12/31/15 (4)	4850/TD IBNR as of 12/31/15 (5)	IBNR Net of 4850/TD as of 12/31/15 (6)
1985-86	\$2,754	\$0	0.0%	\$6,913	\$0	\$6,913
1986-87	0	0	0.0%	940	0	940
1987-88	0	0	0.0%	1,078	0	1,078
1988-89	0	0	0.0%	575	0	575
1989-90	0	0	0.0%	1,421	0	1,421
1990-91	17,541	0	0.0%	17,804	0	17,804
1991-92	67,110	0	0.0%	12,021	0	12,021
1992-93	44,757	0	0.0%	32,004	0	32,004
1993-94	36,881	0	0.0%	31,076	0	31,076
1994-95	122,384	0	0.0%	19,651	0	19,651
1995-96	10,739	0	0.0%	12,994	0	12,994
1996-97	86,542	0	0.0%	36,480	0	36,480
1997-98	57,721	0	0.0%	47,911	0	47,911
1998-99	124,891	0	0.0%	28,272	0	28,272
1999-00	49,025	0	0.0%	57,167	0	57,167
2000-01	109,964	0	0.0%	70,189	0	70,189
2001-02	146,070	0	0.0%	127,492	0	127,492
2002-03	63,098	0	0.0%	69,929	0	69,929
2003-04	5,275	0	0.0%	97,492	0	97,492
2004-05	333,828	0	0.0%	120,272	0	120,272
2005-06	54,342	0	0.0%	68,916	0	68,916
2006-07	204,992	0	0.0%	289,668	0	289,668
2007-08	226,170	0	0.0%	227,947	0	227,947
2008-09	346,054	15,000	4.3%	265,583	0	265,583
2009-10	798,927	645	0.1%	448,883	0	448,883
2010-11	263,183	0	0.0%	390,914	0	390,914
2011-12	604,432	1,628	0.3%	376,510	0	376,510
2012-13	423,925	0	0.0%	519,603	0	519,603
2013-14	634,736	21,711	3.4%	765,945	1,310	764,635
2014-15	347,096	39,635	11.4%	1,077,619	18,458	1,059,161
2015-16	307,883	25,275	8.2%	835,891	20,586	815,305
Total	\$5,490,321	\$103,894		\$6,059,163	\$40,354	\$6,018,809

## Notes:

- (1) Page 29, Column (3).
- (2) Provided by JT2.
- (3) (2) / (1).
- (4) Page 29, Column (5).
- (5) (2) x 'IBNR to case reserves' ratio.  
Ratio is [(4) / (1)], reduced 70% in 2015-16, 85% in 2014-15, & 95% in 2013-14.  
4850/TD IBNR is \$0 for all other years.
- (6) (4) - (5).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

4850/TD as % of Total Losses

Program Year	4850/TD (1)	Estimated Ultimate Gross Loss (2)	4850/TD Percentage (3)
2007-08	\$394,404	\$2,000,000	19.7%
2008-09	544,974	2,700,000	20.2%
2009-10	655,692	6,800,000	9.6%
2010-11	669,679	6,500,000	10.3%
2011-12	447,917	3,400,000	13.2%
2012-13	354,798	3,500,000	10.1%
2013-14	770,399	4,000,000	19.3%
2014-15	178,461	2,000,000	8.9%
Total	\$4,016,324	\$30,900,000	13.0%
09/10 - 14/15	\$3,076,946	\$26,200,000	11.9%

**Selected Percentages**

Gross Loss:	9.3%
\$1M Limit:	9.8%
\$750K Limit:	10.2%
\$500K Limit:	11.0%
\$350K Limit:	12.1%
\$250K Limit:	13.7%
\$150K Limit:	17.4%

(1) Page 26, Column (4).

(2) Page 38, Column (6).

(3) (1) / (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Unpaid Losses as of June 30, 2016  
4850/TD Only

Program Year	Estimated Ultimate 4850/TD (1)	Projected 4850/TD Paid as of 6/30/16 (2)	Projected 4850/TD Case Reserves as of 6/30/16 (3)	Projected 4850/TD Reported as of 6/30/16 (4)	Projected 4850/TD IBNR as of 6/30/16 (5)	Projected Unpaid Losses excluding 4850/TD 6/30/16 (6)
1985-86	\$0	\$0	\$0	\$0	\$0	\$0
1986-87	0	0	0	0	0	0
1987-88	0	0	0	0	0	0
1988-89	0	0	0	0	0	0
1989-90	0	0	0	0	0	0
1990-91	0	0	0	0	0	0
1991-92	0	0	0	0	0	0
1992-93	27,361	27,361	0	27,361	0	0
1993-94	51,439	51,439	0	51,439	0	0
1994-95	150,307	150,307	0	150,307	0	0
1995-96	220,482	220,482	0	220,482	0	0
1996-97	181,819	181,819	0	181,819	0	0
1997-98	197,163	197,163	0	197,163	0	0
1998-99	118,580	118,580	0	118,580	0	0
1999-00	137,243	137,243	0	137,243	0	0
2000-01	316,848	316,848	0	316,848	0	0
2001-02	448,797	448,797	0	448,797	0	0
2002-03	487,154	487,154	0	487,154	0	0
2003-04	326,224	326,224	0	326,224	0	0
2004-05	469,312	469,312	0	469,312	0	0
2005-06	294,210	294,210	0	294,210	0	0
2006-07	562,102	562,102	0	562,102	0	0
2007-08	394,404	394,404	0	394,404	0	0
2008-09	544,974	537,483	7,491	544,974	0	7,491
2009-10	655,692	655,208	484	655,692	0	484
2010-11	669,679	669,679	0	669,679	0	0
2011-12	447,917	446,864	1,053	447,917	0	1,053
2012-13	354,798	354,798	0	354,798	0	0
2013-14	770,399	751,435	18,963	770,399	0	18,963
2014-15	178,461	140,808	37,653	178,461	0	37,653
2015-16	474,430	230,294	80,393	310,687	163,742	244,135
<b>Total</b>	<b>\$8,479,793</b>	<b>\$8,170,014</b>	<b>\$146,036</b>	<b>\$8,316,051</b>	<b>\$163,742</b>	<b>\$309,778</b>

## Notes:

- (1) Page 26, Column (4).
- (2) Page 25, Column (3).
- (3) (4) - (2).
- (4) Page 25, Column (6).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Paid and Reported Losses between 1/1/16 and 6/30/16

4850/TD Only

Program Year	Losses Paid as of 12/31/15 (1)	Projected Losses Paid 1/1/16 - 6/30/16 (2)	Projected Losses Paid as of 6/30/16 (3)	Losses Reported as of 12/31/15 (4)	Projected Losses Reported 1/1/16 - 6/30/16 (5)	Projected Losses Reported as of 6/30/16 (6)
1985-86	\$0	\$0	\$0	\$0	\$0	\$0
1986-87	0	0	0	0	0	0
1987-88	0	0	0	0	0	0
1988-89	0	0	0	0	0	0
1989-90	0	0	0	0	0	0
1990-91	0	0	0	0	0	0
1991-92	0	0	0	0	0	0
1992-93	27,361	0	27,361	27,361	0	27,361
1993-94	51,439	0	51,439	51,439	0	51,439
1994-95	150,307	0	150,307	150,307	0	150,307
1995-96	220,482	0	220,482	220,482	0	220,482
1996-97	181,819	0	181,819	181,819	0	181,819
1997-98	197,163	0	197,163	197,163	0	197,163
1998-99	118,580	0	118,580	118,580	0	118,580
1999-00	137,243	0	137,243	137,243	0	137,243
2000-01	316,848	0	316,848	316,848	0	316,848
2001-02	448,797	0	448,797	448,797	0	448,797
2002-03	487,154	0	487,154	487,154	0	487,154
2003-04	326,224	0	326,224	326,224	0	326,224
2004-05	469,312	0	469,312	469,312	0	469,312
2005-06	294,210	0	294,210	294,210	0	294,210
2006-07	562,102	0	562,102	562,102	0	562,102
2007-08	394,404	0	394,404	394,404	0	394,404
2008-09	529,974	7,509	537,483	544,974	0	544,974
2009-10	655,047	161	655,208	655,692	0	655,692
2010-11	669,679	0	669,679	669,679	0	669,679
2011-12	446,289	575	446,864	447,917	0	447,917
2012-13	354,798	0	354,798	354,798	0	354,798
2013-14	748,687	2,748	751,435	770,399	0	770,399
2014-15	138,826	1,982	140,808	178,461	0	178,461
2015-16	33,331	196,963	230,294	58,607	252,081	310,687
Total	\$7,960,076	\$209,939	\$8,170,014	\$8,063,970	\$252,081	\$8,316,051

## Notes:

- (1) Page 26, Column (1).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Provided by JT2.
- (5) Projected by BAC.
- (6) (4) + (5).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Paid Loss Development  
4850/TD

Program Year	Cumulative Paid Losses as of 12/31/15 (1)	Paid Development Factor as of 12/31/15 (2)	Projected Ultimate Losses (3)	Selected Ultimate Losses (4)
1985-86	\$0	1.000	\$0	\$0
1986-87	0	1.000	0	0
1987-88	0	1.000	0	0
1988-89	0	1.000	0	0
1989-90	0	1.000	0	0
1990-91	0	1.000	0	0
1991-92	0	1.000	0	0
1992-93	27,361	1.000	27,361	27,361
1993-94	51,439	1.000	51,439	51,439
1994-95	150,307	1.000	150,307	150,307
1995-96	220,482	1.000	220,482	220,482
1996-97	181,819	1.000	181,819	181,819
1997-98	197,163	1.000	197,163	197,163
1998-99	118,580	1.000	118,580	118,580
1999-00	137,243	1.000	137,243	137,243
2000-01	316,848	1.000	316,848	316,848
2001-02	448,797	1.000	448,797	448,797
2002-03	487,154	1.000	487,154	487,154
2003-04	326,224	1.000	326,224	326,224
2004-05	469,312	1.000	469,312	469,312
2005-06	294,210	1.000	294,210	294,210
2006-07	562,102	1.000	562,102	562,102
2007-08	394,404	1.000	394,404	394,404
2008-09	529,974	1.000	529,974	544,974
2009-10	655,047	1.025	671,260	655,692
2010-11	669,679	1.025	686,255	669,679
2011-12	446,289	1.030	459,648	447,917
2012-13	354,798	1.019	361,667	354,798
2013-14	748,687	1.008	754,887	770,399
2014-15	138,826	1.101	152,911	178,461
2015-16	33,331	3.499	116,630	474,430
Total	\$7,960,076		\$8,116,675	\$8,479,793

## Notes:

- (1) Provided by JT2.
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.
- (4) Selected based upon (3) & case incurred values.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Unpaid Losses as of June 30, 2016  
**Limited Self-Insured Losses Including 4850/TD**

Program Year	Estimated Ultimate Losses (1)	Projected Paid Losses as of 6/30/16 (2)	Projected Case Reserves 6/30/16 (3)	Projected Reported Losses as of 6/30/16 (4)	Projected IBNR as of 6/30/16 (5)	Projected Unpaid Losses as of 6/30/16 (6)
1985-86	\$400,000	\$390,333	\$3,958	\$394,291	\$5,709	\$9,667
1986-87	756,000	755,153	90	755,243	757	847
1987-88	132,000	130,985	12	130,997	1,003	1,015
1988-89	704,000	703,426	49	703,475	525	574
1989-90	740,000	738,652	57	738,709	1,291	1,348
1990-91	1,280,000	1,247,710	15,755	1,263,464	16,536	32,290
1991-92	1,350,000	1,273,997	64,715	1,338,711	11,289	76,003
1992-93	1,520,000	1,447,813	41,008	1,488,821	31,179	72,187
1993-94	1,230,000	1,164,082	36,041	1,200,123	29,877	65,918
1994-95	980,000	842,515	118,780	961,295	18,705	137,485
1995-96	1,090,000	1,067,430	10,058	1,077,488	12,512	22,570
1996-97	1,620,000	1,501,582	83,071	1,584,653	35,347	118,418
1997-98	1,280,000	1,178,631	54,660	1,233,291	46,709	101,369
1998-99	1,640,000	1,494,288	118,586	1,612,873	27,127	145,712
1999-00	1,580,000	1,480,309	45,506	1,525,814	54,186	99,691
2000-01	2,900,000	2,731,053	102,300	2,833,353	66,647	168,947
2001-02	2,600,000	2,348,328	136,356	2,484,684	115,316	251,672
2002-03	2,520,000	2,399,416	60,605	2,460,021	59,979	120,584
2003-04	2,110,000	2,012,177	4,206	2,016,383	93,617	97,823
2004-05	2,380,000	1,928,632	336,484	2,265,116	114,884	451,368
2005-06	1,400,000	1,279,320	54,805	1,334,125	65,875	120,680
2006-07	3,600,000	3,129,293	212,129	3,341,422	258,578	470,707
2007-08	2,000,000	1,568,225	224,948	1,793,173	206,827	431,775
2008-09	2,600,000	2,011,187	336,506	2,347,692	252,308	588,813
2009-10	4,100,000	2,911,808	784,623	3,696,431	403,569	1,188,192
2010-11	4,600,000	3,967,049	258,423	4,225,473	374,527	632,951
2011-12	3,000,000	2,046,142	589,683	2,635,824	364,176	953,858
2012-13	2,600,000	1,737,206	419,593	2,156,799	443,201	862,794
2013-14	3,500,000	2,211,438	613,620	2,825,058	674,942	1,288,562
2014-15	1,900,000	632,155	373,994	1,006,149	893,851	1,267,845
2015-16	2,600,000	481,514	509,182	990,696	1,609,304	2,118,486
<b>Total</b>	<b>\$60,712,000</b>	<b>\$48,811,849</b>	<b>\$5,609,797</b>	<b>\$54,421,646</b>	<b>\$6,290,354</b>	<b>\$11,900,151</b>

## Notes:

- (1) Page 31, Column (6).
- (2) Page 28, Column (3).
- (3) (4) - (2).
- (4) Page 28, Column (6).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Paid and Reported Losses between 1/1/16 and 6/30/16  
**Limited Self-Insured Losses Including 4850/TD**

Program Year	Losses Paid as of 12/31/15 (1)	Projected Losses Paid 1/1/16 - 6/30/16 (2)	Projected Losses Paid as of 6/30/16 (3)	Losses Reported as of 12/31/15 (4)	Projected Losses Reported 1/1/16 - 6/30/16 (5)	Projected Losses Reported as of 6/30/16 (6)
1985-86	\$390,333	\$0	\$390,333	\$393,087	\$1,204	\$394,291
1986-87	755,060	92	755,153	755,060	183	755,243
1987-88	130,922	63	130,985	130,922	75	130,997
1988-89	703,425	1	703,426	703,425	50	703,475
1989-90	738,579	73	738,652	738,579	130	738,709
1990-91	1,244,655	3,055	1,247,710	1,262,196	1,269	1,263,464
1991-92	1,270,869	3,128	1,273,997	1,337,979	733	1,338,711
1992-93	1,443,239	4,574	1,447,813	1,487,996	824	1,488,821
1993-94	1,162,043	2,039	1,164,082	1,198,924	1,199	1,200,123
1994-95	837,965	4,550	842,515	960,349	946	961,295
1995-96	1,066,267	1,164	1,067,430	1,077,006	482	1,077,488
1996-97	1,496,978	4,604	1,501,582	1,583,520	1,133	1,584,653
1997-98	1,174,368	4,264	1,178,631	1,232,089	1,203	1,233,291
1998-99	1,486,836	7,451	1,494,288	1,611,728	1,146	1,612,873
1999-00	1,473,808	6,501	1,480,309	1,522,833	2,981	1,525,814
2000-01	2,719,846	11,207	2,731,053	2,829,811	3,543	2,833,353
2001-02	2,326,438	21,890	2,348,328	2,472,508	12,176	2,484,684
2002-03	2,386,972	12,444	2,399,416	2,450,071	9,950	2,460,021
2003-04	2,007,232	4,945	2,012,177	2,012,508	3,875	2,016,383
2004-05	1,925,900	2,732	1,928,632	2,259,728	5,388	2,265,116
2005-06	1,276,742	2,578	1,279,320	1,331,084	3,041	1,334,125
2006-07	3,105,340	23,953	3,129,293	3,310,332	31,090	3,341,422
2007-08	1,545,883	22,342	1,568,225	1,772,053	21,120	1,793,173
2008-09	1,988,363	22,824	2,011,187	2,334,417	13,276	2,347,692
2009-10	2,852,190	59,619	2,911,808	3,651,117	45,314	3,696,431
2010-11	3,945,903	21,146	3,967,049	4,209,086	16,387	4,225,473
2011-12	2,019,058	27,084	2,046,142	2,623,490	12,334	2,635,824
2012-13	1,656,472	80,734	1,737,206	2,080,397	76,403	2,156,799
2013-14	2,099,319	112,120	2,211,438	2,734,055	91,003	2,825,058
2014-15	475,285	156,870	632,155	822,381	183,768	1,006,149
2015-16	156,226	325,289	481,514	464,109	526,587	990,696
Total	\$47,862,515	\$949,334	\$48,811,849	\$53,352,837	\$1,068,810	\$54,421,646

## Notes:

- (1) Page 33, Column (1).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 32, Column (1).
- (5) Projected by BAC.
- (6) (4) + (5).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Estimated Unpaid Losses as of December 31, 2015

Limited Self-Insured Losses Including 4850/TD

Program Year	Estimated Ultimate Losses (1)	Paid Losses as of 12/31/15 (2)	Case Reserves 12/31/15 (3)	Reported Losses as of 12/31/15 (4)	Estimated IBNR as of 12/31/15 (5)	Estimated Unpaid Losses as of 12/31/15 (6)
1985-86	\$400,000	\$390,333	\$2,754	\$393,087	\$6,913	\$9,667
1986-87	756,000	755,060	0	755,060	940	940
1987-88	132,000	130,922	0	130,922	1,078	1,078
1988-89	704,000	703,425	0	703,425	575	575
1989-90	740,000	738,579	0	738,579	1,421	1,421
1990-91	1,280,000	1,244,655	17,541	1,262,196	17,804	35,345
1991-92	1,350,000	1,270,869	67,110	1,337,979	12,021	79,131
1992-93	1,520,000	1,443,239	44,757	1,487,996	32,004	76,761
1993-94	1,230,000	1,162,043	36,881	1,198,924	31,076	67,957
1994-95	980,000	837,965	122,384	960,349	19,651	142,035
1995-96	1,090,000	1,066,267	10,739	1,077,006	12,994	23,733
1996-97	1,620,000	1,496,978	86,542	1,583,520	36,480	123,022
1997-98	1,280,000	1,174,368	57,721	1,232,089	47,911	105,632
1998-99	1,640,000	1,486,836	124,891	1,611,728	28,272	153,164
1999-00	1,580,000	1,473,808	49,025	1,522,833	57,167	106,192
2000-01	2,900,000	2,719,846	109,964	2,829,811	70,189	180,154
2001-02	2,600,000	2,326,438	146,070	2,472,508	127,492	273,562
2002-03	2,520,000	2,386,972	63,098	2,450,071	69,929	133,028
2003-04	2,110,000	2,007,232	5,275	2,012,508	97,492	102,768
2004-05	2,380,000	1,925,900	333,828	2,259,728	120,272	454,100
2005-06	1,400,000	1,276,742	54,342	1,331,084	68,916	123,258
2006-07	3,600,000	3,105,340	204,992	3,310,332	289,668	494,660
2007-08	2,000,000	1,545,883	226,170	1,772,053	227,947	454,117
2008-09	2,600,000	1,988,363	346,054	2,334,417	265,583	611,637
2009-10	4,100,000	2,852,190	798,927	3,651,117	448,883	1,247,810
2010-11	4,600,000	3,945,903	263,183	4,209,086	390,914	654,097
2011-12	3,000,000	2,019,058	604,432	2,623,490	376,510	980,942
2012-13	2,600,000	1,656,472	423,925	2,080,397	519,603	943,528
2013-14	3,500,000	2,099,319	634,736	2,734,055	765,945	1,400,681
2014-15	1,900,000	475,285	347,096	822,381	1,077,619	1,424,715
2015-16	1,300,000	156,226	307,883	464,109	835,891	1,143,774
<b>Total</b>	<b>\$59,412,000</b>	<b>\$47,862,515</b>	<b>\$5,490,321</b>	<b>\$53,352,837</b>	<b>\$6,059,163</b>	<b>\$11,549,485</b>

## Notes:

- (1) Page 31, Column (6).  
2015-16 value adjusted for 6 month exposure through 12/31/15.
- (2) Page 33, Column (1).
- (3) (4) - (2).
- (4) Page 32, Column (1).
- (5) (1) - (4).
- (6) (3) + (5).

**Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program**

**Actuarial Analysis of the  
Workers' Compensation Program**

**Limited Loss Exhibits  
Including 4850/TD**

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Selected Ultimate Losses  
**Limited Self-Insured Losses Including 4850/TD**

Program Year	Limited Reported Projection (1)	Limited Paid Projection (2)	Lim IBNR to Case Reserves Ratio (3)	B-F Limited Method Using Reported (4)	B-F Limited Method Using Paid (5)	Selected Ultimate Losses (6)
1985-86	\$394,295	\$400,310	\$393,473	\$394,510	\$402,190	\$400,000
1986-87	760,843	779,216	755,060	763,047	786,010	756,000
1987-88	131,686	135,683	130,922	131,663	135,244	132,000
1988-89	708,392	729,070	703,425	708,024	726,421	704,000
1989-90	744,971	768,702	738,579	744,880	765,884	740,000
1990-91	1,278,042	1,306,491	1,268,423	1,278,354	1,307,942	1,280,000
1991-92	1,353,385	1,339,698	1,357,105	1,352,039	1,336,057	1,350,000
1992-93	1,507,135	1,532,577	1,500,483	1,510,828	1,545,104	1,520,000
1993-94	1,217,901	1,247,996	1,209,693	1,217,258	1,241,106	1,230,000
1994-95	974,361	897,397	994,249	973,450	899,725	980,000
1995-96	1,093,994	1,150,719	1,079,884	1,096,131	1,153,523	1,090,000
1996-97	1,610,173	1,625,916	1,606,367	1,610,834	1,623,906	1,620,000
1997-98	1,253,939	1,285,192	1,246,692	1,264,505	1,338,353	1,280,000
1998-99	1,642,872	1,643,776	1,642,701	1,640,051	1,628,452	1,640,000
1999-00	1,555,747	1,653,555	1,534,697	1,563,508	1,684,929	1,580,000
2000-01	2,897,982	3,104,968	2,855,543	2,931,877	3,247,185	2,900,000
2001-02	2,546,482	2,728,725	2,508,295	2,543,568	2,686,640	2,600,000
2002-03	2,553,527	2,914,132	2,468,306	2,547,603	2,817,538	2,520,000
2003-04	2,156,910	2,555,877	2,014,898	2,157,228	2,471,632	2,110,000
2004-05	2,374,442	2,414,703	2,364,216	2,369,623	2,388,376	2,380,000
2005-06	1,405,532	1,618,631	1,349,289	1,400,482	1,553,023	1,400,000
2006-07	3,549,306	4,052,186	3,393,354	3,504,618	3,783,891	3,600,000
2007-08	1,931,440	2,085,960	1,877,901	2,011,519	2,293,132	2,000,000
2008-09	2,569,918	2,760,139	2,502,945	2,629,210	2,885,558	2,600,000
2009-10	4,123,580	4,126,627	4,122,484	4,019,535	3,842,113	4,100,000
2010-11	4,711,566	5,607,394	4,356,995	4,510,800	4,780,551	4,600,000
2011-12	3,028,449	3,102,117	2,998,843	3,008,873	3,022,780	3,000,000
2012-13	2,562,580	2,853,499	2,425,048	2,592,815	2,798,510	2,600,000
2013-14	3,623,790	4,176,867	3,352,923	3,440,359	3,526,283	3,500,000
2014-15	1,298,263	1,290,189	1,302,414	1,942,300	2,403,865	1,900,000
2015-16	1,427,069	1,005,032	1,687,944	2,596,204	2,825,293	2,600,000
<b>Total</b>	<b>\$58,988,572</b>	<b>\$62,893,344</b>	<b>\$57,743,148</b>	<b>\$60,455,693</b>	<b>\$63,901,215</b>	<b>\$60,712,000</b>

- (1) Page 32, Column (3).
- (2) Page 33, Column (3).
- (3) Page 34, Column (6).
- (4) Page 35, Column (6).
- (5) Page 36, Column (6).
- (6) Selected on the basis of (1) - (5).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Reported Loss Development  
**Limited Self-Insured Losses Including 4850/TD**

Program Year	Cumulative	Reported Development	Projected Ultimate Losses
	Reported Losses as of 12/31/15 <u>(1)</u>	Factor as of 12/31/15 <u>(2)</u>	
1985-86	\$393,087	1.003	\$394,295
1986-87	755,060	1.008	760,843
1987-88	130,922	1.006	131,686
1988-89	703,425	1.007	708,392
1989-90	738,579	1.009	744,971
1990-91	1,262,196	1.013	1,278,042
1991-92	1,337,979	1.012	1,353,385
1992-93	1,487,996	1.013	1,507,135
1993-94	1,198,924	1.016	1,217,901
1994-95	960,349	1.015	974,361
1995-96	1,077,006	1.016	1,093,994
1996-97	1,583,520	1.017	1,610,173
1997-98	1,232,089	1.018	1,253,939
1998-99	1,611,728	1.019	1,642,872
1999-00	1,522,833	1.022	1,555,747
2000-01	2,829,811	1.024	2,897,982
2001-02	2,472,508	1.030	2,546,482
2002-03	2,450,071	1.042	2,553,527
2003-04	2,012,508	1.072	2,156,910
2004-05	2,259,728	1.051	2,374,442
2005-06	1,331,084	1.056	1,405,532
2006-07	3,310,332	1.072	3,549,306
2007-08	1,772,053	1.090	1,931,440
2008-09	2,334,417	1.101	2,569,918
2009-10	3,651,117	1.129	4,123,580
2010-11	4,209,086	1.119	4,711,566
2011-12	2,623,490	1.154	3,028,449
2012-13	2,080,397	1.232	2,562,580
2013-14	2,734,055	1.325	3,623,790
2014-15	822,381	1.579	1,298,263
2015-16	464,109	3.075	1,427,069
Total	\$53,352,837		\$58,988,572

Notes:

- (1) Provided by JT2.
- (2) Page 39, Column (2), tempered for SIR.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Paid Loss Development  
**Limited Self-Insured Losses Including 4850/TD**

Program Year	Cumulative	Paid Development	Projected Ultimate Losses
	Paid Losses as of 12/31/15 (1)	Factor as of 12/31/15 (2)	
1985-86	\$390,333	1.026	\$400,310
1986-87	755,060	1.032	779,216
1987-88	130,922	1.036	135,683
1988-89	703,425	1.036	729,070
1989-90	738,579	1.041	768,702
1990-91	1,244,655	1.050	1,306,491
1991-92	1,270,869	1.054	1,339,698
1992-93	1,443,239	1.062	1,532,577
1993-94	1,162,043	1.074	1,247,996
1994-95	837,965	1.071	897,397
1995-96	1,066,267	1.079	1,150,719
1996-97	1,496,978	1.086	1,625,916
1997-98	1,174,368	1.094	1,285,192
1998-99	1,486,836	1.106	1,643,776
1999-00	1,473,808	1.122	1,653,555
2000-01	2,719,846	1.142	3,104,968
2001-02	2,326,438	1.173	2,728,725
2002-03	2,386,972	1.221	2,914,132
2003-04	2,007,232	1.273	2,555,877
2004-05	1,925,900	1.254	2,414,703
2005-06	1,276,742	1.268	1,618,631
2006-07	3,105,340	1.305	4,052,186
2007-08	1,545,883	1.349	2,085,960
2008-09	1,988,363	1.388	2,760,139
2009-10	2,852,190	1.447	4,126,627
2010-11	3,945,903	1.421	5,607,394
2011-12	2,019,058	1.536	3,102,117
2012-13	1,656,472	1.723	2,853,499
2013-14	2,099,319	1.990	4,176,867
2014-15	475,285	2.715	1,290,189
2015-16	156,226	6.433	1,005,032
Total	\$47,862,515		\$62,893,344

Notes:

- (1) Provided by JT2.
- (2) Page 40, Column (2), tempered for SIR.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program  
IBNR to Case Reserves Ratio Method  
**Limited Self-Insured Losses Including 4850/TD**

Program Year	Limited Reported LDF (1)	Limited Paid LDF (2)	Limited IBNR to Case Reserves Ratio (3)	Limited Case Reserves (4)	Estimated IBNR as of Reserves (5)	Estimated Ultimate Losses (6)
1985-86	1.003	1.026	0.140	\$2,754	\$386	\$393,473
1986-87	1.008	1.032	0.325	0	0	755,060
1987-88	1.006	1.036	0.198	0	0	130,922
1988-89	1.007	1.036	0.249	0	0	703,425
1989-90	1.009	1.041	0.280	0	0	738,579
1990-91	1.013	1.050	0.355	17,541	6,227	1,268,423
1991-92	1.012	1.054	0.285	67,110	19,126	1,357,105
1992-93	1.013	1.062	0.279	44,757	12,487	1,500,483
1993-94	1.016	1.074	0.292	36,881	10,769	1,209,693
1994-95	1.015	1.071	0.277	122,384	33,900	994,249
1995-96	1.016	1.079	0.268	10,739	2,878	1,079,884
1996-97	1.017	1.086	0.264	86,542	22,847	1,606,367
1997-98	1.018	1.094	0.253	57,721	14,603	1,246,692
1998-99	1.019	1.106	0.248	124,891	30,973	1,642,701
1999-00	1.022	1.122	0.242	49,025	11,864	1,534,697
2000-01	1.024	1.142	0.234	109,964	25,732	2,855,543
2001-02	1.030	1.173	0.245	146,070	35,787	2,508,295
2002-03	1.042	1.221	0.289	63,098	18,235	2,468,306
2003-04	1.072	1.273	0.453	5,275	2,390	2,014,898
2004-05	1.051	1.254	0.313	333,828	104,488	2,364,216
2005-06	1.056	1.268	0.335	54,342	18,205	1,349,289
2006-07	1.072	1.305	0.405	204,992	83,022	3,393,354
2007-08	1.090	1.349	0.468	226,170	105,848	1,877,901
2008-09	1.101	1.388	0.487	346,054	168,528	2,502,945
2009-10	1.129	1.447	0.590	798,927	471,367	4,122,484
2010-11	1.119	1.421	0.562	263,183	147,909	4,356,995
2011-12	1.154	1.536	0.621	604,432	375,353	2,998,843
2012-13	1.232	1.723	0.813	423,925	344,651	2,425,048
2013-14	1.325	1.990	0.975	634,736	618,868	3,352,923
2014-15	1.579	2.715	1.383	347,096	480,033	1,302,414
2015-16	3.075	6.433	3.975	307,883	1,223,835	1,687,944
Total				\$5,490,321	\$4,390,311	\$57,743,148

Notes:

- (1) Page 32, Column (2).
- (2) Page 33, Column (2).
- (3)  $[(1) - 1.000] \times (2) / [(2) - (1)]$ .
- (4)  $[\text{Page 32, Column (1)}] - [\text{Page 33, Column (1)}]$ .
- (5) (3) x (4), rounded.
- (6) (5) + Page 32, Column (1).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Bornhuetter-Ferguson Using Reported Losses  
Limited Self-Insured Losses Including 4850/TD

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 12/31/15 (5)	Estimated Ultimate Losses (6)
1985-86	\$474,263	1.003	0.3%	\$1,423	\$393,087	\$394,510
1986-87	998,391	1.008	0.8%	7,987	755,060	763,047
1987-88	123,492	1.006	0.6%	741	130,922	131,663
1988-89	657,042	1.007	0.7%	4,599	703,425	708,024
1989-90	700,116	1.009	0.9%	6,301	738,579	744,880
1990-91	1,346,536	1.013	1.2%	16,158	1,262,196	1,278,354
1991-92	1,278,194	1.012	1.1%	14,060	1,337,979	1,352,039
1992-93	1,756,293	1.013	1.3%	22,832	1,487,996	1,510,828
1993-94	1,145,845	1.016	1.6%	18,334	1,198,924	1,217,258
1994-95	935,751	1.015	1.4%	13,101	960,349	973,450
1995-96	1,195,282	1.016	1.6%	19,125	1,077,006	1,096,131
1996-97	1,606,686	1.017	1.7%	27,314	1,583,520	1,610,834
1997-98	1,906,804	1.018	1.7%	32,416	1,232,089	1,264,505
1998-99	1,490,692	1.019	1.9%	28,323	1,611,728	1,640,051
1999-00	1,936,893	1.022	2.1%	40,675	1,522,833	1,563,508
2000-01	4,252,734	1.024	2.4%	102,066	2,829,811	2,931,877
2001-02	2,450,355	1.030	2.9%	71,060	2,472,508	2,543,568
2002-03	2,378,820	1.042	4.1%	97,532	2,450,071	2,547,603
2003-04	2,160,000	1.072	6.7%	144,720	2,012,508	2,157,228
2004-05	2,289,483	1.051	4.8%	109,895	2,259,728	2,369,623
2005-06	1,309,390	1.056	5.3%	69,398	1,331,084	1,400,482
2006-07	2,899,790	1.072	6.7%	194,286	3,310,332	3,504,618
2007-08	2,885,130	1.090	8.3%	239,466	1,772,053	2,011,519
2008-09	3,204,267	1.101	9.2%	294,793	2,334,417	2,629,210
2009-10	3,203,635	1.129	11.5%	368,418	3,651,117	4,019,535
2010-11	2,819,756	1.119	10.7%	301,714	4,209,086	4,510,800
2011-12	2,875,994	1.154	13.4%	385,383	2,623,490	3,008,873
2012-13	2,725,627	1.232	18.8%	512,418	2,080,397	2,592,815
2013-14	2,871,155	1.325	24.6%	706,304	2,734,055	3,440,359
2014-15	3,051,550	1.579	36.7%	1,119,919	822,381	1,942,300
2015-16	3,158,659	3.075	67.5%	2,132,095	464,109	2,596,204
Total	\$62,088,630			\$7,102,856	\$53,352,837	\$60,455,693

Notes:

- (1) Page 43, Column (4), or Page 38, Column (6), adjusted for SIR.
- (2) Page 32, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 32, Column (1).
- (6)  $(4) + (5)$ .

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

**Bornhuetter-Ferguson Using Paid Losses**  
**Limited Self-Insured Losses Including 4850/TD**

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 12/31/15 (5)	Estimated Ultimate Losses (6)
1985-86	\$474,263	1.026	2.5%	\$11,857	\$390,333	\$402,190
1986-87	998,391	1.032	3.1%	30,950	755,060	786,010
1987-88	123,492	1.036	3.5%	4,322	130,922	135,244
1988-89	657,042	1.036	3.5%	22,996	703,425	726,421
1989-90	700,116	1.041	3.9%	27,305	738,579	765,884
1990-91	1,346,536	1.050	4.7%	63,287	1,244,655	1,307,942
1991-92	1,278,194	1.054	5.1%	65,188	1,270,869	1,336,057
1992-93	1,756,293	1.062	5.8%	101,865	1,443,239	1,545,104
1993-94	1,145,845	1.074	6.9%	79,063	1,162,043	1,241,106
1994-95	935,751	1.071	6.6%	61,760	837,965	899,725
1995-96	1,195,282	1.079	7.3%	87,256	1,066,267	1,153,523
1996-97	1,606,686	1.086	7.9%	126,928	1,496,978	1,623,906
1997-98	1,906,804	1.094	8.6%	163,985	1,174,368	1,338,353
1998-99	1,490,692	1.106	9.5%	141,616	1,486,836	1,628,452
1999-00	1,936,893	1.122	10.9%	211,121	1,473,808	1,684,929
2000-01	4,252,734	1.142	12.4%	527,339	2,719,846	3,247,185
2001-02	2,450,355	1.173	14.7%	360,202	2,326,438	2,686,640
2002-03	2,378,820	1.221	18.1%	430,566	2,386,972	2,817,538
2003-04	2,160,000	1.273	21.5%	464,400	2,007,232	2,471,632
2004-05	2,289,483	1.254	20.2%	462,476	1,925,900	2,388,376
2005-06	1,309,390	1.268	21.1%	276,281	1,276,742	1,553,023
2006-07	2,899,790	1.305	23.4%	678,551	3,105,340	3,783,891
2007-08	2,885,130	1.349	25.9%	747,249	1,545,883	2,293,132
2008-09	3,204,267	1.388	28.0%	897,195	1,988,363	2,885,558
2009-10	3,203,635	1.447	30.9%	989,923	2,852,190	3,842,113
2010-11	2,819,756	1.421	29.6%	834,648	3,945,903	4,780,551
2011-12	2,875,994	1.536	34.9%	1,003,722	2,019,058	3,022,780
2012-13	2,725,627	1.723	41.9%	1,142,038	1,656,472	2,798,510
2013-14	2,871,155	1.990	49.7%	1,426,964	2,099,319	3,526,283
2014-15	3,051,550	2.715	63.2%	1,928,580	475,285	2,403,865
2015-16	3,158,659	6.433	84.5%	2,669,067	156,226	2,825,293
Total	\$62,088,630			\$16,038,700	\$47,862,515	\$63,901,215

Notes:

- (1) Page 35, Column (1).
- (2) Page 33, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 33, Column (2).
- (6)  $(4) + (5)$ .

**Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program**

**Actuarial Analysis of the  
Workers' Compensation Program**

**Gross Loss Exhibits**

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Selected Ultimate Losses  
Unlimited Losses Including 4850/TD

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)
1985-86	\$543,371	\$518,238	\$555,310			\$550,000
1986-87	1,098,128	1,080,242	1,107,163			1,100,000
1987-88	132,975	136,485	130,922			132,000
1988-89	716,767	736,555	703,425			704,000
1989-90	768,495	790,609	751,039			752,000
1990-91	1,452,148	1,417,238	1,481,866			1,450,000
1991-92	1,379,360	1,359,786	1,394,888			1,380,000
1992-93	1,929,623	1,860,415	1,982,197			1,920,000
1993-94	1,244,858	1,269,445	1,227,433			1,250,000
1994-95	999,944	927,985	1,044,794			1,020,000
1995-96	1,289,556	1,194,184	1,345,920			1,320,000
1996-97	1,789,650	1,833,438	1,764,557			1,800,000
1997-98	2,025,030	1,492,504	2,312,495			2,170,000
1998-99	1,709,321	1,735,086	1,695,998			1,710,000
1999-00	2,290,257	2,499,067	2,187,102			2,240,000
2000-01	4,992,266	4,843,853	5,056,523			4,960,000
2001-02	2,806,817	2,889,341	2,774,574			2,790,000
2002-03	2,621,724	3,004,909	2,479,538			2,550,000
2003-04	2,156,910	2,555,877	2,014,898			2,160,000
2004-05	2,439,941	2,498,712	2,418,296			2,450,000
2005-06	1,443,070	1,669,659	1,357,820			1,400,000
2006-07	4,182,835	4,507,878	4,041,871	\$4,080,078	\$3,558,404	4,200,000
2007-08	1,991,864	2,142,844	1,920,420	2,110,811	2,828,054	2,000,000
2008-09	2,645,398	2,824,965	2,562,121	2,741,266	4,007,364	2,700,000
2009-10	7,003,833	6,505,479	7,265,667	6,509,402	3,034,422	6,800,000
2010-11	6,606,817	6,807,698	6,486,125	6,102,781	4,978,703	6,500,000
2011-12	3,409,999	3,407,132	3,411,751	3,481,190	4,268,981	3,400,000
2012-13	3,398,480	3,430,368	3,376,523	3,462,028	3,706,178	3,500,000
2013-14	4,105,427	4,460,168	3,876,559	4,052,629	3,938,752	4,000,000
2014-15	1,349,612	1,378,119	1,335,041	2,495,897	2,165,131	2,000,000
2015-16	1,511,316	1,026,274	1,841,578	3,608,642	4,218,500	3,600,000
Total	\$72,035,792	\$72,804,553	\$71,904,410			\$74,508,000
06/07-15/16	\$36,205,581	\$36,490,925	\$36,117,655	\$38,644,723	\$36,704,489	\$38,700,000

(1) Page 39, Column (3).

(2) Page 40, Column (3).

(3) Page 41, Column (6).

(4) Page 42, Column (6).

(5) Page 46, Column (4).

(6) Selected on the basis of (1) - (5).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Reported Loss Development  
Unlimited Losses Including 4850/TD

Program Year	Cumulative Reported Losses as of 12/31/15 <u>(1)</u>	Reported Development Factor as of 12/31/15 <u>(2)</u>	Projected Ultimate Losses <u>(3)</u>
1985-86	\$537,191	1.012	\$543,371
1986-87	1,083,619	1.013	1,098,128
1987-88	130,922	1.016	132,975
1988-89	703,425	1.019	716,767
1989-90	751,039	1.023	768,495
1990-91	1,413,067	1.028	1,452,148
1991-92	1,337,979	1.031	1,379,360
1992-93	1,865,185	1.035	1,929,623
1993-94	1,198,924	1.038	1,244,858
1994-95	960,349	1.041	999,944
1995-96	1,234,530	1.045	1,289,556
1996-97	1,708,391	1.048	1,789,650
1997-98	1,928,388	1.050	2,025,030
1998-99	1,620,814	1.055	1,709,321
1999-00	2,158,423	1.061	2,290,257
2000-01	4,686,841	1.065	4,992,266
2001-02	2,629,193	1.068	2,806,817
2002-03	2,450,071	1.070	2,621,724
2003-04	2,012,508	1.072	2,156,910
2004-05	2,259,728	1.080	2,439,941
2005-06	1,331,084	1.084	1,443,070
2006-07	3,788,881	1.104	4,182,835
2007-08	1,772,053	1.124	1,991,864
2008-09	2,334,417	1.133	2,645,398
2009-10	6,019,025	1.164	7,003,833
2010-11	5,490,367	1.203	6,606,817
2011-12	2,741,883	1.244	3,409,999
2012-13	2,537,921	1.339	3,398,480
2013-14	2,848,577	1.441	4,105,427
2014-15	822,381	1.641	1,349,612
2015-16	464,109	3.256	1,511,316
Total	\$62,821,281		\$72,035,792

## Notes:

- (1) Provided by JT2.
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Paid Loss Projection  
Unlimited Losses Including 4850/TD

Program Year	Cumulative Paid Losses as of 12/31/15 (1)	Paid Development Factor as of 12/31/15 (2)	Projected Ultimate Losses (3)
1985-86	\$500,363	1.036	\$518,238
1986-87	1,038,774	1.040	1,080,242
1987-88	130,922	1.042	136,485
1988-89	703,425	1.047	736,555
1989-90	751,039	1.053	790,609
1990-91	1,336,877	1.060	1,417,238
1991-92	1,270,869	1.070	1,359,786
1992-93	1,722,661	1.080	1,860,415
1993-94	1,162,043	1.092	1,269,445
1994-95	837,965	1.107	927,985
1995-96	1,066,267	1.120	1,194,184
1996-97	1,621,849	1.130	1,833,438
1997-98	1,305,848	1.143	1,492,504
1998-99	1,495,923	1.160	1,735,086
1999-00	2,109,398	1.185	2,499,067
2000-01	3,985,358	1.215	4,843,853
2001-02	2,328,819	1.241	2,889,341
2002-03	2,386,972	1.259	3,004,909
2003-04	2,007,232	1.273	2,555,877
2004-05	1,925,900	1.297	2,498,712
2005-06	1,276,742	1.308	1,669,659
2006-07	3,354,936	1.344	4,507,878
2007-08	1,545,883	1.386	2,142,844
2008-09	1,988,363	1.421	2,824,965
2009-10	4,410,455	1.475	6,505,479
2010-11	4,419,659	1.540	6,807,698
2011-12	2,059,041	1.655	3,407,132
2012-13	1,865,425	1.839	3,430,368
2013-14	2,099,319	2.125	4,460,168
2014-15	475,285	2.900	1,378,119
2015-16	156,226	6.569	1,026,274
Total	\$53,339,837		\$72,804,553

## Notes:

- (1) Provided by JT2.
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

IBNR to Case Reserves Ratio Method  
Unlimited Losses Including 4850/TD

Program Year	Reported Development Factor as of 12/31/15 (1)	Paid Development Factor as of 12/31/15 (2)	IBNR to Case Reserves Ratio (3)	Case Reserves 12/31/15 (4)	Estimated IBNR Losses as of 12/31/15 (5)	Estimated Ultimate Losses (6)
1985-86	1.012	1.036	0.492	\$36,828	\$18,119	\$555,310
1986-87	1.013	1.040	0.525	44,845	23,544	1,107,163
1987-88	1.016	1.042	0.610	0	0	130,922
1988-89	1.019	1.047	0.706	0	0	703,425
1989-90	1.023	1.053	0.831	0	0	751,039
1990-91	1.028	1.060	0.903	76,190	68,799	1,481,866
1991-92	1.031	1.070	0.848	67,110	56,909	1,394,888
1992-93	1.035	1.080	0.821	142,524	117,012	1,982,197
1993-94	1.038	1.092	0.773	36,881	28,509	1,227,433
1994-95	1.041	1.107	0.690	122,384	84,445	1,044,794
1995-96	1.045	1.120	0.662	168,263	111,390	1,345,920
1996-97	1.048	1.130	0.649	86,542	56,166	1,764,557
1997-98	1.050	1.143	0.617	622,540	384,107	2,312,495
1998-99	1.055	1.160	0.602	124,891	75,184	1,695,998
1999-00	1.061	1.185	0.585	49,025	28,679	2,187,102
2000-01	1.065	1.215	0.527	701,483	369,682	5,056,523
2001-02	1.068	1.241	0.484	300,374	145,381	2,774,574
2002-03	1.070	1.259	0.467	63,098	29,467	2,479,538
2003-04	1.072	1.273	0.453	5,275	2,390	2,014,898
2004-05	1.080	1.297	0.475	333,828	158,568	2,418,296
2005-06	1.084	1.308	0.492	54,342	26,736	1,357,820
2006-07	1.104	1.344	0.583	433,945	252,990	4,041,871
2007-08	1.124	1.386	0.656	226,170	148,367	1,920,420
2008-09	1.133	1.421	0.658	346,054	227,704	2,562,121
2009-10	1.164	1.475	0.775	1,608,570	1,246,642	7,265,667
2010-11	1.203	1.540	0.930	1,070,708	995,758	6,486,125
2011-12	1.244	1.655	0.981	682,842	669,868	3,411,751
2012-13	1.339	1.839	1.247	672,496	838,602	3,376,523
2013-14	1.441	2.125	1.372	749,258	1,027,982	3,876,559
2014-15	1.641	2.900	1.477	347,096	512,660	1,335,041
2015-16	3.256	6.569	4.474	307,883	1,377,469	1,841,578
Total				\$9,481,444	\$9,083,129	\$71,904,410

## Notes:

- (1) Page 39, Column (2).
- (2) Page 40, Column (2).
- (3)  $[(1) - 1.000] \times (2) / [(2) - (1)]$ .
- (4) Page 39, Column (1) - Page 40, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 39, Column (1).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Bornhuetter-Ferguson Using Reported Losses  
**Unlimited Losses Including 4850/TD**

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 12/31/15 (5)	Estimated Ultimate Losses (6)
2006-07	\$3,097,840	1.104	9.4%	\$291,197	\$3,788,881	\$4,080,078
2007-08	3,079,618	1.124	11.0%	338,758	1,772,053	2,110,811
2008-09	3,447,872	1.133	11.8%	406,849	2,334,417	2,741,266
2009-10	3,477,849	1.164	14.1%	490,377	6,019,025	6,509,402
2010-11	3,623,753	1.203	16.9%	612,414	5,490,367	6,102,781
2011-12	3,771,977	1.244	19.6%	739,307	2,741,883	3,481,190
2012-13	3,652,596	1.339	25.3%	924,107	2,537,921	3,462,028
2013-14	3,934,809	1.441	30.6%	1,204,052	2,848,577	4,052,629
2014-15	4,280,091	1.641	39.1%	1,673,516	822,381	2,495,897
2015-16	4,537,565	3.256	69.3%	3,144,533	464,109	3,608,642
	<b>\$36,903,970</b>			<b>\$9,825,110</b>	<b>\$28,819,613</b>	<b>\$38,644,723</b>

## Notes:

- (1) Page 43, Column (4).
- (2) Page 39, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 39, Column (1).
- (6)  $(4) + (5)$ .

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

*A Priori* Losses for Bornhuetter-Ferguson  
**Unlimited Losses Including 4850/TD**

Program Year	<i>A Priori</i> Loss Rate (1)	Factor to Remove Trend (2)	Trended Payroll (\$00's) (3)	<i>A Priori</i> Ultimate Losses (4)
2006-07	\$9.78	0.619	\$511,717	\$3,097,840
2007-08	9.78	0.615	512,015	3,079,618
2008-09	9.78	0.653	539,882	3,447,872
2009-10	9.78	0.694	512,404	3,477,849
2010-11	9.78	0.738	502,069	3,623,753
2011-12	9.78	0.784	491,942	3,771,977
2012-13	9.78	0.833	448,351	3,652,596
2013-14	9.78	0.885	454,613	3,934,809
2014-15	9.78	0.941	465,077	4,280,091
2015-16	9.78	1.000	463,964	4,537,565
Total			\$4,902,033	\$36,903,970

## Notes:

- (1) Page 44, Item (5).
- (2) Estimated by BAC.
- (3) Page 65, Column (3).
- (4) (1) x (2) x (3).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

*A Priori* Loss Rate for Bornhuetter-Ferguson Method  
**Unlimited Losses Including 4850/TD**

Program Year	<i>A Priori</i> Ultimate Losses (1)	Estimated Pure Premium Trend (2)	Trended Payroll (\$00's) (3)	Constant Dollar Loss Rate (4)
2001-02	\$2,844,984	1.564	\$415,923	\$10.70
2002-03	2,797,783	1.575	461,655	9.54
2003-04	2,339,246	1.585	509,827	7.27
2004-05	2,466,636	1.595	499,663	7.88
2005-06	1,545,773	1.606	523,729	4.74
2006-07	4,329,442	1.617	511,717	13.68
2007-08	2,059,471	1.627	512,015	6.55
2008-09	2,725,073	1.531	539,882	7.73
2009-10	6,784,062	1.441	512,404	19.08
2010-11	6,694,922	1.356	502,069	18.08
2011-12	3,408,769	1.276	491,942	8.84
2012-13	3,411,916	1.200	448,351	9.13
2013-14	4,248,806	1.129	454,613	10.56
2014-15	1,359,915	1.063	465,077	3.11
2015-16	1,350,564	1.000	463,964	2.91
Total	\$48,367,362		\$7,312,828	\$9.32
01/02-14/15	\$35,022,376		\$4,438,069	\$9.78
			(5) Selected A Priori 2015-16 Loss Rate:	\$9.78

## Notes:

- (1) Page 45, Column (3).
- (2) Estimated by BAC.
- (3) Page 65, Column (3).
- (4) (1) x (2) / (3).
- (5) Selected on the basis of (4).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

*A Priori* Ultimate losses  
**Unlimited Losses Including 4850/TD**

Program Year	Reported Loss Projection (1)	Paid Loss Projection (2)	<i>A Priori</i> Selection (3)
1985-86	\$543,371	\$518,238	\$537,191
1986-87	1,098,128	1,080,242	1,089,301
1987-88	132,975	136,485	134,708
1988-89	716,767	736,555	726,526
1989-90	768,495	790,609	779,395
1990-91	1,452,148	1,417,238	1,434,964
1991-92	1,379,360	1,359,786	1,369,755
1992-93	1,929,623	1,860,415	1,895,762
1993-94	1,244,858	1,269,445	1,256,839
1994-95	999,944	927,985	965,073
1995-96	1,289,556	1,194,184	1,243,531
1996-97	1,789,650	1,833,438	1,810,711
1997-98	2,025,030	1,492,504	1,928,388
1998-99	1,709,321	1,735,086	1,721,591
1999-00	2,290,257	2,499,067	2,388,914
2000-01	4,992,266	4,843,853	4,922,948
2001-02	2,806,817	2,889,341	2,844,984
2002-03	2,621,724	3,004,909	2,797,783
2003-04	2,156,910	2,555,877	2,339,246
2004-05	2,439,941	2,498,712	2,466,636
2005-06	1,443,070	1,669,659	1,545,773
2006-07	4,182,835	4,507,878	4,329,442
2007-08	1,991,864	2,142,844	2,059,471
2008-09	2,645,398	2,824,965	2,725,073
2009-10	7,003,833	6,505,479	6,784,062
2010-11	6,606,817	6,807,698	6,694,922
2011-12	3,409,999	3,407,132	3,408,769
2012-13	3,398,480	3,430,368	3,411,916
2013-14	4,105,427	4,460,168	4,248,806
2014-15	1,349,612	1,378,119	1,359,915
2015-16	1,511,316	1,026,274	1,350,564
Total	\$72,035,792	\$72,804,553	\$72,572,959

## Notes:

- (1) Page 39, Column (3).
- (2) Page 40, Column (3).
- (3) Selected on the basis of (1) and (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Frequency Times Severity Method

Program Year	Selected Claim Severity (1)	Factor to Remove Trend (2)	Selected Ultimate Claims (3)	Estimated Ultimate Losses (4)
2006-07	\$76,700	0.619	75	\$3,558,404
2007-08	76,700	0.615	60	2,828,054
2008-09	76,700	0.653	80	4,007,364
2009-10	76,700	0.694	57	3,034,422
2010-11	76,700	0.738	88	4,978,703
2011-12	76,700	0.784	71	4,268,981
2012-13	76,700	0.833	58	3,706,178
2013-14	76,700	0.885	58	3,938,752
2014-15	76,700	0.941	30	2,165,131
2015-16	76,700	1.000	55	4,218,500
Total				\$36,704,489

## Notes:

- (1) Page 47, Item (5).
- (2) Estimated by BAC.
- (3) Page 48, Column (3).
- (4) (1) x (2) x (3).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Calculation of Expected Claim Severity  
Frequency Times Severity Method  
**Unlimited Losses Including 4850/TD**

Program Year	<i>A Priori</i> Ultimate Losses (1)	Estimated Severity Trend (2)	Selected Claim Count (3)	Trended Claim Severity (4)
2004-05	\$2,466,636	1.595	68	\$57,874
2005-06	1,545,773	1.606	53	46,840
2006-07	4,329,442	1.617	75	93,319
2007-08	2,059,471	1.627	60	55,855
2008-09	2,725,073	1.531	80	52,157
2009-10	6,784,062	1.441	57	171,478
2010-11	6,694,922	1.356	88	103,139
2011-12	3,408,769	1.276	71	61,245
2012-13	3,411,916	1.200	58	70,610
2013-14	4,248,806	1.129	58	82,738
2014-15	1,359,915	1.063	30	48,175
2015-16	1,350,564	1.000	55	24,556
Total	\$40,385,349		753	\$72,332
04/05-14/15	\$39,034,785		698	\$76,700
			(5) Selected Severity:	\$76,700

## Notes:

- (1) Page 45, Column (3).
- (2) Estimated by BAC.
- (3) Page 48, Column (3).
- (4) (1) x (2) / (3).
- (5) Selected on the basis of (4).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Selected Claim Counts

Program Year	Reported Claim Count Projection (1)	Bornhuetter- Ferguson Method (2)	Selected Claim Count (3)
1985-86	10		10
1986-87	12		12
1987-88	8		8
1988-89	22		22
1989-90	40		40
1990-91	49		49
1991-92	46		46
1992-93	37		37
1993-94	50		50
1994-95	45		45
1995-96	45		45
1996-97	54		54
1997-98	61		61
1998-99	54		54
1999-00	51		51
2000-01	63		63
2001-02	71		71
2002-03	74		74
2003-04	73		73
2004-05	68		68
2005-06	53		53
2006-07	75		75
2007-08	60		60
2008-09	80		80
2009-10	57		57
2010-11	88		88
2011-12	71		71
2012-13	58		58
2013-14	58		58
2014-15	30		30
2015-16	50	55	55
Total	1,613		1,618

## Notes:

- (1) Page 49, Column (3).
- (2) Page 50, Column (6).
- (3) Selected on the basis of (1) and (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projection of Ultimate # of Indemnity Claims

Program Year	Total Indemnity Claims Reported 12/31/15 <u>(1)</u>	Development Factors as of 12/31/15 <u>(2)</u>	Projected Ultimate Indemnity Claims <u>(3)</u>
1985-86	10	1.000	10
1986-87	12	1.000	12
1987-88	8	1.000	8
1988-89	22	1.000	22
1989-90	40	1.000	40
1990-91	49	1.000	49
1991-92	46	1.000	46
1992-93	37	1.000	37
1993-94	50	1.000	50
1994-95	45	1.000	45
1995-96	45	1.000	45
1996-97	54	1.000	54
1997-98	61	1.000	61
1998-99	54	1.000	54
1999-00	51	1.000	51
2000-01	63	1.000	63
2001-02	71	1.000	71
2002-03	74	1.000	74
2003-04	73	1.000	73
2004-05	68	1.000	68
2005-06	53	1.000	53
2006-07	75	1.000	75
2007-08	60	1.000	60
2008-09	80	1.000	80
2009-10	57	1.000	57
2010-11	88	1.005	88
2011-12	71	1.004	71
2012-13	58	1.007	58
2013-14	58	1.007	58
2014-15	29	1.032	30
2015-16	21	2.358	50
<b>Total</b>	<b>1,583</b>		<b>1,613</b>

## Notes:

- (1) Provided by JT2.
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projection of Ultimate # of Indemnity Claims  
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 12/31/15 (5)	Projected Ultimate Claims (6)
2015-16	59	2.358	57.6%	34	21	55

## Notes:

- (1) Page 51, Item (6).
- (2) Page 49, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 49, Column (1).
- (6)  $(4) + (5)$ .

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Calculation of Expected Claim Counts  
A Priori Claim Count

Program Year	Projected Ultimate Claim Counts (1)	Trended Payroll (\$Millions) (2)	Indicated Claim Frequency (3)
2008-09	80	\$54.0	1.48
2009-10	57	51.2	1.11
2009-10	57	51.2	1.11
2010-11	88	50.2	1.75
2011-12	71	49.2	1.44
2012-13	58	44.8	1.29
2013-14	58	45.5	1.28
2014-15	30	46.5	0.65
2015-16	50	46.4	1.08
Total	549	\$439.1	1.24
08/09-14/15	499	\$392.7	1.26
	(4) Selected Claim Frequency:		1.26
	(5) 2015-16 Trended Payroll (\$Millions):		\$46.4
	(6) 2015-16 A Priori Claim Count:		59

## Notes:

- (1) Page 49, Column (3).
- (2) Page 65, Column (3) / 10,000.
- (3) (1) / (2).
- (4) Selected on the basis of (3).
- (5) Page 65, Column (3) / 10,000.
- (6) (4) x (5).

**Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program**

**Actuarial Analysis of the  
Workers' Compensation Program**

**Future Loss Exhibits**

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Ultimate Unlimited Loss Rate for 2016-17  
**Unlimited Losses Including 4850/TD**

Program Year	2015-16 Level Loss Rate (1)	Expected Increase for 2016-17 (2)	Trended Payroll (\$00's) (3)	Projected Ultimate Losses (4)	Projected 2016-17 Unlimited Loss Rate (5)
2016-17	\$9.62	1.063	\$463,964	<b>4,743,419</b>	\$10.22
				(6) 4850 percentage:	9.3%
				(7) Gross Rate ex 4850 :	\$9.27
				(8) 1M Limit Rate ex 4850 :	\$8.77
				(9) 750K Limit Rate ex 4850 :	\$8.43
				(10) 500K Limit Rate ex 4850 :	\$7.74
				(11) 350K Limit Rate ex 4850 :	\$6.92
				(12) 250K Limit Rate ex 4850 :	\$5.99
				(13) 150K Limit Rate ex 4850 :	\$4.53

Notes:

- (1) Page 54, Item (11).
- (2) 6.3% Expected Increase Estimated by BAC.
- (3) Page 65, Column (2).
- (4) (1) x (2) x (3), rounded.
- (5) (4) / [Page 65, Column (2)], rounded.
- (6) Page 23, Column (3).
- (7) [ 1.00 - (6)] x Unlimited Loss Rate.
- (8) - (13) Unlimited Loss Rate adjusted for Stated Limit & Percentages on Page 23.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

**Unlimited Losses Including 4850/TD**

Projected Future Loss Rate

Program Year	Estimated Ultimate Losses (1)	Pure Premium Trend (2)	Trended Payroll (\$00's) (3)	Trended Loss Rate (4)
2003-04	\$2,160,000	1.585	\$509,827	\$6.72
2004-05	2,450,000	1.595	499,663	7.82
2005-06	1,400,000	1.606	523,729	4.29
2006-07	4,200,000	1.617	511,717	13.27
2007-08	2,000,000	1.627	512,015	6.36
2008-09	2,700,000	1.531	539,882	7.66
2009-10	6,800,000	1.441	512,404	19.12
2010-11	6,500,000	1.356	502,069	17.55
2011-12	3,400,000	1.276	491,942	8.82
2012-13	3,500,000	1.200	448,351	9.37
2013-14	4,000,000	1.129	454,613	9.94
2014-15	2,000,000	1.063	465,077	4.57
<b>Total</b>	<b>\$36,500,000</b>		<b>\$4,961,798</b>	<b>\$9.62</b>
			(5) Selected Loss Rate:	\$9.62

Program Year	Largest Claim (6)	Severity Trend (7)	LDF (8)	Trended Developed Max Claim (9)
2003-04	\$308,870	1.585	1.072	\$524,685
2004-05	458,418	1.595	1.080	789,716
2005-06	273,605	1.606	1.084	476,375
2006-07	822,795	1.617	1.104	1,468,427
2007-08	278,767	1.627	1.124	509,899
2008-09	430,181	1.531	1.133	746,432
2009-10	2,811,520	1.441	1.164	4,713,517
2010-11	760,657	1.356	1.203	1,240,914
2011-12	368,393	1.276	1.244	584,448
2012-13	650,000	1.200	1.339	1,044,761
		(10) Factor for Unlimited Retention:		1.000

(11) Unlimited 2015-16 Rate: **\$9.62**

Notes:

- (1) Page 38, Column (6).
- (2) Page 44, Column (2).
- (3) Page 65, Column (3).
- (4) (1) x (2) / (3).
- (5) Based on Column (4).
- (6) Provided by JT2.
- (7) Page 47, Column (2). Indexed to 2015-16.
- (8) Page 39, Column (2).
- (9) (6) x (7) x (8).
- (10) Estimated by BAC.
- (11) (5) x (10).

**Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program**

**Actuarial Analysis of the  
Workers' Compensation Program**

**Discounting Exhibits**

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Discounted Value of Unpaid Losses as of June 30, 2016  
Assuming a 1.5% Interest Rate

**Limited Self-Insured Losses Excluding 4850/TD**

Program Year	Projected Unpaid Losses (1)	Discount Factor (2)	Discounted Unpaid Losses (3)
1985-86	\$9,667	0.944	\$9,128
1986-87	847	0.937	794
1987-88	1,015	0.934	948
1988-89	574	0.925	531
1989-90	1,348	0.915	1,234
1990-91	32,290	0.915	29,533
1991-92	76,003	0.912	69,350
1992-93	72,187	0.908	65,571
1993-94	65,918	0.904	59,562
1994-95	137,485	0.897	123,267
1995-96	22,570	0.892	20,138
1996-97	118,418	0.889	105,253
1997-98	101,369	0.885	89,688
1998-99	145,712	0.882	128,587
1999-00	99,691	0.883	88,027
2000-01	168,947	0.885	149,520
2001-02	251,672	0.889	223,770
2002-03	120,584	0.896	108,064
2003-04	97,823	0.898	87,860
2004-05	451,368	0.891	402,023
2005-06	120,680	0.881	106,274
2006-07	470,707	0.876	412,509
2007-08	431,775	0.876	378,200
2008-09	581,323	0.874	508,111
2009-10	1,187,708	0.872	1,036,011
2010-11	632,951	0.870	550,621
2011-12	952,805	0.865	824,294
2012-13	862,794	0.868	749,311
2013-14	1,269,598	0.878	1,114,435
2014-15	1,230,192	0.889	1,093,117
2015-16	1,874,351	0.903	1,691,900
<b>Total</b>	<b>\$11,590,372</b>		<b>\$10,227,631</b>

(4) Indicated Discount Factor: 0.882

Notes:

- (1) Page 21, Column (6).
- (2) (3) / (1).
- (3) Based upon a 1.5% interest rate.
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Discounted Value of 2016-17 Losses as of July 1, 2016  
Assuming a 1.5% Interest rate

Unlimited Losses Including 4850/TD

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2016-17	\$522,952	0.993	\$519,073
2017-18	855,872	0.978	836,969
2018-19	479,318	0.963	461,805
2019-20	614,804	0.949	583,587
2020-21	379,944	0.935	355,322
2021-22	252,641	0.921	232,777
2022-23	163,492	0.908	148,411
2023-24	184,409	0.894	164,925
2024-25	86,434	0.881	76,159
2025-26	53,634	0.868	46,560
2026-27	9,237	0.855	7,901
2027-28	105,985	0.843	89,307
2028-29	32,893	0.830	27,308
2029-30	52,568	0.818	42,996
2030-31	57,881	0.806	46,642
2031-32	100,785	0.794	80,015
2032-33	101,355	0.782	79,279
2033-34	70,508	0.771	54,335
2034-35	50,833	0.759	38,594
2035-36	40,828	0.748	30,540
2036-37	37,815	0.737	27,868
2037-38	58,012	0.726	42,121
2038-39	59,616	0.715	42,646
2039-40	40,668	0.705	28,662
2040-41	41,432	0.694	28,768
41-42 to 52-53	289,504	0.631	182,733
<b>Total</b>	<b>\$4,743,419</b>		<b>\$4,275,303</b>

(4) Indicated Discount Factor: 0.901

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 1.5% interest rate.
- (3) (1) x (2).
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Discounted Value of 2016-17 Losses as of July 1, 2016  
Assuming a 1.5% Interest rate

\$1 Million SIR  
Limited Self-Insured Losses Including 4850/TD

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2016-17	\$497,810	0.993	\$494,118
2017-18	814,724	0.978	796,731
2018-19	456,274	0.963	439,603
2019-20	585,246	0.949	555,530
2020-21	361,678	0.935	338,240
2021-22	240,494	0.921	221,586
2022-23	155,632	0.908	141,276
2023-24	175,543	0.894	156,996
2024-25	82,278	0.881	72,498
2025-26	51,056	0.868	44,322
2026-27	8,793	0.855	7,521
2027-28	100,889	0.843	85,013
2028-29	32,409	0.830	26,905
2029-30	51,052	0.818	41,756
2030-31	56,006	0.806	45,131
2031-32	96,584	0.794	76,680
2032-33	96,913	0.782	75,804
2033-34	66,763	0.771	51,449
2034-35	48,124	0.759	36,538
2035-36	38,646	0.748	28,908
2036-37	35,790	0.737	26,376
2037-38	54,898	0.726	39,860
2038-39	56,614	0.715	40,498
2039-40	38,451	0.705	27,099
2040-41	39,168	0.694	27,196
41-42 to 52-53	273,534	0.631	172,600
Total	\$4,515,370		\$4,070,234

(4) Indicated Discount Factor: 0.901

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 1.5% interest rate.
- (3) (1) x (2).
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Discounted Value of 2016-17 Losses as of July 1, 2016  
Assuming a 1.5% Interest rate

\$500,000 SIR  
Limited Self-Insured Losses Including 4850/TD

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2016-17	\$444,724	0.993	\$441,425
2017-18	727,843	0.978	711,768
2018-19	407,618	0.963	392,724
2019-20	525,565	0.949	498,879
2020-21	341,794	0.935	319,645
2021-22	231,196	0.921	213,019
2022-23	153,509	0.908	139,349
2023-24	167,808	0.894	150,078
2024-25	84,871	0.881	74,782
2025-26	56,899	0.868	49,394
2026-27	20,750	0.855	17,747
2027-28	95,595	0.843	80,552
2028-29	25,534	0.830	21,198
2029-30	40,637	0.818	33,237
2030-31	44,570	0.806	35,916
2031-32	77,145	0.794	61,247
2032-33	77,068	0.782	60,282
2033-34	53,272	0.771	41,053
2034-35	38,259	0.759	29,048
2035-36	30,640	0.748	22,919
2036-37	28,309	0.737	20,862
2037-38	43,297	0.726	31,437
2038-39	11,499	0.715	8,226
2039-40	33,513	0.705	23,619
2040-41	34,121	0.694	23,692
41-42 to 52-53	237,820	0.631	150,006
Total	\$4,033,856		\$3,652,104

(4) Indicated Discount Factor: 0.905

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 1.5% interest rate.
- (3) (1) x (2).
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Discounted Value of 2016-17 Losses as of July 1, 2016  
Assuming a 1.5% Interest rate

\$350,000 SIR  
Limited Self-Insured Losses Including 4850/TD

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2016-17	\$406,086	0.993	\$403,074
2017-18	664,242	0.978	649,572
2018-19	375,505	0.963	361,785
2019-20	507,650	0.949	481,873
2020-21	322,213	0.935	301,333
2021-22	219,065	0.921	201,841
2022-23	147,209	0.908	133,631
2023-24	156,327	0.894	139,810
2024-25	82,688	0.881	72,858
2025-26	57,613	0.868	50,014
2026-27	26,745	0.855	22,875
2027-28	86,688	0.843	73,046
2028-29	18,360	0.830	15,242
2029-30	30,608	0.818	25,035
2030-31	33,866	0.806	27,290
2031-32	60,132	0.794	47,740
2032-33	60,102	0.782	47,011
2033-34	42,543	0.771	32,785
2034-35	30,448	0.759	23,117
2035-36	24,321	0.748	18,192
2036-37	22,420	0.737	16,523
2037-38	34,199	0.726	24,831
2038-39	9,345	0.715	6,685
2039-40	12,913	0.705	9,101
2040-41	28,354	0.694	19,688
41-42 to 52-53	196,374	0.630	123,689
Total	\$3,656,017		\$3,328,641

(4) Indicated Discount Factor: 0.910

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 1.5% interest rate.
- (3) (1) x (2).
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Discounted Value of 2016-17 Losses as of July 1, 2016  
Assuming a 1.5% Interest rate

\$250,000 SIR

Limited Self-Insured Losses Including 4850/TD

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2016-17	\$363,110	0.993	\$360,417
2017-18	642,978	0.978	628,778
2018-19	355,464	0.963	342,476
2019-20	437,600	0.949	415,381
2020-21	289,099	0.935	270,364
2021-22	195,252	0.921	179,900
2022-23	131,260	0.908	119,153
2023-24	135,627	0.894	121,297
2024-25	73,426	0.881	64,697
2025-26	52,066	0.868	45,199
2026-27	26,989	0.855	23,083
2027-28	72,388	0.843	60,997
2028-29	14,244	0.830	11,825
2029-30	23,499	0.818	19,220
2030-31	25,862	0.806	20,840
2031-32	45,479	0.794	36,107
2032-33	45,123	0.782	35,294
2033-34	31,632	0.771	24,377
2034-35	22,552	0.759	17,123
2035-36	17,962	0.748	13,436
2036-37	16,518	0.737	12,173
2037-38	7,361	0.726	5,345
2038-39	9,666	0.715	6,915
2039-40	10,082	0.705	7,105
2040-41	22,444	0.694	15,584
41-42 to 52-53	154,353	0.630	97,191
Total	\$3,222,035		\$2,954,277

(4) Indicated Discount Factor: 0.917

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 1.5% interest rate.
- (3) (1) x (2).
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

**Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program**

**Actuarial Analysis of the  
Workers' Compensation Program**

**Claims Data Exhibits**

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Cumulative Reported Losses (\$000's) as of December 31, 2015 - Unlimited

Program Year	<u>Months of Development</u>										
	<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>
1994										1,070	1,053
1995									746	747	767
1996								841	838	849	855
1997							1,502	1,656	1,665	1,676	1,682
1998						1,124	1,054	1,035	1,027	1,028	1,086
1999					1,161	1,279	1,290	1,286	1,356	1,441	1,451
2000				1,082	1,243	1,263	1,230	1,277	1,471	1,557	1,970
2001			1,697	2,579	2,857	2,668	3,101	3,477	3,769	4,114	4,088
2002		1,239	1,886	2,196	2,336	2,291	2,328	2,367	2,375	2,354	2,361
2003	644	2,163	2,625	2,510	2,494	2,445	2,452	2,452	2,440	2,440	2,415
2004	676	1,643	1,676	1,757	1,803	1,906	1,862	1,788	1,781	1,852	1,998
2005	882	1,861	1,899	2,025	2,284	1,955	2,133	2,183	2,166	2,146	2,257
2006	507	1,453	1,896	2,268	1,889	1,664	1,672	1,683	1,644	1,320	1,331
2007	696	3,220	4,322	3,231	3,180	3,579	3,866	3,789	3,785	3,789	
2008	317	1,879	1,778	1,423	1,428	1,526	1,620	2,071	1,772		
2009	488	1,618	2,060	1,916	1,940	2,331	2,207	2,334			
2010	657	2,758	3,500	3,588	5,609	5,938	6,019				
2011	1,155	4,758	4,564	4,256	5,135	5,490					
2012	586	1,659	2,086	2,501	2,742						
2013	266	1,347	2,301	2,538							
2014	400	1,704	2,849								
2015	79	822									
2016	464										
	<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>
ALL YR VOL	3.656	1.225	1.015	1.115	1.029	1.029	1.041	1.007	1.010	1.032	
REFERENCE	2.872	1.314	1.163	1.116	1.062	1.029	1.011	1.009	1.007	1.004	1.089
SELECTED	4.293	1.282	1.036	1.113	1.046	1.022	1.046	1.009	1.007	1.029	1.089
CUMULATIVE	8.076	1.881	1.467	1.416	1.272	1.217	1.190	1.138	1.128	1.120	1.089
@ 12/31/15	3.256	1.641	1.441	1.339	1.244	1.203	1.164	1.133	1.124	1.104	1.084

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Cumulative Paid Losses (\$000's) as of December 31, 2015 - Unlimited

Program Year	<u>Months of Development</u>										
	<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>
1994										1,022	1,027
1995									738	743	747
1996								838	838	839	843
1997							1,345	1,420	1,467	1,505	1,522
1998						882	932	968	989	999	1,011
1999					988	1,102	1,188	1,232	1,338	1,361	1,382
2000				688	774	846	931	1,029	1,136	1,254	1,684
2001			863	1,708	2,057	2,279	2,518	2,758	2,905	3,162	3,385
2002		654	1,162	1,499	1,859	2,047	2,128	2,155	2,183	2,213	2,248
2003	238	991	1,485	1,906	2,111	2,271	2,276	2,279	2,282	2,379	2,381
2004	116	726	1,078	1,264	1,557	1,653	1,667	1,693	1,742	1,764	1,998
2005	229	1,059	1,332	1,459	1,532	1,585	1,714	1,819	1,842	1,866	1,894
2006	123	646	1,005	1,124	1,211	1,254	1,262	1,269	1,272	1,275	1,277
2007	224	1,357	2,048	2,507	2,751	3,107	3,160	3,248	3,329	3,355	
2008	65	797	1,117	1,190	1,236	1,294	1,369	1,511	1,546		
2009	156	891	1,433	1,593	1,719	1,820	1,831	1,988			
2010	174	1,675	2,265	2,775	3,033	4,299	4,410				
2011	376	2,001	3,230	3,761	3,999	4,420					
2012	192	728	1,366	1,855	2,059						
2013	136	805	1,579	1,865							
2014	161	1,145	2,099								
2015	23	475									
2016	156										
	<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>
ALL YR VOL	6.003	1.573	1.228	1.110	1.127	1.039	1.047	1.029	1.030	1.050	
REFERENCE	3.815	1.674	1.339	1.226	1.118	1.069	1.055	1.040	1.020	1.009	1.318
SELECTED	8.499	1.622	1.222	1.104	1.117	1.037	1.051	1.027	1.023	1.040	1.318
CUMULATIVE	32.613	3.837	2.366	1.936	1.753	1.569	1.513	1.440	1.402	1.370	1.318
@ 12/31/15	6.569	2.900	2.125	1.839	1.655	1.540	1.475	1.421	1.386	1.344	1.308

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Cumulative # of Indemnity Losses Reported as of December 31, 2015 - Unlimited

Program <u>Year</u>	<u>Months of Development</u>												
	<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>	<u>138</u>	
2005			67	67	68	68	68	68	68	68	68	68	68
2006		52	53	54	54	53	53	53	53	53	53	53	
2007	32	69	74	74	74	74	75	75	75	75			
2008	22	56	58	59	59	60	60	60	60				
2009	30	78	79	78	78	79	79	80					
2010	25	53	55	56	56	56	57						
2011	44	86	87	86	87	88							
2012	25	66	68	69	71								
2013	19	53	56	58									
2014	26	57	58										
2015	9	29											
2016	21												
	<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 - 138</u>	<u>138 - Ult.</u>	
ALL YR VOL	2.358	1.032	1.007	1.007	1.004	1.005	1.003	1.000	1.000	1.000	1.000		
SELECTED	2.358	1.032	1.007	1.007	1.004	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000
CUMULATIVE	2.490	1.056	1.024	1.017	1.009	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Program Information

Program Year	Self-Insured Retention (SIR) (1)	Payroll (\$00's) (2)	Payroll Trended to 2015-16 (\$00's) (3)
1985-86	\$150,000	\$0	\$0
1986-87	200,000	0	0
1987-88	250,000	0	0
1988-89	250,000	0	0
1989-90	250,000	0	0
1990-91	300,000	0	0
1991-92	250,000	0	0
1992-93	250,000	0	0
1993-94	275,000	0	0
1994-95	300,000	0	0
1995-96	300,000	0	0
1996-97	300,000	0	0
1997-98	300,000	204,799	348,069
1998-99	300,000	212,991	344,754
1999-00	300,000	267,420	412,243
2000-01	300,000	263,274	386,525
2001-02	350,000	297,462	415,923
2002-03	500,000	346,678	461,655
2003-04	NO XS	401,995	509,827
2004-05	500,000	401,860	499,663
2005-06	500,000	429,640	523,729
2006-07	500,000	428,182	511,717
2007-08	500,000	437,000	512,015
2008-09	500,000	470,000	539,882
2009-10	500,000	455,000	512,404
2010-11	250,000	454,739	502,069
2011-12	250,000	454,479	491,942
2012-13	250,000	422,491	448,351
2013-14	250,000	436,959	454,613
2014-15	250,000	455,957	465,077
2015-16	250,000	463,964	463,964
2016-17	?	473,243	463,964

## Notes:

- (1) Provided by MBASIA.
- (2) Provided by MBASIA. 2016-17 estimated by BAC.
- (3) Estimated by BAC.