

# **Monterey Bay Area Self Insurance Authority**

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

**BAY ACTUARIAL CONSULTANTS  
Moraga, California  
April 4, 2019**

# Bay Actuarial Consultants

April 4, 2019

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. MBASIA members, instead of MBASIA, currently pay all Section 4850 workers' compensation benefits and a large portion of the temporary disability benefits ("TD") directly. Therefore the Authority itself currently has no liability for unpaid 4850 and only a very small TD liability, which we have estimated conservatively. Because of the way 4850 is handled we provided two sets of recommended contribution rates. The first set would cover all workers' compensation benefits. These rates could be used to compare excess insurance quotes that cover all benefits. The second set of rates covers everything except 4850. These are for projecting the Authority's internal funding requirements. We also included, as management information, a third set of contribution rates. The third set excludes all 4850 and all TD benefits. This report covers the following topics:

- 1) **Projected 2019-20 Losses & Rates of Loss.** We projected the losses expected to be incurred during 2019-20 and also expressed this as a rate of loss per \$100 of payroll. Rates are based on projected 2019-20 payroll of \$63.53 million, a 5.3% increase over the projected 2018-19 payroll of \$60.33 million.
- 2) **Unpaid Losses.** We estimated the Authority's liability for unpaid losses as of December 31, 2018 and projected the June 30, 2019 liability.
- 3) **Discounting.** We discounted the projected 2019-20 losses and the Authority's liabilities at 2.0% 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 broke out the liabilities into their short-term and long-term components.

### **Conditions & Limitations**

This report is for the Authority's internal use. The Authority may provide a copy to its financial auditors. Bay Actuarial does not authorize any other use. In particular, those interested in providing insurance to the Authority must perform their own actuarial analysis and may not rely upon our work.

Risk Management Services Company and MBASIA provided the loss and payroll data. 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 a specific claim. These include loss payments, attorney's fees, and other expenses linked to a specific claim.

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 2019-20 Losses Excluding 4850

Table I shows the MBASIA's projected losses for 2019-20 at various self-insured retentions ("SIR's) ranging between \$250,000 and \$1,000,000. These amounts are not discounted for the time value of money and do not include 4850 benefits, claims handling fees, or program administration or excess insurance costs. This projection covers every claim with a date of loss between July 1, 2019 and June 30, 2020.

Table I: Projected 2019-20 Undiscounted Losses (Includes All Benefits Except 4850)						
Probability Level	Projected Loss in \$1,000's					Unlimited Retention
	\$250,000 SIR	\$350,000 SIR	\$500,000 SIR	\$750,000 SIR	\$1,000,000 SIR	
<b>Central Estimate</b>	<b>\$3,785</b>	<b>\$4,328</b>	<b>\$4,831</b>	<b>\$5,301</b>	<b>\$5,543</b>	<b>\$6,024</b>
60%	3,971	4,540	5,067	5,556	5,808	6,307
70%	<b>\$4,374</b>	5,029	5,641	6,215	6,512	7,109
80%	4,880	5,644	6,365	7,050	7,405	8,128
90%	5,642	6,575	7,466	8,324	8,769	9,693

We project that 4850 benefits will total **\$150,000** in 2019-20. These are excluded from the projected losses in Table I because those benefits are paid directly by the members and not by MBASIA. Claim payments can stretch out for many years beyond the date of a loss so projections like this are typically "discounted" to reflect the time value of money. An interest rate of 2.0% appears reasonable in the current financial environment. Discounting at 2.0% interest would reduce each of the amounts in Table I by about 9.5%.

The table shows "actuarial central estimates" plus estimates at higher probability levels. For example, we estimate that there is a 70% probability that the actual 2019-20 \$250,000 SIR losses, excluding 4850, will be less than **\$4.374 million**.

Loss projections like those in Table I move in tandem with the actual exposure to loss. Exposure is best measured by total number of hours worked by covered employees. This statistic, hours worked, is rarely available to us so we use the

total covered payroll as a proxy. Actual calendar year 2018 payroll was up 9.4% over calendar year 2017. Part of this payroll increase was due to an actual increase in covered hours worked. We learned that Greenfield now covers the fire department and that Del Rey Oaks “expanded the police department to serve the airport.” However most of the 9.4% payroll increase in 2018 must have been due to employee raises. Raises to existing employees increase the payroll expenditure but do not increase the exposure to workers’ compensation losses.

Because of the 2018 raises and the increased exposure we estimate that 2018-19 payroll will be 13.7% higher than last year’s projection for 2017-18. We further project that 2019-20 payroll will be 5.4% higher than 2018-19.

We estimate that the actual hours worked exposure rose 2.0% between 2017-18 and 2018-19, and project that it will increase 1.0% between 2018-19 and 2019-20.

### Projected Rates of Loss excluding 4850

Tables II shows MBASIA’s projected rates of loss per \$100 of covered payroll. It was constructed by dividing the Table I total loss projections by the projected payroll and then discounting to present value assuming a 2.0% interest rate. The multiplicative present value factors underlying these rates range between 0.881 and 0.906.

All rates are based on projected 2019-20 payroll of **\$63.53 million**.

<b>Table II: Projected 2019-20 Discounted Loss Rates (2.0% interest rate – All Benefits Except 4850)</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
<b>Central Estimate</b>	<b>\$5.40</b>	<b>\$6.12</b>	<b>\$6.78</b>	<b>\$7.40</b>	<b>\$7.70</b>	<b>\$8.35</b>
60%	5.66	6.42	7.11	7.76	8.07	8.75
70%	<b>\$6.24</b>	7.11	7.92	8.68	9.05	9.86
80%	6.96	7.98	8.94	9.85	10.29	11.27
90%	8.05	9.29	10.48	11.63	12.19	13.44
<b>18-19 Central Estimate</b>	<b>\$5.47</b>	<b>\$6.28</b>	<b>\$6.96</b>	<b>\$7.53</b>	<b>\$7.83</b>	<b>\$8.27</b>
<b>Change in C.E.</b>	<b>-1.3%</b>	<b>-2.6%</b>	<b>-2.6%</b>	<b>-1.7%</b>	<b>-1.7%</b>	<b>+1.0%</b>

The next to last row in Table I shows last year’s projected 2018-19 central estimate rates. The bottom row shows the percentage changes between last year’s and this year’s central estimate rates.

## Projected 2019-20 Total Losses Including 4850

The central estimates in Table III each include the **\$150,000** of 4850 benefits that were excluded from Table I.

<b>Table III: Projected 2019-20 Undiscounted Losses (Includes All Benefits Including 4850)</b>						
Probability <u>Level</u>	<u>Projected Loss in \$1,000's</u>					Unlimited <u>Retention</u>
	\$250,000 <u>SIR</u>	\$350,000 <u>SIR</u>	\$500,000 <u>SIR</u>	\$750,000 <u>SIR</u>	\$1,000,000 <u>SIR</u>	
<b>Central Estimate</b>	<b>\$3,935</b>	<b>\$4,478</b>	<b>\$4,981</b>	<b>\$5,451</b>	<b>\$5,693</b>	<b>\$6,174</b>
60%	4,128	4,697	5,224	5,713	5,966	6,464
70%	<b>\$4,548</b>	5,203	5,816	6,391	6,689	7,286
80%	5,073	5,840	6,562	7,250	7,605	8,331
90%	5,866	6,803	7,697	8,559	9,006	9,935

Table IV shows projected rates of loss corresponding to Table III.

<b>Table IV: Projected 2019-20 Discounted Loss Rates (2.0% interest rate – Full Rate Including 4850)</b>						
Probability <u>Level</u>	<u>Projected Loss per \$100 of Payroll</u>					Unlimited <u>Retention</u>
	\$250,000 <u>SIR</u>	\$350,000 <u>SIR</u>	\$500,000 <u>SIR</u>	\$750,000 <u>SIR</u>	\$1,000,000 <u>SIR</u>	
<b>Central Estimate</b>	<b>\$5.61</b>	<b>\$6.33</b>	<b>\$6.99</b>	<b>\$7.61</b>	<b>\$7.91</b>	<b>\$8.56</b>
60%	5.89	6.64	7.33	7.98	8.29	8.96
70%	<b>\$6.49</b>	7.36	8.17	8.93	9.30	10.10
80%	7.23	8.25	9.21	10.13	10.57	11.55
90%	8.36	9.62	10.81	11.96	12.52	13.78
<b>17-18 Central Estimate</b>	<b>\$6.36</b>	<b>\$7.16</b>	<b>\$7.83</b>	<b>\$8.40</b>	<b>\$8.69</b>	<b>\$9.13</b>
<b>Change in C.E.</b>	<b>-11.8%</b>	<b>-11.6%</b>	<b>-10.7%</b>	<b>-9.4%</b>	<b>-9.0%</b>	<b>-6.2%</b>

### Rate Changes

The unlimited central estimate rate of \$8.56 in Table IV is down 6.2% from last year. Projected losses rose by 8.1% while projected payroll rose by more than 15%. The percentage changes in the bottom row of Table II are much smaller than those in Table IV. That is because we are giving much less credit for removing the 4850 exposure than we did last year. 4850 expenditures have trended down dramatically over the past few years. Only \$46,000 was expended on 4850 in 2017-18.

## Temporary Disability Benefits Data

The loss data provided by the claims administrator always includes 4850 “vouchers.” This represents 4850 losses paid by the city instead of the claims administrator. This data never used to show the Temporary Disability (“TD”) portion of the benefits as a separate item. TD was a portion of the broader “indemnity” benefits that were shown but was never broken out and shown separately. This meant that before 2016 TD losses had always been represented in the contribution rates as a component of the indemnity benefit.

In 2016 the administrator began to provide more detailed data. The new data broke out indemnity losses into components, including TD. We continued to include the TD benefit as part of the contribution rate.

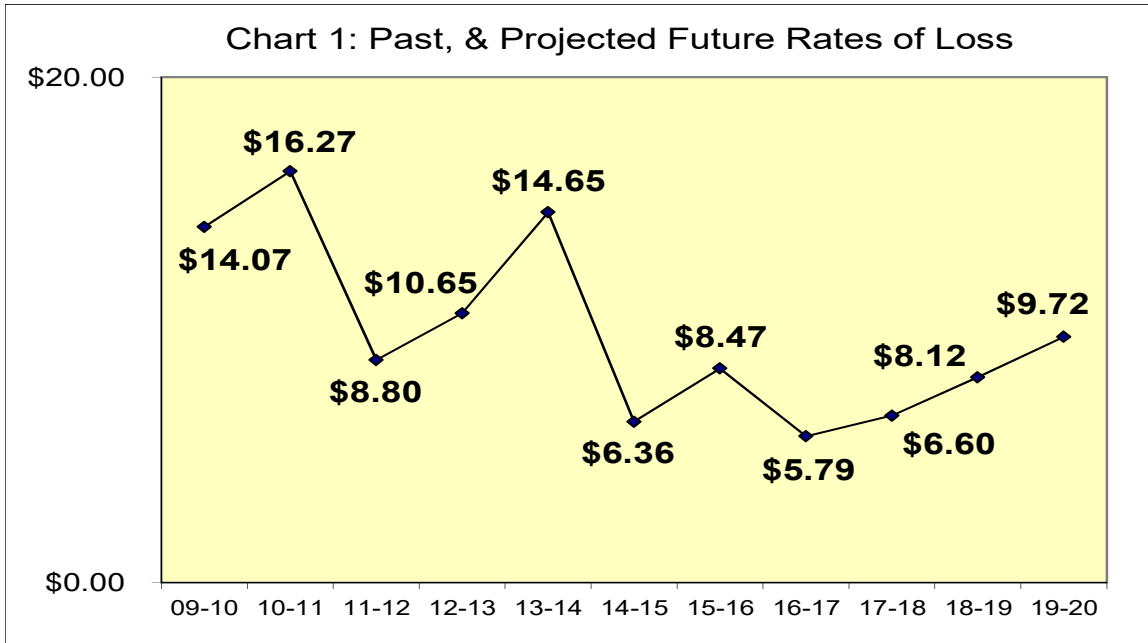
We learned recently that the administrator actually paid only a small portion of the TD losses that are included in the new data, while the cities paid the rest. The cities pay their portion when the administrator sends them a TD voucher. We have also learned that these procedures are expected to change in 2020. The administrator will reimburse the cities for TD voucher payments once per year. Therefore the 2019-20 rates in Table II continue to include a TD component, just as they have all along. As management information we also provide Table V, which shows rates that exclude both TD and 4850 benefits. These Table V rates are based on the assumption that TD will cost **\$360,000** in 2019-20 and that 4850 will cost **\$150,000**.

<b>Table V: Projected 2019-20 Discounted Loss Rates (2.0% interest rate – 4850 &amp; TD Excluded)</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>
<b>Central Estimate</b>	<b>\$4.89</b>	<b>\$5.61</b>	<b>\$6.28</b>	<b>\$6.90</b>	<b>\$7.20</b>	<b>\$7.86</b>
60%	5.12	5.88	6.58	7.23	7.55	8.22
70%	<b>\$5.64</b>	6.52	7.33	8.09	8.46	9.27
80%	6.30	7.31	8.27	9.18	9.62	10.60
90%	7.28	8.52	9.70	10.84	11.40	12.64

This TD issue has almost no effect on the liability for unpaid losses. Only a small but unknown portion of the unpaid TD is a true MBASIA liability, since most is being paid by the cities. We have estimated that small TD liability very conservatively.

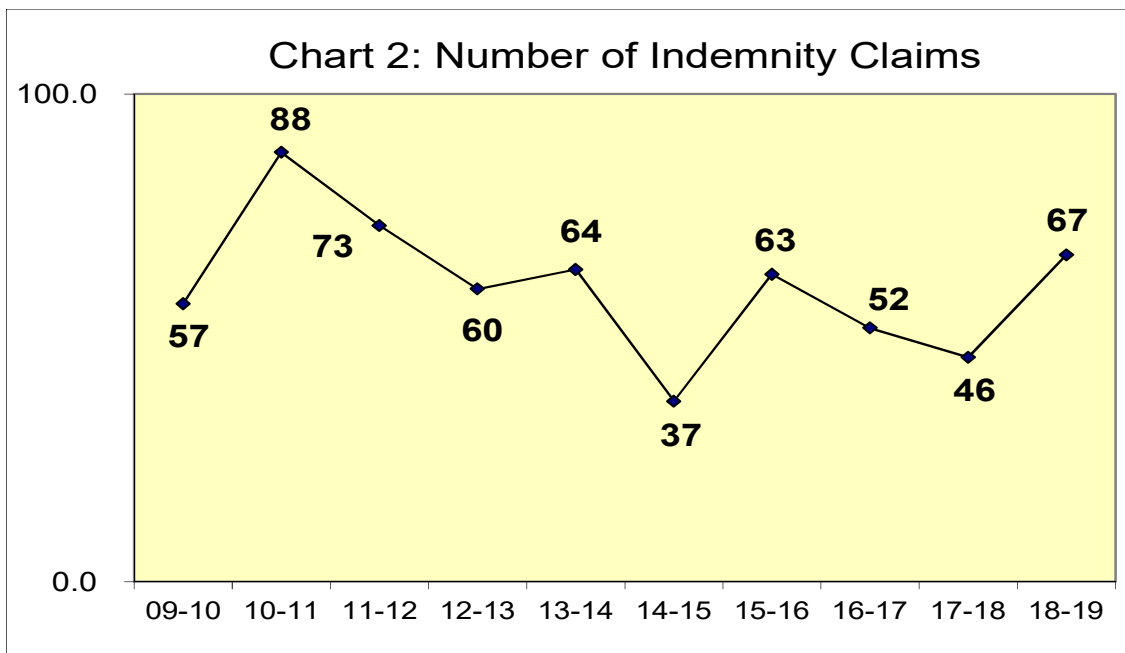
### The Authority's Past Rates of Loss

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. **\$9.72** is the undiscounted central estimate unlimited rate for 2019-20. The rates in Chart 1 include 4850 and TD.



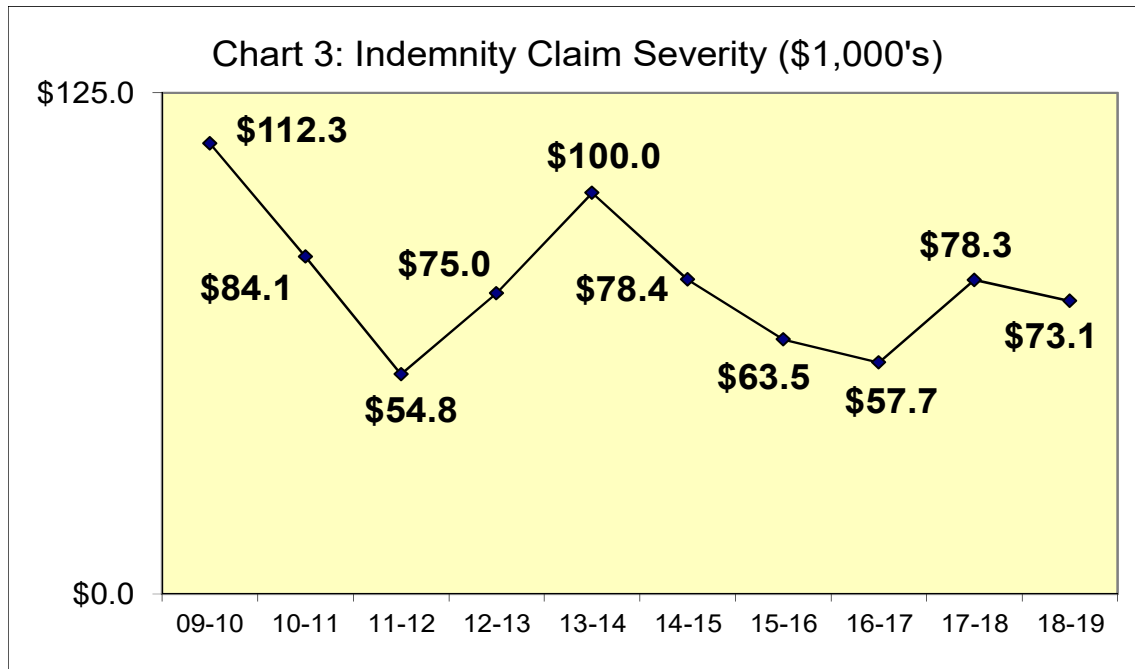
### Number of Indemnity Claims

Claim frequency is an important diagnostic statistic. Chart 2 shows the estimated number of indemnity claims incurred over the last ten years.



### 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 and TD.



### Liability for Unpaid Losses

We estimate that the liability for unpaid losses was **\$13,730,000** on December 31, 2018 and that it will be **\$13,721,000** on June 30, 2019. The discounted values are about 9.5% lower. Table VI shows December 31, 2018 and Table VII shows June 30, 2019. Unpaid 4850 is excluded.

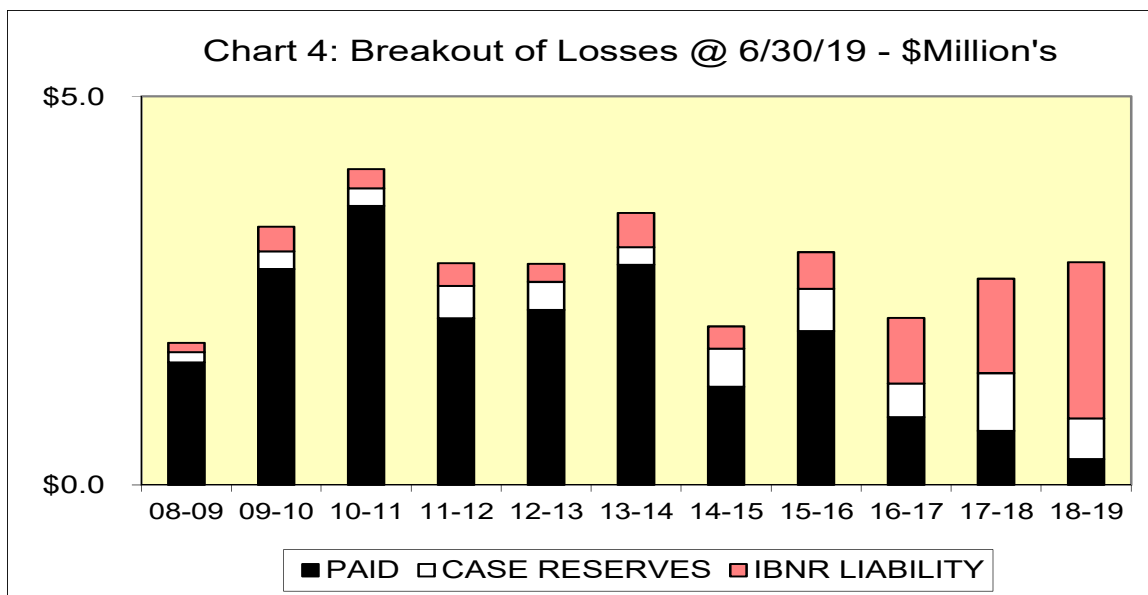
Table VI: Estimated Liability for Unpaid Losses as of December 31, 2018 - \$1,000's		
Probability Level	Undiscounted Losses	Discounted at 2.0% Interest Losses
<b>Central Estimate</b>	<b>\$13,730</b>	<b>\$12,420</b>
60%	14,004	12,668
70%	14,553	13,165
80%	15,240	13,786
90%	16,338	14,780

Table VII: Projected Liability for Unpaid Losses as of June 30, 2019 - \$1,000's		
Probability Level	Undiscounted Losses	Discounted at 2.0% Interest Losses
<b>Central Estimate</b>	<b>\$13,721</b>	<b>\$12,412</b>
60%	14,133	12,785
70%	14,956	13,530
80%	16,054	14,523
90%	17,700	16,012

The 90% probability level estimate is 19% higher than the central estimate at December 31 but 29% higher at June 30. That is because both estimates are based on December 31 data. The June 30 projections include six months of projected new losses that have not yet occurred so of course the uncertainty is currently much higher. If the liabilities were to be re-estimated at June 30 using June 30 data that 29% "probability loading" would then fall back toward the 19% level.

#### Loss Breakout as of 6/30/19

We project that the Authority's liability of **\$13,721,000** will comprise **\$6,330,000** in case reserves for known claims and an IBNR liability of **\$7,391,000**. Chart 4 breaks out the estimated total program year losses for 2008-09 through 2018-19 into their components: losses paid, case reserves, and IBNR liability.



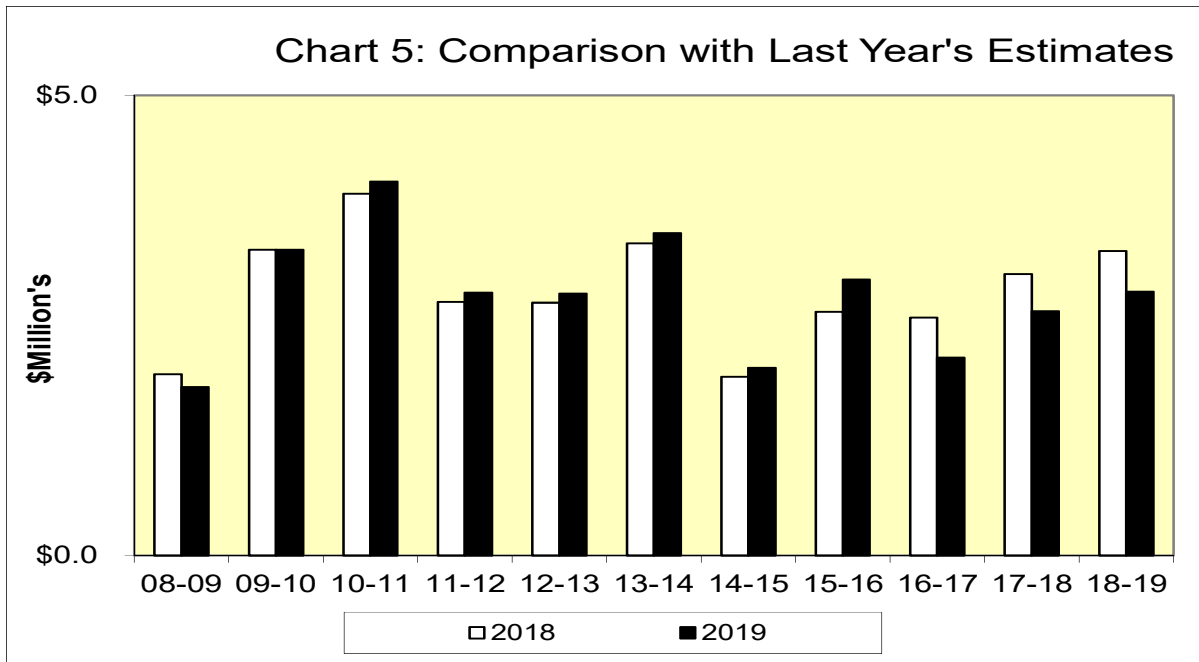
There is \$1.17 of projected IBNR liability for every \$1.00 of projected case reserves. Last year this ratio was \$1.65. The average case reserve has increased 8.7%.

## Short-Term Liability

Short-term liabilities are those expected to be expended within twelve months. The limited 6/30/19 liability comprises **\$2,381,000** in short-term and **\$11,340,000** in long-term liabilities.

## Comparison with Last Year's Estimates

Chart 5 compares this year's estimates of the limited ultimate losses with last year's. It shows limited losses excluding 4850/TD benefits. The total change for all years through 2017-18 was an increase of \$66,059.



## Reconciling the 12/31/17 & 12/31/18 Liabilities

In the 2018 report we estimated that the liability, excluding 4850, was **\$13.699 million** on December 31, 2017. Table IV shows the new undiscounted central estimate of **\$13.730 million**. Table VI reconciles these two amounts.

<b>Table VI: Reconcile 12/31/17 &amp; 12/31/18 Liabilities</b>	
(\$ Millions)	
Estimated 12/31/17 Liability	\$13,699,283
Payments 1/1/18 to 12/31/18	-2,997,212
Change in estimates for 12/31/17 and Prior	+267,339
Estimated Losses 1/1/18 to 12/31/18	+2,760,129
<hr/>	
12/31/18 Liability	\$13,729,539

## Interest Rates

We discounted the rates and liabilities using a 2.0% 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>1.5%</b>	<b>2.0%</b>	<b>2.37%</b>	<b>2.39%</b>
<b>UNL Rate</b>	<b>1.135</b>	<b>1.062</b>	<b>1.031</b>	<b>1.000</b>	<b>0.978</b>	<b>0.977</b>
<b>1M Rate</b>	<b>1.133</b>	<b>1.062</b>	<b>1.031</b>	<b>1.000</b>	<b>0.980</b>	<b>0.978</b>
<b>750K Rate</b>	<b>1.127</b>	<b>1.059</b>	<b>1.029</b>	<b>1.000</b>	<b>0.980</b>	<b>0.979</b>
<b>500K Rate</b>	<b>1.121</b>	<b>1.056</b>	<b>1.027</b>	<b>1.000</b>	<b>0.981</b>	<b>0.980</b>
<b>350K Rate</b>	<b>1.114</b>	<b>1.053</b>	<b>1.027</b>	<b>1.000</b>	<b>0.982</b>	<b>0.981</b>
<b>250K Rate</b>	<b>1.104</b>	<b>1.049</b>	<b>1.024</b>	<b>1.000</b>	<b>0.983</b>	<b>0.982</b>
<b>Liabilities</b>	<b>1.105</b>	<b>1.050</b>	<b>1.024</b>	<b>1.000</b>	<b>0.982</b>	<b>0.981</b>

The table includes columns labeled 2.37% and 2.39%. Those were the “risk-free buy-and-hold” interest rates appropriate for discounting the 2019-20 losses and the 6/30/19 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 2019-20 claims yielded an overall interest rate of 2.37%. The portfolio matching the expenditures on the 6/30/19 liabilities yielded an overall interest rate of 2.39%. These are benchmarks that rise and fall with interest rates in general.

# **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 Exhibits 1 and 2 show the estimated liabilities for unpaid losses as of December 31, 2018 and the projection to June 30, 2019. Summary Exhibit 3 shows the projected rate for the 2019-20 program year, which runs from July 1, 2019 to June 30, 2020. These rates include 4850/TD benefits. Summary Exhibit 4 shows the estimated limited unpaid losses as of June 30, 2019 by program year on both discounted and non-discounted bases. The limited unpaid losses exclude 4850. Summary Exhibit 5 shows the ULAE liability at 12/31/18 and 6/30/19.

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

These exhibits show the estimated unpaid limited losses as of June 30, 2019. Fiscal Year End Exhibit 10 shows limited unpaid losses including 4850 benefits. Fiscal Year End Exhibits 3 and 4 show the projected 2019-20 4850 and TD benefits. Fiscal Year End Exhibit 2 shows the calculation that removes 4850 IBNR from the total IBNR liability. Fiscal Year End Exhibit 1 shows the limited unpaid losses excluding 4850.

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

These exhibits show the estimation of the limited ultimate losses for each program year, including 4850 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 2019-20.

### ***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, 2018, 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

Estimated Unpaid Losses as of December 31, 2018  
**Limited Self-Insured Losses Excluding 4850**

(1) Estimated Unpaid Losses:	\$13,729,518
(2) Discounted Value of Unpaid Losses: (Assuming 2.0% Interest Rate)	\$12,419,904

**Probability Levels**

Probability Level (3)	Probability Factor (4)	Discounted * Liability (5)
<b>Central Estimate</b>	<b>1.00</b>	<b>\$12,419,904</b>
60%	1.02	12,668,302
70%	1.06	13,165,099
80%	1.11	13,786,094
90%	1.19	14,779,686

\* Multiply by 1.105 to obtain undiscounted values.

Notes:

- (1) Page 25, Column (6).
- (2) (1), discounted at 2.00% interest.
- (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 Unpaid Losses as of June 30, 2019  
**Limited Self-Insured Losses Excluding 4850**

(1) Projected Unpaid Losses:	\$13,721,278
(2) Discounted Value of Unpaid Losses: (Assuming 2.0% Interest Rate)	\$12,412,450

**Probability Levels**

Probability Level <u>(3)</u>	Probability Factor <u>(4)</u>	Discounted * Liability <u>(5)</u>
<b>Central Estimate</b>	<b>1.00</b>	<b>\$12,412,450</b>
60%	1.03	12,784,824
70%	1.09	13,529,571
80%	1.17	14,522,567
90%	1.29	16,012,061

\* Multiply by 1.105 to obtain undiscounted values.

Notes:

- (1) Page 22, Column (1).
- (2) Page 22, 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 2019-20

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

(1) Discounted Loss Rate: Loss Rates  
(as of July 1, 2019, 2.0% interest rate) \$5.61

<b><u>Probability Levels</u></b>		
Probability Level <u>(2)</u>	Probability Factor <u>(3)</u>	Discounted * Rate <u>(4)</u>
0.20	0.69	\$3.87
0.30	0.78	4.38
0.40	0.87	4.88
0.50	0.96	5.39
<b>Central Estimate</b>	<b>1.00</b>	<b>\$5.61</b>
0.60	1.05	5.89
0.70	1.16	6.51
0.80	1.29	7.24
0.90	1.49	8.36
* Multiply by 1.104 to obtain undiscounted values.		

Notes:

- (1) [Page 60, Column (5)] x [Page 68, 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, 2019 Summary

**Limited Self-Insured Losses Excluding 4850**

Program Year	Undiscounted Claims Liabilities as of 6/30/19 (1)	Discounted (2.0% Interest) Claims Liabilities as of 6/30/19 (2)	Estimated Ultimate Losses (3)
1987-88	\$4,853	\$4,513	\$136,000
1988-89	20,816	19,139	730,000
1989-90	407	370	739,000
1990-91	29,182	26,218	1,280,000
1991-92	166,372	147,735	1,530,000
1992-93	61,317	53,811	1,492,639
1993-94	38,579	34,099	1,158,561
1994-95	178,554	158,578	909,693
1995-96	20,416	18,189	879,518
1996-97	149,758	133,682	1,498,181
1997-98	157,941	141,148	1,192,837
1998-99	131,471	117,559	1,551,420
1999-00	77,030	68,889	1,472,757
2000-01	87,196	77,971	2,633,152
2001-02	158,965	142,102	2,091,203
2002-03	136,574	122,033	2,125,354
2003-04	212,411	189,699	1,993,776
2004-05	234,975	209,739	1,810,688
2005-06	346,074	308,740	1,395,790
2006-07	376,702	335,890	3,047,898
2007-08	332,787	296,815	1,475,596
2008-09	250,364	223,754	1,830,026
2009-10	543,019	488,540	3,320,153
2010-11	473,972	426,149	4,063,618
2011-12	709,788	637,361	2,853,711
2012-13	592,546	537,889	2,845,202
2013-14	668,450	611,000	3,501,847
2014-15	777,676	709,184	2,039,280
2015-16	1,015,676	922,707	2,994,726
2016-17	1,276,514	1,158,764	2,148,957
2017-18	1,958,934	1,782,468	2,654,272
2018-19	2,531,959	2,307,715	2,865,985
Total	\$13,721,278	\$12,412,450	\$62,261,841

## Notes:

- (1) Page 63, Column (1).
- (2) Page 63, Column (3).
- (3) Page 25, 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 12/31/18:	\$26,639,717	\$1,497,441	\$28,137,157
(4) Estimated Unpaid ULAE as of 12/31/18:	\$1,598,383	\$179,693	\$1,778,076
(5) Discounted Unpaid ULAE as of 12/31/18: ( 2.0% interest rate)			\$1,609,159

We project that the ULAE liability will not change between 12/31/18 & 06/30/19.

Notes:

- (1) Estimated by BAC.
- (2) "50-50 Rule."
- (3) From gross ultimates on Page 45 and gross claims data, assuming 90% of IBNR is development on known claims.
- (4) (2) x (3).
- (5) (4) x [Page 63, 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, 2019

**Limited Self-Insured Losses Excluding 4850**

Program Year	Estimated Ultimate Losses (1)	Limited Paid Losses less 4850 Paid 6/30/19 (2)	Limited Case Reserves less 4850 Case 6/30/19 (3)	Lim Reported less 4850 Reported 6/30/19 (4)	Limited IBNR less 4850 IBNR 6/30/19 (5)	Projected Unpaid Losses excluding 4850 6/30/19 (6)
1987-88	\$136,000	\$131,147	\$287	\$131,434	\$4,566	\$4,853
1988-89	730,000	709,184	11,875	721,059	8,941	20,816
1989-90	739,000	738,593	16	738,610	390	407
1990-91	1,280,000	1,250,818	20,510	1,271,328	8,672	29,182
1991-92	1,530,000	1,363,628	132,576	1,496,204	33,796	166,372
1992-93	1,492,639	1,431,322	36,880	1,468,201	24,438	61,317
1993-94	1,158,561	1,119,982	28,945	1,148,928	9,633	38,579
1994-95	909,693	731,139	146,296	877,436	32,257	178,554
1995-96	879,518	859,102	5,156	864,258	15,261	20,416
1996-97	1,498,181	1,348,424	131,139	1,479,563	18,618	149,758
1997-98	1,192,837	1,034,896	138,259	1,173,155	19,682	157,941
1998-99	1,551,420	1,419,949	114,685	1,534,634	16,786	131,471
1999-00	1,472,757	1,395,727	56,265	1,451,992	20,765	77,030
2000-01	2,633,152	2,545,956	33,602	2,579,558	53,594	87,196
2001-02	2,091,203	1,932,238	111,312	2,043,550	47,653	158,965
2002-03	2,125,354	1,988,779	52,987	2,041,766	83,588	136,574
2003-04	1,993,776	1,781,365	72,447	1,853,812	139,964	212,411
2004-05	1,810,688	1,575,713	157,185	1,732,898	77,790	234,975
2005-06	1,395,790	1,049,717	280,689	1,330,406	65,384	346,074
2006-07	3,047,898	2,671,197	219,962	2,891,158	156,740	376,702
2007-08	1,475,596	1,142,809	254,256	1,397,065	78,531	332,787
2008-09	1,830,026	1,579,662	127,165	1,706,827	123,199	250,364
2009-10	3,320,153	2,777,133	228,331	3,005,464	314,688	543,019
2010-11	4,063,618	3,589,646	226,893	3,816,539	247,079	473,972
2011-12	2,853,711	2,143,923	417,611	2,561,534	292,177	709,788
2012-13	2,845,202	2,252,656	360,438	2,613,094	232,107	592,546
2013-14	3,501,847	2,833,396	224,891	3,058,287	443,560	668,450
2014-15	2,039,280	1,261,604	493,733	1,755,337	283,943	777,676
2015-16	2,994,726	1,979,050	544,221	2,523,271	471,455	1,015,676
2016-17	2,148,957	872,442	434,091	1,306,533	842,424	1,276,514
2017-18	2,654,272	695,338	744,707	1,440,045	1,214,227	1,958,934
2018-19	2,865,985	334,026	522,604	856,630	2,009,355	2,531,959
<b>Total</b>	<b>\$62,261,841</b>	<b>\$48,540,563</b>	<b>\$6,330,013</b>	<b>\$54,870,576</b>	<b>\$7,391,265</b>	<b>\$13,721,278</b>

## Notes:

(1) - (6) Page 34 entries - Page 29 entries.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Calculation of 4850 IBNR

Program Year	Total Case Reserves 12/31/18 (1)	4850 Case Reserves 12/31/18 (2)	4850 Case Reserves Percentage (3)	Total IBNR as of 12/31/18 (4)	4850 IBNR as of 12/31/18 (5)	IBNR Net of 4850 as of 12/31/18 (6)
1987-88	\$0	\$0	0.0%	\$5,078	\$0	\$5,078
1988-89	11,884	0	0.0%	9,761	0	9,761
1989-90	0	0	0.0%	421	0	421
1990-91	20,825	0	0.0%	9,255	0	9,255
1991-92	135,164	0	0.0%	35,801	0	35,801
1992-93	41,802	0	0.0%	25,557	0	25,557
1993-94	31,922	0	0.0%	10,361	0	10,361
1994-95	160,766	0	0.0%	34,560	0	34,560
1995-96	6,000	0	0.0%	16,298	0	16,298
1996-97	143,514	0	0.0%	19,832	0	19,832
1997-98	151,162	0	0.0%	20,920	0	20,920
1998-99	125,301	0	0.0%	17,808	0	17,808
1999-00	61,789	0	0.0%	21,995	0	21,995
2000-01	38,088	0	0.0%	56,693	0	56,693
2001-02	120,829	0	0.0%	51,875	0	51,875
2002-03	57,416	0	0.0%	90,901	0	90,901
2003-04	78,524	0	0.0%	152,074	0	152,074
2004-05	170,574	0	0.0%	84,454	0	84,454
2005-06	304,599	0	0.0%	70,935	0	70,935
2006-07	240,271	0	0.0%	169,939	0	169,939
2007-08	280,532	0	0.0%	85,096	0	85,096
2008-09	148,964	0	0.0%	133,426	0	133,426
2009-10	252,653	0	0.0%	340,641	0	340,641
2010-11	250,229	3,154	1.3%	267,327	0	267,327
2011-12	554,114	54,866	9.9%	319,091	0	319,091
2012-13	412,676	0	0.0%	271,540	0	271,540
2013-14	231,532	13,912	6.0%	516,534	0	516,534
2014-15	528,575	4,173	0.8%	320,422	0	320,422
2015-16	593,549	12,544	2.1%	534,646	0	534,646
2016-17	445,859	18,490	4.1%	1,000,361	2,074	998,286
2017-18	661,348	5,233	0.8%	1,533,387	1,820	1,531,567
2018-19	153,205	4,554	3.0%	1,260,559	11,240	1,249,319
<b>Total</b>	<b>\$6,413,662</b>	<b>\$116,927</b>		<b>\$7,487,547</b>	<b>\$15,135</b>	<b>\$7,472,412</b>

## Notes:

- (1) Page 36, Column (3).
- (2) Provided by Aims.
- (3) (2) / (1).
- (4) Page 36, Column (5).
- (5) (2) x 'IBNR to case reserves' ratio.  
Ratio is [(4) / (1)], reduced 70% in 2018-19, 85% in 2017-18, & 95% in 2016-17.  
4850 IBNR is \$0 for all other years.
- (6) (4) - (5).

Monterey Bay Area Self Insurance Authority  
 Workers' Compensation Program

4850 as % of Total Losses

Program Year	Ultimate 4850 (1)	Estimated Ultimate Gross Loss (2)	4850 Percentage (3)
2007-08	\$394,404	\$1,950,000	20.2%
2008-09	529,974	2,380,000	22.3%
2009-10	679,847	6,400,000	10.6%
2010-11	636,382	7,400,000	8.6%
2011-12	446,289	4,000,000	11.2%
2012-13	354,798	4,500,000	7.9%
2013-14	698,153	6,400,000	10.9%
2014-15	160,720	2,900,000	5.5%
2015-16	205,275	4,000,000	5.1%
2016-17	151,043	3,000,000	5.0%
2017-18	45,728	3,600,000	1.3%
Average	\$391,147	\$4,230,000	9.2%
14-15 to 17-18	\$140,691	\$3,375,000	4.2%

Projected 2019-20 4850:	
(4)	\$150,000

(1) Page 32, Column (4).  
 (2) Page 45, Column (6).  
 (3) (1) / (2).  
 (4) Projected by BAC.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

TD as % of Total Losses

Program Year	Ultimate TD (1)	Estimated Ultimate Gross Loss (2)	TD Percentage (3)
2007-08	\$49,814	\$1,950,000	2.6%
2008-09	69,542	2,380,000	2.9%
2009-10	304,478	6,400,000	4.8%
2010-11	571,051	7,400,000	7.7%
2011-12	281,993	4,000,000	7.0%
2012-13	325,457	4,500,000	7.2%
2013-14	669,624	6,400,000	10.5%
2014-15	346,272	2,900,000	11.9%
2015-16	625,354	4,000,000	15.6%
2016-17	268,256	3,000,000	8.9%
2017-18	185,383	3,600,000	5.1%
Average	\$336,111	\$4,230,000	7.9%
14-15 to 17-18	\$356,316	\$3,375,000	10.6%

Projected 2019-20 TD:	
(4)	\$360,000

(1) Page 33, Column (4).  
 (2) Page 45, Column (6).  
 (3) (1) / (2).  
 (4) Projected by BAC.

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Unpaid Losses as of June 30, 2019

**4850 Only**

Program Year	Estimated Ultimate 4850/TD (1)	Projected 4850/TD Paid as of 6/30/19 (2)	Projected 4850/TD Case Reserves as of 6/30/19 (3)	Projected 4850/TD Reported as of 6/30/19 (4)	Projected 4850/TD IBNR as of 6/30/19 (5)	Projected Unpaid Losses excluding 4850/TD 6/30/19 (6)
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	454,646	454,646	0	454,646	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	529,974	529,974	0	529,974	0	0
2009-10	679,847	679,847	0	679,847	0	0
2010-11	636,382	634,806	1,575	636,382	0	1,575
2011-12	446,289	405,276	41,013	446,289	0	41,013
2012-13	354,798	354,798	0	354,798	0	0
2013-14	698,153	685,963	12,190	698,153	0	12,190
2014-15	160,720	157,033	3,687	160,720	0	3,687
2015-16	205,275	196,369	8,905	205,275	0	8,905
2016-17	151,043	136,183	14,860	151,043	0	14,860
2017-18	45,728	40,826	4,902	45,728	0	4,902
2018-19	134,015	74,360	12,149	86,509	47,506	59,655
<b>Total</b>	<b>\$8,393,159</b>	<b>\$8,246,371</b>	<b>\$99,282</b>	<b>\$8,345,653</b>	<b>\$47,506</b>	<b>\$146,788</b>

## Notes:

- (1) Page 32, Column (4).
- (2) Page 30, Column (3).
- (3) (4) - (2).
- (4) Page 30, Column (6).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Paid and Reported Losses between 1/1/19 and 6/30/19  
**4850 Only**

Program Year	Losses Paid as of 12/31/18 <u>(1)</u>	Projected Losses Paid 1/1/19 - 6/30/19 <u>(2)</u>	Projected Losses Paid as of 6/30/19 <u>(3)</u>	Losses Reported as of 12/31/18 <u>(4)</u>	Projected Losses Reported 1/1/19 - 6/30/19 <u>(5)</u>	Projected Losses Reported as of 6/30/19 <u>(6)</u>
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	454,646	0	454,646	454,646	0	454,646
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	0	529,974	529,974	0	529,974
2009-10	679,847	0	679,847	679,847	0	679,847
2010-11	633,227	1,579	634,806	636,382	0	636,382
2011-12	391,423	13,853	405,276	446,289	0	446,289
2012-13	354,798	0	354,798	354,798	0	354,798
2013-14	684,241	1,722	685,963	698,153	0	698,153
2014-15	156,547	486	157,033	160,720	0	160,720
2015-16	192,731	3,638	196,369	205,275	0	205,275
2016-17	132,553	3,631	136,183	151,043	0	151,043
2017-18	40,494	331	40,826	45,728	0	45,728
2018-19	7,690	66,669	74,360	12,244	74,265	86,509
<b>Total</b>	<b>\$8,154,461</b>	<b>\$91,910</b>	<b>\$8,246,371</b>	<b>\$8,271,388</b>	<b>\$74,265</b>	<b>\$8,345,653</b>

## Notes:

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

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Estimated Unpaid Losses as of December 31, 2018

**4850 Only**

Program Year	Estimated Ultimate 4850/TD (1)	4850/TD Paid as of 12/31/18 (2)	4850/TD Case Reserves as of 12/31/18 (3)	4850/TD Reported as of 12/31/18 (4)	4850/TD IBNR as of 12/31/18 (5)	Estimated Unpaid Losses excluding 4850/TD 12/31/18 (6)
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	454,646	454,646	0	454,646	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	529,974	529,974	0	529,974	0	0
2009-10	679,847	679,847	0	679,847	0	0
2010-11	636,382	633,227	3,154	636,382	0	3,154
2011-12	446,289	391,423	54,866	446,289	0	54,866
2012-13	354,798	354,798	0	354,798	0	0
2013-14	698,153	684,241	13,912	698,153	0	13,912
2014-15	160,720	156,547	4,173	160,720	0	4,173
2015-16	205,275	192,731	12,544	205,275	0	12,544
2016-17	151,043	132,553	18,490	151,043	0	18,490
2017-18	45,728	40,494	5,233	45,728	0	5,233
2018-19	67,008	7,690	4,554	12,244	54,763	59,317
<b>Total</b>	<b>\$8,326,152</b>	<b>\$8,154,461</b>	<b>\$116,927</b>	<b>\$8,271,388</b>	<b>\$54,763</b>	<b>\$171,690</b>

Notes:

- (1) Page 32, Column (4). 2018-19 adjusted for incomplete program year.
- (2) Page 30, Column (1).
- (3) (4) - (2).
- (4) Page 30, Column (4).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Paid 4850 Loss Development

Program Year	Cumulative Paid Losses as of 12/31/18 (1)	Paid Development Factor as of 12/31/18 (2)	Projected Ultimate Losses (3)	Selected Ultimate Losses (4)
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	454,646	1.000	454,646	454,646
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	529,974
2009-10	679,847	1.000	679,847	679,847
2010-11	633,227	1.000	633,227	636,382
2011-12	391,423	1.000	391,423	446,289
2012-13	354,798	1.025	363,580	354,798
2013-14	684,241	1.025	701,176	698,153
2014-15	156,547	1.030	161,232	160,720
2015-16	192,731	1.019	196,462	205,275
2016-17	132,553	1.008	133,650	151,043
2017-18	40,494	1.101	44,603	45,728
2018-19	7,690	3.499	26,910	134,015
Total	\$8,154,461		\$8,213,021	\$8,393,159

## Notes:

- (1) Provided by Aims.
- (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

Paid TD Loss Development

Program Year	Cumulative Paid Losses as of 12/31/18 (1)	Paid Development Factor as of 12/31/18 (2)	Projected Ultimate Losses (3)	Selected Ultimate Losses (4)
1987-88	\$50,855	1.000	\$50,855	\$50,855
1988-89	283,506	1.000	283,506	283,506
1989-90	238,006	1.000	238,006	238,006
1990-91	168,259	1.000	168,259	168,259
1991-92	268,489	1.000	268,489	268,489
1992-93	171,461	1.000	171,461	171,461
1993-94	63,926	1.000	63,926	63,926
1994-95	31,068	1.000	31,068	31,068
1995-96	11,580	1.000	11,580	11,580
1996-97	95,869	1.000	95,869	95,869
1997-98	20,370	1.000	20,370	20,370
1998-99	124,288	1.000	124,288	124,288
1999-00	30,385	1.000	30,385	30,385
2000-01	179,470	1.000	179,470	297,774
2001-02	78,920	1.000	78,920	78,920
2002-03	102,049	1.000	102,049	69,541
2003-04	153,993	1.000	153,993	153,993
2004-05	77,378	1.000	77,378	77,378
2005-06	55,431	1.000	55,431	55,431
2006-07	77,765	1.000	77,765	78,793
2007-08	49,814	1.000	49,814	49,814
2008-09	69,542	1.000	69,542	69,542
2009-10	304,478	1.000	304,478	304,478
2010-11	607,765	1.000	607,765	571,051
2011-12	319,083	1.000	319,083	281,993
2012-13	325,457	1.025	333,513	325,457
2013-14	611,671	1.025	626,810	669,624
2014-15	324,587	1.030	334,303	346,272
2015-16	598,633	1.019	610,223	625,354
2016-17	234,912	1.008	236,858	268,256
2017-18	146,363	1.101	161,213	185,383
2018-19	26,911	3.499	94,166	356,316
Total	\$5,902,282		\$6,030,832	\$6,423,431

## Notes:

- (1) Provided by Aims.
- (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, 2019

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

Program Year	Estimated Ultimate Losses (1)	Projected Paid Losses as of 6/30/19 (2)	Projected Case Reserves 6/30/19 (3)	Projected Reported Losses as of 6/30/19 (4)	Projected IBNR as of 6/30/19 (5)	Projected Unpaid Losses as of 6/30/19 (6)
1987-88	\$136,000	\$131,147	\$287	\$131,434	\$4,566	\$4,853
1988-89	730,000	709,184	11,875	721,059	8,941	20,816
1989-90	739,000	738,593	16	738,610	390	407
1990-91	1,280,000	1,250,818	20,510	1,271,328	8,672	29,182
1991-92	1,530,000	1,363,628	132,576	1,496,204	33,796	166,372
1992-93	1,520,000	1,458,683	36,880	1,495,562	24,438	61,317
1993-94	1,210,000	1,171,421	28,945	1,200,366	9,634	38,579
1994-95	1,060,000	881,446	146,296	1,027,743	32,257	178,554
1995-96	1,100,000	1,079,584	5,156	1,084,739	15,261	20,416
1996-97	1,680,000	1,530,242	131,139	1,661,382	18,618	149,758
1997-98	1,390,000	1,232,059	138,259	1,370,318	19,682	157,941
1998-99	1,670,000	1,538,529	114,685	1,653,214	16,786	131,471
1999-00	1,610,000	1,532,970	56,265	1,589,235	20,765	77,030
2000-01	2,950,000	2,862,804	33,602	2,896,406	53,594	87,196
2001-02	2,540,000	2,381,035	111,312	2,492,347	47,653	158,965
2002-03	2,580,000	2,443,426	52,987	2,496,412	83,588	136,574
2003-04	2,320,000	2,107,589	72,447	2,180,036	139,964	212,411
2004-05	2,280,000	2,045,025	157,185	2,202,210	77,790	234,975
2005-06	1,690,000	1,343,926	280,689	1,624,616	65,384	346,074
2006-07	3,610,000	3,233,298	219,962	3,453,260	156,740	376,702
2007-08	1,870,000	1,537,213	254,256	1,791,469	78,531	332,787
2008-09	2,360,000	2,109,636	127,165	2,236,801	123,199	250,364
2009-10	4,000,000	3,456,981	228,331	3,685,312	314,688	543,019
2010-11	4,700,000	4,224,453	228,469	4,452,921	247,079	475,547
2011-12	3,300,000	2,549,200	458,623	3,007,823	292,177	750,800
2012-13	3,200,000	2,607,454	360,438	2,967,893	232,107	592,546
2013-14	4,200,000	3,519,359	237,081	3,756,440	443,560	680,641
2014-15	2,200,000	1,418,637	497,420	1,916,057	283,943	781,363
2015-16	3,200,000	2,175,419	553,126	2,728,545	471,455	1,024,581
2016-17	2,300,000	1,008,626	448,950	1,457,576	842,424	1,291,374
2017-18	2,700,000	736,164	749,609	1,485,773	1,214,227	1,963,836
2018-19	3,000,000	408,386	534,754	943,139	2,056,861	2,591,614
<b>Total</b>	<b>\$70,655,000</b>	<b>\$56,786,934</b>	<b>\$6,429,295</b>	<b>\$63,216,229</b>	<b>\$7,438,771</b>	<b>\$13,868,066</b>

## Notes:

- (1) Page 38, Column (6).
- (2) Page 35, Column (3).
- (3) (4) - (2).
- (4) Page 35, Column (6).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Projected Paid and Reported Losses between 1/1/19 and 6/30/19

**Limited Self-Insured Losses Including 4850**

Program Year	Losses Paid as of 12/31/18 (1)	Projected Losses Paid 1/1/19 - 6/30/19 (2)	Projected Losses Paid as of 6/30/19 (3)	Losses Reported as of 12/31/18 (4)	Projected Losses Reported 1/1/19 - 6/30/19 (5)	Projected Losses Reported as of 6/30/19 (6)
1987-88	\$130,922	\$225	\$131,147	\$130,922	\$512	\$131,434
1988-89	708,356	828	709,184	720,239	820	721,059
1989-90	738,579	14	738,593	738,579	30	738,610
1990-91	1,249,920	898	1,250,818	1,270,745	583	1,271,328
1991-92	1,359,035	4,593	1,363,628	1,494,199	2,005	1,496,204
1992-93	1,452,641	6,042	1,458,683	1,494,443	1,119	1,495,562
1993-94	1,167,717	3,704	1,171,421	1,199,639	727	1,200,366
1994-95	864,675	16,772	881,446	1,025,440	2,302	1,027,743
1995-96	1,077,702	1,882	1,079,584	1,083,702	1,038	1,084,739
1996-97	1,516,653	13,589	1,530,242	1,660,168	1,214	1,661,382
1997-98	1,217,919	14,140	1,232,059	1,369,080	1,238	1,370,318
1998-99	1,526,891	11,638	1,538,529	1,652,192	1,022	1,653,214
1999-00	1,526,216	6,754	1,532,970	1,588,005	1,230	1,589,235
2000-01	2,855,219	7,585	2,862,804	2,893,307	3,099	2,896,406
2001-02	2,367,296	13,739	2,381,035	2,488,125	4,222	2,492,347
2002-03	2,431,683	11,742	2,443,426	2,489,099	7,313	2,496,412
2003-04	2,089,403	18,186	2,107,589	2,167,926	12,110	2,180,036
2004-05	2,024,972	20,053	2,045,025	2,195,546	6,664	2,202,210
2005-06	1,314,466	29,460	1,343,926	1,619,065	5,551	1,624,616
2006-07	3,199,790	33,508	3,233,298	3,440,061	13,199	3,453,260
2007-08	1,504,373	32,840	1,537,213	1,784,904	6,564	1,791,469
2008-09	2,077,611	32,025	2,109,636	2,226,574	10,227	2,236,801
2009-10	3,406,706	50,274	3,456,981	3,659,359	25,952	3,685,312
2010-11	4,182,444	42,008	4,224,453	4,432,673	20,248	4,452,921
2011-12	2,426,795	122,404	2,549,200	2,980,909	26,914	3,007,823
2012-13	2,515,784	91,670	2,607,454	2,928,460	39,432	2,967,893
2013-14	3,451,935	67,425	3,519,359	3,683,466	72,974	3,756,440
2014-15	1,351,004	67,633	1,418,637	1,879,578	36,479	1,916,057
2015-16	2,071,806	103,613	2,175,419	2,665,354	63,191	2,728,545
2016-17	853,780	154,846	1,008,626	1,299,639	157,937	1,457,576
2017-18	505,265	230,899	736,164	1,166,613	319,160	1,485,773
2018-19	86,236	322,150	408,386	239,441	703,698	943,139
<b>Total</b>	<b>\$55,253,791</b>	<b>\$1,533,143</b>	<b>\$56,786,934</b>	<b>\$61,667,453</b>	<b>\$1,548,776</b>	<b>\$63,216,229</b>

## Notes:

- (1) Page 40, Column (1).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 39, 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, 2018

**Limited Self-Insured Losses Including 4850**

Program Year	Estimated Ultimate Losses (1)	Paid Losses as of 12/31/18 (2)	Case Reserves 12/31/18 (3)	Reported Losses as of 12/31/18 (4)	Estimated IBNR as of 12/31/18 (5)	Estimated Unpaid Losses as of 12/31/18 (6)
1987-88	\$136,000	\$130,922	\$0	\$130,922	\$5,078	\$5,078
1988-89	730,000	708,356	11,884	720,239	9,761	21,644
1989-90	739,000	738,579	0	738,579	421	421
1990-91	1,280,000	1,249,920	20,825	1,270,745	9,255	30,080
1991-92	1,530,000	1,359,035	135,164	1,494,199	35,801	170,965
1992-93	1,520,000	1,452,641	41,802	1,494,443	25,557	67,359
1993-94	1,210,000	1,167,717	31,922	1,199,639	10,361	42,283
1994-95	1,060,000	864,675	160,766	1,025,440	34,560	195,325
1995-96	1,100,000	1,077,702	6,000	1,083,702	16,298	22,298
1996-97	1,680,000	1,516,653	143,514	1,660,168	19,832	163,347
1997-98	1,390,000	1,217,919	151,162	1,369,080	20,920	172,081
1998-99	1,670,000	1,526,891	125,301	1,652,192	17,808	143,109
1999-00	1,610,000	1,526,216	61,789	1,588,005	21,995	83,784
2000-01	2,950,000	2,855,219	38,088	2,893,307	56,693	94,781
2001-02	2,540,000	2,367,296	120,829	2,488,125	51,875	172,704
2002-03	2,580,000	2,431,683	57,416	2,489,099	90,901	148,317
2003-04	2,320,000	2,089,403	78,524	2,167,926	152,074	230,597
2004-05	2,280,000	2,024,972	170,574	2,195,546	84,454	255,028
2005-06	1,690,000	1,314,466	304,599	1,619,065	70,935	375,534
2006-07	3,610,000	3,199,790	240,271	3,440,061	169,939	410,210
2007-08	1,870,000	1,504,373	280,532	1,784,904	85,096	365,627
2008-09	2,360,000	2,077,611	148,964	2,226,574	133,426	282,390
2009-10	4,000,000	3,406,706	252,653	3,659,359	340,641	593,294
2010-11	4,700,000	4,182,444	250,229	4,432,673	267,327	517,556
2011-12	3,300,000	2,426,795	554,114	2,980,909	319,091	873,205
2012-13	3,200,000	2,515,784	412,676	2,928,460	271,540	684,216
2013-14	4,200,000	3,451,935	231,532	3,683,466	516,534	748,065
2014-15	2,200,000	1,351,004	528,575	1,879,578	320,422	848,997
2015-16	3,200,000	2,071,806	593,549	2,665,354	534,646	1,128,194
2016-17	2,300,000	853,780	445,859	1,299,639	1,000,361	1,446,220
2017-18	2,700,000	505,265	661,348	1,166,613	1,533,387	2,194,735
2018-19	1,500,000	86,236	153,205	239,441	1,260,559	1,413,764
<b>Total</b>	<b>\$69,155,000</b>	<b>\$55,253,791</b>	<b>\$6,413,662</b>	<b>\$61,667,453</b>	<b>\$7,487,547</b>	<b>\$13,901,209</b>

## Notes:

- (1) Page 38, Column (6).  
2018-19 value adjusted for 6 month exposure through 12/31/18.
- (2) Page 40, Column (1).
- (3) (4) - (2).
- (4) Page 39, 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**

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)
1987-88	\$131,335	\$132,063	\$130,922	\$131,283	\$132,005	\$136,000
1988-89	723,322	715,809	728,474	722,765	714,671	730,000
1989-90	742,718	747,606	738,579	742,462	746,346	739,000
1990-91	1,278,292	1,280,203	1,277,680	1,278,503	1,280,954	1,280,000
1991-92	1,501,242	1,375,219	1,583,813	1,500,736	1,374,723	1,530,000
1992-93	1,502,309	1,469,592	1,529,181	1,502,164	1,471,172	1,520,000
1993-94	1,207,209	1,189,433	1,216,334	1,205,929	1,186,587	1,210,000
1994-95	1,032,975	885,467	1,097,945	1,031,821	885,643	1,060,000
1995-96	1,092,206	1,104,623	1,086,516	1,096,236	1,115,305	1,100,000
1996-97	1,674,993	1,557,949	1,732,069	1,674,317	1,559,099	1,680,000
1997-98	1,383,327	1,251,398	1,463,707	1,386,901	1,266,035	1,390,000
1998-99	1,671,602	1,568,329	1,750,428	1,669,108	1,563,541	1,670,000
1999-00	1,608,802	1,574,881	1,632,431	1,612,289	1,584,125	1,610,000
2000-01	2,934,400	2,960,980	2,917,874	2,951,910	3,005,912	2,950,000
2001-02	2,537,545	2,498,828	2,559,052	2,533,998	2,495,256	2,540,000
2002-03	2,569,277	2,647,971	2,524,582	2,560,401	2,620,289	2,580,000
2003-04	2,312,087	2,406,726	2,238,362	2,311,766	2,395,643	2,320,000
2004-05	2,277,741	2,261,498	2,285,439	2,276,758	2,261,840	2,280,000
2005-06	1,684,495	1,490,125	1,768,623	1,678,594	1,494,579	1,690,000
2006-07	3,591,176	3,696,124	3,549,625	3,591,411	3,682,667	3,610,000
2007-08	1,874,959	1,771,152	1,916,193	1,864,464	1,754,657	1,870,000
2008-09	2,361,223	2,515,196	2,299,268	2,341,321	2,427,892	2,360,000
2009-10	3,962,881	4,260,358	3,815,751	3,904,159	4,042,549	4,000,000
2010-11	4,692,719	5,007,018	4,559,539	4,574,133	4,606,823	4,700,000
2011-12	3,208,761	2,964,148	3,337,758	3,161,979	2,888,395	3,300,000
2012-13	3,227,581	3,284,900	3,198,763	3,158,520	3,094,646	3,200,000
2013-14	4,196,829	4,943,250	3,841,371	3,980,017	4,186,021	4,200,000
2014-15	2,118,958	2,074,311	2,132,765	2,148,961	2,182,992	2,200,000
2015-16	3,224,846	3,580,353	3,080,838	3,102,378	3,135,314	3,200,000
2016-17	1,838,685	2,552,742	1,650,530	2,102,297	2,678,251	2,300,000
2017-18	2,489,438	2,568,032	2,458,887	2,727,674	2,865,966	2,700,000
2018-19	2,304,933	3,216,048	2,020,913	2,986,714	3,069,603	3,000,000
<b>Total</b>	<b>\$68,958,866</b>	<b>\$71,552,332</b>	<b>\$68,124,213</b>	<b>\$69,511,970</b>	<b>\$69,769,498</b>	<b>\$70,655,000</b>

- (1) Page 39, Column (3).
- (2) Page 40, Column (3).
- (3) Page 41, Column (6).
- (4) Page 42, Column (6).
- (5) Page 43, 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**

Program Year	Cumulative	Reported	Projected
	Reported	Development	
	Losses as of	Factor	Ultimate
	12/31/18	as of	Losses
	(1)	12/31/18	(3)
		(2)	
1987-88	\$130,922	1.003	\$131,335
1988-89	720,239	1.004	723,322
1989-90	738,579	1.006	742,718
1990-91	1,270,745	1.006	1,278,292
1991-92	1,494,199	1.005	1,501,242
1992-93	1,494,443	1.005	1,502,309
1993-94	1,199,639	1.006	1,207,209
1994-95	1,025,440	1.007	1,032,975
1995-96	1,083,702	1.008	1,092,206
1996-97	1,660,168	1.009	1,674,993
1997-98	1,369,080	1.010	1,383,327
1998-99	1,652,192	1.012	1,671,602
1999-00	1,588,005	1.013	1,608,802
2000-01	2,893,307	1.014	2,934,400
2001-02	2,488,125	1.020	2,537,545
2002-03	2,489,099	1.032	2,569,277
2003-04	2,167,926	1.066	2,312,087
2004-05	2,195,546	1.037	2,277,741
2005-06	1,619,065	1.040	1,684,495
2006-07	3,440,061	1.044	3,591,176
2007-08	1,784,904	1.050	1,874,959
2008-09	2,226,574	1.060	2,361,223
2009-10	3,659,359	1.083	3,962,881
2010-11	4,432,673	1.059	4,692,719
2011-12	2,980,909	1.076	3,208,761
2012-13	2,928,460	1.102	3,227,581
2013-14	3,683,466	1.139	4,196,829
2014-15	1,879,578	1.127	2,118,958
2015-16	2,665,354	1.210	3,224,846
2016-17	1,299,639	1.415	1,838,685
2017-18	1,166,613	2.134	2,489,438
2018-19	239,441	9.626	2,304,933
Total	\$61,667,453		\$68,958,866

Notes:

- (1) Provided by Aims.
- (2) Page 46, 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**

Program Year	Cumulative Paid Losses as of 12/31/18 (1)	Paid Development Factor as of 12/31/18 (2)	Projected Ultimate Losses (3)
1987-88	\$130,922	1.009	\$132,063
1988-89	708,356	1.011	715,809
1989-90	738,579	1.012	747,606
1990-91	1,249,920	1.024	1,280,203
1991-92	1,359,035	1.012	1,375,219
1992-93	1,452,641	1.012	1,469,592
1993-94	1,167,717	1.019	1,189,433
1994-95	864,675	1.024	885,467
1995-96	1,077,702	1.025	1,104,623
1996-97	1,516,653	1.027	1,557,949
1997-98	1,217,919	1.027	1,251,398
1998-99	1,526,891	1.027	1,568,329
1999-00	1,526,216	1.032	1,574,881
2000-01	2,855,219	1.037	2,960,980
2001-02	2,367,296	1.056	2,498,828
2002-03	2,431,683	1.089	2,647,971
2003-04	2,089,403	1.152	2,406,726
2004-05	2,024,972	1.117	2,261,498
2005-06	1,314,466	1.134	1,490,125
2006-07	3,199,790	1.155	3,696,124
2007-08	1,504,373	1.177	1,771,152
2008-09	2,077,611	1.211	2,515,196
2009-10	3,406,706	1.251	4,260,358
2010-11	4,182,444	1.197	5,007,018
2011-12	2,426,795	1.221	2,964,148
2012-13	2,515,784	1.306	3,284,900
2013-14	3,451,935	1.432	4,943,250
2014-15	1,351,004	1.535	2,074,311
2015-16	2,071,806	1.728	3,580,353
2016-17	853,780	2.990	2,552,742
2017-18	505,265	5.083	2,568,032
2018-19	86,236	37.294	3,216,048
Total	\$55,253,791		\$71,552,332

Notes:

- (1) Provided by Aims.
- (2) Page 47, 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**

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)
1987-88	1.003	1.009	0.572	\$0	\$0	\$130,922
1988-89	1.004	1.011	0.693	11,884	8,235	728,474
1989-90	1.006	1.012	0.857	0	0	738,579
1990-91	1.006	1.024	0.333	20,825	6,935	1,277,680
1991-92	1.005	1.012	0.663	135,164	89,614	1,583,813
1992-93	1.005	1.012	0.831	41,802	34,738	1,529,181
1993-94	1.006	1.019	0.523	31,922	16,695	1,216,334
1994-95	1.007	1.024	0.451	160,766	72,505	1,097,945
1995-96	1.008	1.025	0.469	6,000	2,814	1,086,516
1996-97	1.009	1.027	0.501	143,514	71,901	1,732,069
1997-98	1.010	1.027	0.626	151,162	94,627	1,463,707
1998-99	1.012	1.027	0.784	125,301	98,236	1,750,428
1999-00	1.013	1.032	0.719	61,789	44,426	1,632,431
2000-01	1.014	1.037	0.645	38,088	24,567	2,917,874
2001-02	1.020	1.056	0.587	120,829	70,927	2,559,052
2002-03	1.032	1.089	0.618	57,416	35,483	2,524,582
2003-04	1.066	1.152	0.897	78,524	70,436	2,238,362
2004-05	1.037	1.117	0.527	170,574	89,893	2,285,439
2005-06	1.040	1.134	0.491	304,599	149,558	1,768,623
2006-07	1.044	1.155	0.456	240,271	109,564	3,549,625
2007-08	1.050	1.177	0.468	280,532	131,289	1,916,193
2008-09	1.060	1.211	0.488	148,964	72,694	2,299,268
2009-10	1.083	1.251	0.619	252,653	156,392	3,815,751
2010-11	1.059	1.197	0.507	250,229	126,866	4,559,539
2011-12	1.076	1.221	0.644	554,114	356,849	3,337,758
2012-13	1.102	1.306	0.655	412,676	270,303	3,198,763
2013-14	1.139	1.432	0.682	231,532	157,905	3,841,371
2014-15	1.127	1.535	0.479	528,575	253,187	2,132,765
2015-16	1.210	1.728	0.700	593,549	415,484	3,080,838
2016-17	1.415	2.990	0.787	445,859	350,891	1,650,530
2017-18	2.134	5.083	1.954	661,348	1,292,274	2,458,887
2018-19	9.626	37.294	11.628	153,205	1,781,472	2,020,913
Total				\$6,413,662	\$6,456,760	\$68,124,213

Notes:

- (1) Page 39, Column (2).
- (2) Page 40, Column (2).
- (3)  $[(1) - 1.000] \times (2) / [(2) - (1)]$ .
- (4)  $[\text{Page 39, Column (1)}] - [\text{Page 40, Column (1)}]$ .
- (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  
**Limited Self-Insured Losses Including 4850**

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 12/31/18 (5)	Estimated Ultimate Losses (6)
1987-88	\$120,299	1.003	0.3%	\$361	\$130,922	\$131,283
1988-89	631,467	1.004	0.4%	2,526	720,239	722,765
1989-90	647,238	1.006	0.6%	3,883	738,579	742,462
1990-91	1,293,077	1.006	0.6%	7,758	1,270,745	1,278,503
1991-92	1,307,305	1.005	0.5%	6,537	1,494,199	1,500,736
1992-93	1,544,252	1.005	0.5%	7,721	1,494,443	1,502,164
1993-94	1,048,356	1.006	0.6%	6,290	1,199,639	1,205,929
1994-95	911,634	1.007	0.7%	6,381	1,025,440	1,031,821
1995-96	1,566,792	1.008	0.8%	12,534	1,083,702	1,096,236
1996-97	1,572,079	1.009	0.9%	14,149	1,660,168	1,674,317
1997-98	1,782,065	1.010	1.0%	17,821	1,369,080	1,386,901
1998-99	1,409,629	1.012	1.2%	16,916	1,652,192	1,669,108
1999-00	1,868,036	1.013	1.3%	24,284	1,588,005	1,612,289
2000-01	4,185,913	1.014	1.4%	58,603	2,893,307	2,951,910
2001-02	2,414,342	1.020	1.9%	45,873	2,488,125	2,533,998
2002-03	2,300,073	1.032	3.1%	71,302	2,489,099	2,560,401
2003-04	2,320,000	1.066	6.2%	143,840	2,167,926	2,311,766
2004-05	2,255,889	1.037	3.6%	81,212	2,195,546	2,276,758
2005-06	1,526,383	1.040	3.9%	59,529	1,619,065	1,678,594
2006-07	3,603,560	1.044	4.2%	151,350	3,440,061	3,591,411
2007-08	1,657,509	1.050	4.8%	79,560	1,784,904	1,864,464
2008-09	2,013,108	1.060	5.7%	114,747	2,226,574	2,341,321
2009-10	3,179,216	1.083	7.7%	244,800	3,659,359	3,904,159
2010-11	2,571,995	1.059	5.5%	141,460	4,432,673	4,574,133
2011-12	2,550,275	1.076	7.1%	181,070	2,980,909	3,161,979
2012-13	2,473,767	1.102	9.3%	230,060	2,928,460	3,158,520
2013-14	2,430,747	1.139	12.2%	296,551	3,683,466	3,980,017
2014-15	2,383,920	1.127	11.3%	269,383	1,879,578	2,148,961
2015-16	2,526,148	1.210	17.3%	437,024	2,665,354	3,102,378
2016-17	2,739,446	1.415	29.3%	802,658	1,299,639	2,102,297
2017-18	2,939,852	2.134	53.1%	1,561,061	1,166,613	2,727,674
2018-19	3,066,153	9.626	89.6%	2,747,273	239,441	2,986,714
Total	\$64,840,527			\$7,844,517	\$61,667,453	\$69,511,970

Notes:

- (1) Page 50, Column (4), or Page 45, Column (6), adjusted for SIR.
- (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

Bornhuetter-Ferguson Using Paid Losses  
Limited Self-Insured Losses Including 4850

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 12/31/18 (5)	Estimated Ultimate Losses (6)
1987-88	\$120,299	1.009	0.9%	\$1,083	\$130,922	\$132,005
1988-89	631,467	1.011	1.0%	6,315	708,356	714,671
1989-90	647,238	1.012	1.2%	7,767	738,579	746,346
1990-91	1,293,077	1.024	2.4%	31,034	1,249,920	1,280,954
1991-92	1,307,305	1.012	1.2%	15,688	1,359,035	1,374,723
1992-93	1,544,252	1.012	1.2%	18,531	1,452,641	1,471,172
1993-94	1,048,356	1.019	1.8%	18,870	1,167,717	1,186,587
1994-95	911,634	1.024	2.3%	20,968	864,675	885,643
1995-96	1,566,792	1.025	2.4%	37,603	1,077,702	1,115,305
1996-97	1,572,079	1.027	2.7%	42,446	1,516,653	1,559,099
1997-98	1,782,065	1.027	2.7%	48,116	1,217,919	1,266,035
1998-99	1,409,629	1.027	2.6%	36,650	1,526,891	1,563,541
1999-00	1,868,036	1.032	3.1%	57,909	1,526,216	1,584,125
2000-01	4,185,913	1.037	3.6%	150,693	2,855,219	3,005,912
2001-02	2,414,342	1.056	5.3%	127,960	2,367,296	2,495,256
2002-03	2,300,073	1.089	8.2%	188,606	2,431,683	2,620,289
2003-04	2,320,000	1.152	13.2%	306,240	2,089,403	2,395,643
2004-05	2,255,889	1.117	10.5%	236,868	2,024,972	2,261,840
2005-06	1,526,383	1.134	11.8%	180,113	1,314,466	1,494,579
2006-07	3,603,560	1.155	13.4%	482,877	3,199,790	3,682,667
2007-08	1,657,509	1.177	15.1%	250,284	1,504,373	1,754,657
2008-09	2,013,108	1.211	17.4%	350,281	2,077,611	2,427,892
2009-10	3,179,216	1.251	20.0%	635,843	3,406,706	4,042,549
2010-11	2,571,995	1.197	16.5%	424,379	4,182,444	4,606,823
2011-12	2,550,275	1.221	18.1%	461,600	2,426,795	2,888,395
2012-13	2,473,767	1.306	23.4%	578,862	2,515,784	3,094,646
2013-14	2,430,747	1.432	30.2%	734,086	3,451,935	4,186,021
2014-15	2,383,920	1.535	34.9%	831,988	1,351,004	2,182,992
2015-16	2,526,148	1.728	42.1%	1,063,508	2,071,806	3,135,314
2016-17	2,739,446	2.990	66.6%	1,824,471	853,780	2,678,251
2017-18	2,939,852	5.083	80.3%	2,360,701	505,265	2,865,966
2018-19	3,066,153	37.294	97.3%	2,983,367	86,236	3,069,603
Total	\$64,840,527			\$14,515,707	\$55,253,791	\$69,769,498

Notes:

- (1) Page 42, Column (1).
- (2) Page 40, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 40, 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)
1987-88	\$131,601	\$133,650	\$130,922			\$138,000
1988-89	726,745	727,974	726,145			730,000
1989-90	762,432	777,628	751,039			754,000
1990-91	1,462,425	1,408,451	1,516,073			1,470,000
1991-92	1,547,115	1,415,822	1,679,683			1,550,000
1992-93	1,848,105	1,813,245	1,885,942			1,850,000
1993-94	1,231,894	1,225,997	1,238,776			1,240,000
1994-95	1,056,206	912,525	1,226,397			1,070,000
1995-96	1,648,669	1,254,909	2,055,371			1,860,000
1996-97	1,850,129	1,765,319	1,929,558			1,890,000
1997-98	2,158,074	1,518,373	2,820,491			2,170,000
1998-99	1,740,975	1,674,926	1,815,523			1,740,000
1999-00	2,342,506	2,379,034	2,300,954			2,340,000
2000-01	5,308,036	5,005,400	5,643,351			5,320,000
2001-02	2,979,072	2,691,200	3,261,587			2,980,000
2002-03	2,647,974	2,763,829	2,546,342			2,650,000
2003-04	2,312,087	2,406,726	2,238,362			2,320,000
2004-05	2,558,771	2,373,630	2,682,630			2,620,000
2005-06	1,735,366	1,568,155	1,834,416			1,780,000
2006-07	4,225,749	4,243,020	4,216,763			4,220,000
2007-08	1,933,787	1,874,207	1,964,444			1,950,000
2008-09	2,441,263	2,671,944	2,323,996			2,380,000
2009-10	6,417,140	6,739,110	6,222,685	\$6,118,217	\$3,496,721	6,400,000
2010-11	7,457,851	7,126,821	7,646,156	7,010,419	5,520,353	7,400,000
2011-12	3,911,462	3,524,596	4,174,280	3,884,377	4,579,383	4,000,000
2012-13	4,498,934	4,354,808	4,585,894	4,361,943	3,763,877	4,500,000
2013-14	6,400,323	5,716,712	6,795,586	5,933,552	4,014,802	6,400,000
2014-15	2,764,616	2,289,496	2,934,831	2,900,828	2,505,675	2,900,000
2015-16	4,028,971	4,219,492	3,940,878	4,023,625	4,605,772	4,000,000
2016-17	1,985,143	2,856,594	1,732,568	2,823,412	4,103,969	3,000,000
2017-18	2,817,688	2,726,988	2,855,600	3,944,461	3,772,055	3,600,000
2018-19	2,611,342	3,597,521	2,294,231	4,871,738	5,708,400	4,900,000
Total	\$87,542,451	\$85,758,102	\$89,971,473			\$92,122,000
09/10-18/19	\$42,893,470	\$43,152,138	\$43,182,709	\$45,872,572	\$42,071,007	\$47,100,000

(1) Page 46, Column (3).

(2) Page 47, Column (3).

(3) Page 48, Column (6).

(4) Page 49, Column (6).

(5) Page 53, 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 12/31/18 (1)	Reported Development Factor as of 12/31/18 (2)	Projected Ultimate Losses (3)
1987-88	\$130,922	1.005	\$131,601
1988-89	720,239	1.009	726,745
1989-90	751,039	1.015	762,432
1990-91	1,434,898	1.019	1,462,425
1991-92	1,515,296	1.021	1,547,115
1992-93	1,805,764	1.023	1,848,105
1993-94	1,199,639	1.027	1,231,894
1994-95	1,025,440	1.030	1,056,206
1995-96	1,597,481	1.032	1,648,669
1996-97	1,785,039	1.036	1,850,129
1997-98	2,070,113	1.042	2,158,074
1998-99	1,661,278	1.048	1,740,975
1999-00	2,223,595	1.053	2,342,506
2000-01	5,017,074	1.058	5,308,036
2001-02	2,806,929	1.061	2,979,072
2002-03	2,489,099	1.064	2,647,974
2003-04	2,167,926	1.066	2,312,087
2004-05	2,393,614	1.069	2,558,771
2005-06	1,619,065	1.072	1,735,366
2006-07	3,929,822	1.075	4,225,749
2007-08	1,784,904	1.083	1,933,787
2008-09	2,226,574	1.096	2,441,263
2009-10	5,691,259	1.128	6,417,140
2010-11	6,556,870	1.137	7,457,851
2011-12	3,349,174	1.168	3,911,462
2012-13	3,810,350	1.181	4,498,934
2013-14	5,318,183	1.203	6,400,323
2014-15	2,352,858	1.175	2,764,616
2015-16	3,144,956	1.281	4,028,971
2016-17	1,299,639	1.527	1,985,143
2017-18	1,229,113	2.292	2,817,688
2018-19	239,441	10.906	2,611,342
Total	\$75,347,592		\$87,542,451

## Notes:

- (1) Provided by Aims.
- (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 12/31/18 <u>(1)</u>	Paid Development Factor as of 12/31/18 <u>(2)</u>	Projected Ultimate Losses <u>(3)</u>
1987-88	\$130,922	1.021	\$133,650
1988-89	708,356	1.028	727,974
1989-90	751,039	1.035	777,628
1990-91	1,356,240	1.038	1,408,451
1991-92	1,359,035	1.042	1,415,822
1992-93	1,735,060	1.045	1,813,245
1993-94	1,167,717	1.050	1,225,997
1994-95	864,675	1.055	912,525
1995-96	1,180,459	1.063	1,254,909
1996-97	1,641,525	1.075	1,765,319
1997-98	1,401,326	1.084	1,518,373
1998-99	1,535,977	1.090	1,674,926
1999-00	2,161,806	1.100	2,379,034
2000-01	4,507,905	1.110	5,005,400
2001-02	2,394,727	1.124	2,691,200
2002-03	2,431,683	1.137	2,763,829
2003-04	2,089,403	1.152	2,406,726
2004-05	2,024,972	1.172	2,373,630
2005-06	1,314,466	1.193	1,568,155
2006-07	3,479,366	1.219	4,243,020
2007-08	1,504,373	1.246	1,874,207
2008-09	2,077,611	1.286	2,671,944
2009-10	5,034,366	1.339	6,739,110
2010-11	5,165,700	1.380	7,126,821
2011-12	2,490,583	1.415	3,524,596
2012-13	2,944,788	1.479	4,354,808
2013-14	3,674,798	1.556	5,716,712
2014-15	1,376,394	1.663	2,289,496
2015-16	2,234,290	1.889	4,219,492
2016-17	853,780	3.346	2,856,594
2017-18	505,265	5.397	2,726,988
2018-19	86,236	41.717	3,597,521
Total	\$62,184,843		\$85,758,102

## Notes:

- (1) Provided by Aims.
- (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 12/31/18 (1)	Paid Development Factor as of 12/31/18 (2)	IBNR to Case Reserves Ratio (3)	Case Reserves 12/31/18 (4)	Estimated IBNR Losses as of 12/31/18 (5)	Estimated Ultimate Losses (6)
1987-88	1.005	1.021	0.338	\$0	\$0	\$130,922
1988-89	1.009	1.028	0.497	11,884	5,906	726,145
1989-90	1.015	1.035	0.776	0	0	751,039
1990-91	1.019	1.038	1.032	78,658	81,175	1,516,073
1991-92	1.021	1.042	1.052	156,261	164,387	1,679,683
1992-93	1.023	1.045	1.134	70,704	80,178	1,885,942
1993-94	1.027	1.050	1.226	31,922	39,137	1,238,776
1994-95	1.030	1.055	1.250	160,766	200,957	1,226,397
1995-96	1.032	1.063	1.098	417,022	457,890	2,055,371
1996-97	1.036	1.075	1.007	143,514	144,519	1,929,558
1997-98	1.042	1.084	1.122	668,786	750,378	2,820,491
1998-99	1.048	1.090	1.231	125,301	154,245	1,815,523
1999-00	1.053	1.100	1.252	61,789	77,359	2,300,954
2000-01	1.058	1.110	1.230	509,168	626,277	5,643,351
2001-02	1.061	1.124	1.103	412,201	454,658	3,261,587
2002-03	1.064	1.137	0.997	57,416	57,243	2,546,342
2003-04	1.066	1.152	0.897	78,524	70,436	2,238,362
2004-05	1.069	1.172	0.784	368,642	289,016	2,682,630
2005-06	1.072	1.193	0.707	304,599	215,351	1,834,416
2006-07	1.075	1.219	0.637	450,456	286,941	4,216,763
2007-08	1.083	1.246	0.640	280,532	179,540	1,964,444
2008-09	1.096	1.286	0.654	148,964	97,422	2,323,996
2009-10	1.128	1.339	0.809	656,892	531,426	6,222,685
2010-11	1.137	1.380	0.783	1,391,169	1,089,286	7,646,156
2011-12	1.168	1.415	0.961	858,591	825,106	4,174,280
2012-13	1.181	1.479	0.896	865,562	775,544	4,585,894
2013-14	1.203	1.556	0.899	1,643,385	1,477,403	6,795,586
2014-15	1.175	1.663	0.596	976,464	581,973	2,934,831
2015-16	1.281	1.889	0.874	910,666	795,922	3,940,878
2016-17	1.527	3.346	0.971	445,859	432,929	1,732,568
2017-18	2.292	5.397	2.247	723,848	1,626,487	2,855,600
2018-19	10.906	41.717	13.412	153,205	2,054,790	2,294,231
Total				\$13,162,750	\$14,623,881	\$89,971,473

## Notes:

- (1) Page 46, Column (2).
- (2) Page 47, Column (2).
- (3)  $[(1) - 1.000] \times (2) / [(2) - (1)]$ .
- (4) Page 46, Column (1) - Page 47, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 46, 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 12/31/18 (5)	Estimated Ultimate Losses (6)
2009-10	\$3,778,393	1.128	11.3%	\$426,958	\$5,691,259	\$6,118,217
2010-11	3,748,338	1.137	12.1%	453,549	6,556,870	7,010,419
2011-12	3,716,685	1.168	14.4%	535,203	3,349,174	3,884,377
2012-13	3,605,185	1.181	15.3%	551,593	3,810,350	4,361,943
2013-14	3,641,236	1.203	16.9%	615,369	5,318,183	5,933,552
2014-15	3,677,649	1.175	14.9%	547,970	2,352,858	2,900,828
2015-16	4,012,185	1.281	21.9%	878,669	3,144,956	4,023,625
2016-17	4,416,734	1.527	34.5%	1,523,773	1,299,639	2,823,412
2017-18	4,814,446	2.292	56.4%	2,715,348	1,229,113	3,944,461
2018-19	5,101,649	10.906	90.8%	4,632,297	239,441	4,871,738
	\$40,512,500			\$12,880,729	\$32,991,843	\$45,872,572

## Notes:

- (1) Page 50, Column (4).
- (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  
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)
2009-10	\$8.79	0.704	\$610,584	\$3,778,393
2010-11	8.79	0.720	592,267	3,748,338
2011-12	8.79	0.736	574,499	3,716,685
2012-13	8.79	0.736	557,264	3,605,185
2013-14	8.79	0.736	562,836	3,641,236
2014-15	8.79	0.736	568,465	3,677,649
2015-16	8.79	0.795	574,149	4,012,185
2016-17	8.79	0.858	585,632	4,416,734
2017-18	8.79	0.926	591,489	4,814,446
2018-19	8.79	0.962	603,319	5,101,649
Total			\$5,820,504	\$40,512,500

## Notes:

- (1) Page 51, Item (5).
- (2) Estimated by BAC.
- (3) Page 73, 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)
2004-05	\$2,470,462	1.588	\$604,907	\$6.49
2005-06	1,656,233	1.553	610,956	4.21
2006-07	4,233,842	1.519	617,065	10.42
2007-08	1,906,074	1.485	623,236	4.54
2008-09	2,547,422	1.452	629,468	5.88
2009-10	6,564,346	1.420	610,584	15.27
2010-11	7,308,265	1.389	592,267	17.14
2011-12	3,736,547	1.358	574,499	8.83
2012-13	4,434,948	1.358	557,264	10.81
2013-14	6,102,145	1.358	562,836	14.73
2014-15	2,567,932	1.358	568,465	6.14
2015-16	4,105,976	1.258	574,149	9.00
2016-17	2,258,286	1.165	585,632	4.49
2017-18	2,790,648	1.080	591,489	5.09
2018-19	2,815,724	1.039	603,319	4.85
Total	\$55,498,850		\$8,906,136	\$8.53
04/05-17/18	\$39,869,093		\$5,217,185	\$8.79
			(5) Selected A Priori 2018-19 Loss Rate:	\$8.79

## Notes:

- (1) Page 52, Column (3).
- (2) Estimated by BAC.
- (3) Page 73, Column (3).
- (4)  $(1) \times (2) / (3)$ .
- (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)
1987-88	\$131,601	\$133,650	\$132,618
1988-89	726,745	727,974	727,354
1989-90	762,432	777,628	769,955
1990-91	1,462,425	1,408,451	1,435,691
1991-92	1,547,115	1,415,822	1,515,296
1992-93	1,848,105	1,813,245	1,830,857
1993-94	1,231,894	1,225,997	1,228,978
1994-95	1,056,206	912,525	1,025,440
1995-96	1,648,669	1,254,909	1,597,481
1996-97	1,850,129	1,765,319	1,808,506
1997-98	2,158,074	1,518,373	2,070,113
1998-99	1,740,975	1,674,926	1,708,606
1999-00	2,342,506	2,379,034	2,360,371
2000-01	5,308,036	5,005,400	5,160,373
2001-02	2,979,072	2,691,200	2,839,251
2002-03	2,647,974	2,763,829	2,703,986
2003-04	2,312,087	2,406,726	2,357,585
2004-05	2,558,771	2,373,630	2,470,462
2005-06	1,735,366	1,568,155	1,656,233
2006-07	4,225,749	4,243,020	4,233,842
2007-08	1,933,787	1,874,207	1,906,074
2008-09	2,441,263	2,671,944	2,547,422
2009-10	6,417,140	6,739,110	6,564,346
2010-11	7,457,851	7,126,821	7,308,265
2011-12	3,911,462	3,524,596	3,736,547
2012-13	4,498,934	4,354,808	4,434,948
2013-14	6,400,323	5,716,712	6,102,145
2014-15	2,764,616	2,289,496	2,567,932
2015-16	4,028,971	4,219,492	4,105,976
2016-17	1,985,143	2,856,594	2,258,286
2017-18	2,817,688	2,726,988	2,790,648
2018-19	2,611,342	3,597,521	2,815,724
Total	\$87,542,451	\$85,758,102	\$86,771,311

## Notes:

- (1) Page 46, Column (3).
- (2) Page 47, 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)
2009-10	\$85,200	0.720	57	\$3,496,721
2010-11	85,200	0.736	88	5,520,353
2011-12	85,200	0.736	73	4,579,383
2012-13	85,200	0.736	60	3,763,877
2013-14	85,200	0.736	64	4,014,802
2014-15	85,200	0.795	37	2,505,675
2015-16	85,200	0.858	63	4,605,772
2016-17	85,200	0.926	52	4,103,969
2017-18	85,200	0.962	46	3,772,055
2018-19	85,200	1.000	67	5,708,400
Total				\$42,071,007

## Notes:

- (1) Page 54, Item (5).
- (2) Estimated by BAC.
- (3) Page 55, 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)
2007-08	\$1,906,074	1.452	59	\$46,918
2008-09	2,547,422	1.420	80	45,223
2009-10	6,564,346	1.389	57	159,945
2010-11	7,308,265	1.358	88	112,794
2011-12	3,736,547	1.358	73	69,519
2012-13	4,434,948	1.358	60	100,391
2013-14	6,102,145	1.358	64	129,496
2014-15	2,567,932	1.258	37	87,317
2015-16	4,105,976	1.165	63	75,955
2016-17	2,258,286	1.080	52	46,883
2017-18	2,790,648	1.039	46	63,033
2018-19	2,815,724	1.000	67	42,026
Total	\$47,138,313		746	\$81,625
07/08-17/18	\$44,322,589		679	\$85,200
			(5) Selected Severity:	\$85,200

## Notes:

- (1) Page 52, Column (3).
- (2) Estimated by BAC.
- (3) Page 55, Column (3).
- (4)  $(1) \times (2) / (3)$ .
- (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 <u>(1)</u>	Bornhuetter- Ferguson Method <u>(2)</u>	Selected Claim Count <u>(3)</u>
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	55		55
1999-00	51		51
2000-01	63		63
2001-02	71		71
2002-03	75		75
2003-04	74		74
2004-05	68		68
2005-06	54		54
2006-07	76		76
2007-08	59		59
2008-09	80		80
2009-10	57		57
2010-11	88		88
2011-12	73		73
2012-13	60		60
2013-14	64		64
2014-15	37		37
2015-16	63		63
2016-17	52		52
2017-18	46		46
2018-19	75	67	67
Total	1,798		1,790

## Notes:

- (1) Page 56, Column (3).
- (2) Page 57, 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 12/31/18 (1)	Development Factors as of 12/31/18 (2)	Projected Ultimate Indemnity Claims (3)
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	55	1.000	55
1999-00	51	1.000	51
2000-01	63	1.000	63
2001-02	71	1.000	71
2002-03	75	1.000	75
2003-04	74	1.000	74
2004-05	68	1.000	68
2005-06	54	1.000	54
2006-07	76	1.000	76
2007-08	59	1.000	59
2008-09	80	1.000	80
2009-10	57	1.000	57
2010-11	88	1.000	88
2011-12	73	1.000	73
2012-13	60	1.002	60
2013-14	64	1.007	64
2014-15	36	1.015	37
2015-16	61	1.030	63
2016-17	49	1.056	52
2017-18	42	1.097	46
2018-19	24	3.131	75
Total	1,737		1,798

## Notes:

- (1) Provided by Aims.
- (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 12/31/18 (5)	Projected Ultimate Claims (6)
2018-19	63	3.131	68.1%	43	24	67

## Notes:

- (1) Page 58, Item (6).
- (2) Page 56, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 56, 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 <u>(1)</u>	Trended Payroll (\$Millions) <u>(2)</u>	Indicated Claim Frequency <u>(3)</u>
2009-10	57	\$61.1	0.93
2010-11	88	59.2	1.49
2011-12	73	57.4	1.27
2012-13	60	55.7	1.08
2012-13	60	55.7	1.08
2013-14	64	56.3	1.14
2014-15	37	56.8	0.65
2015-16	63	57.4	1.10
2016-17	52	58.6	0.89
2017-18	46	59.1	0.78
2018-19	75	60.3	1.24
Total	675	\$637.8	1.06
09/10-17/18	600	\$577.4	1.04
	(4) Selected Claim Frequency:		1.04
	(5) 2018-19 Trended Payroll (\$Millions):		\$60.3
	(6) 2018-19 A Priori Claim Count:		63

## Notes:

- (1) Page 56, Column (3).
- (2) Page 73, Column (3) / 10,000.
- (3) (1) / (2).
- (4) Selected on the basis of (3).
- (5) Page 73, 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 2019-20  
**Unlimited Losses Including 4850/TD**

Program Year	2018-19 Level Loss Rate (1)	Expected Increase for 2019-20 (2)	Trended Payroll (\$00's) (3)	Projected Ultimate Losses (4)	Projected 2019-20 Unlimited Loss Rate (5)
2019-20	\$9.75	1.039	\$609,352	<b>6,174,414</b>	\$9.72
			(6) Projected 4850 :	\$150,000	
			(7) Projected TD :	\$360,000	
	<u>Full Rate</u>	<u>Excluding 4850 Only</u>	<u>Excluding TD Only</u>	<u>Excluding 4850 &amp; TD</u>	
Unlimited	\$9.72	\$9.48	\$9.15	\$8.92	
\$1M Limit:	\$8.96	\$8.73	\$8.40	\$8.16	
\$750K Limit:	\$8.58	\$8.34	\$8.01	\$7.78	
\$500K Limit:	\$7.84	\$7.61	\$7.28	\$7.04	
\$350K Limit:	\$7.05	\$6.81	\$6.48	\$6.25	
\$250K Limit:	<b>\$6.20</b>	<b>\$5.96</b>	<b>\$5.63</b>	<b>\$5.39</b>	

Notes:

- (1) Page 61, Item (11).
- (2) 3.9% Expected Increase Estimated by BAC.
- (3) Page 73, Column (2).
- (4) (1) x (2) x (3), rounded.
- (5) (4) / [Page 73, Column (2)], rounded.
- (6) Page 27, Item (4).
- (7) Page 28, Item (4).

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)
2006-07	\$4,220,000	1.519	\$617,065	\$10.39
2007-08	1,950,000	1.485	623,236	4.65
2008-09	2,380,000	1.452	629,468	5.49
2009-10	6,400,000	1.420	610,584	14.89
2010-11	7,400,000	1.389	592,267	17.35
2011-12	4,000,000	1.358	574,499	9.46
2012-13	4,500,000	1.358	557,264	10.97
2013-14	6,400,000	1.358	562,836	15.44
2014-15	2,900,000	1.358	568,465	6.93
2015-16	4,000,000	1.258	574,149	8.76
2016-17	3,000,000	1.165	585,632	5.97
2017-18	3,600,000	1.080	591,489	6.57
Total	\$44,580,000		\$5,846,654	\$9.74
			(5) Selected Loss Rate:	\$9.74

Program Year	Largest Claim (6)	Severity Trend (7)	LDF (8)	Trended Developed Max Claim (9)
2006-07	\$822,795	1.485	1.075	\$1,313,923
2007-08	433,009	1.452	1.083	681,303
2008-09	430,181	1.420	1.096	669,853
2009-10	2,531,900	1.389	1.128	3,964,908
2010-11	1,634,746	1.358	1.137	2,525,357
2011-12	436,441	1.358	1.168	692,281
2012-13	657,617	1.358	1.181	1,054,564
2013-14	824,887	1.358	1.203	1,348,306
2014-15	513,741	1.258	1.175	759,451
2015-16	618,547	1.165	1.281	923,485

(10) Factor for Unlimited Retention: 1.001

(11) Unlimited 2018-19 Rate: **\$9.75**

Notes:

- (1) Page 45, Column (6).
- (2) Page 51, Column (2).
- (3) Page 73, Column (3).
- (4) (1) x (2) / (3).
- (5) Based on Column (4).
- (6) Provided by Aims.
- (7) Page 54, Column (2). Indexed to 2018-19.
- (8) Page 46, 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, 2019  
Assuming a 2.0% Interest Rate

**Limited Self-Insured Losses Excluding 4850**

Program Year	Projected Unpaid Losses (1)	Discount Factor (2)	Discounted Unpaid Losses (3)
1987-88	\$4,853	0.930	\$4,513
1988-89	20,816	0.919	19,139
1989-90	407	0.909	370
1990-91	29,182	0.898	26,218
1991-92	166,372	0.888	147,735
1992-93	61,317	0.878	53,811
1993-94	38,579	0.884	34,099
1994-95	178,554	0.888	158,578
1995-96	20,416	0.891	18,189
1996-97	149,758	0.893	133,682
1997-98	157,941	0.894	141,148
1998-99	131,471	0.894	117,559
1999-00	77,030	0.894	68,889
2000-01	87,196	0.894	77,971
2001-02	158,965	0.894	142,102
2002-03	136,574	0.894	122,033
2003-04	212,411	0.893	189,699
2004-05	234,975	0.893	209,739
2005-06	346,074	0.892	308,740
2006-07	376,702	0.892	335,890
2007-08	332,787	0.892	296,815
2008-09	250,364	0.894	223,754
2009-10	543,019	0.900	488,540
2010-11	473,972	0.899	426,149
2011-12	709,788	0.898	637,361
2012-13	592,546	0.908	537,889
2013-14	668,450	0.914	611,000
2014-15	777,676	0.912	709,184
2015-16	1,015,676	0.908	922,707
2016-17	1,276,514	0.908	1,158,764
2017-18	1,958,934	0.910	1,782,468
2018-19	2,531,959	0.911	2,307,715
<b>Total</b>	<b>\$13,721,278</b>		<b>\$12,412,450</b>

(4) Indicated Discount Factor: 0.905

Notes:

- (1) Page 25, Column (6).
- (2) (3) / (1).
- (3) Based upon a 2.0% interest rate.
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Discounted Value of 2019-20 Losses as of July 1, 2019  
Assuming a 2.0% Interest rate

Unlimited Losses Including 4850/TD

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2019-20	\$736,378	0.990	\$729,123
2020-21	1,039,597	0.971	1,009,171
2021-22	704,036	0.952	670,030
2022-23	532,403	0.933	496,752
2023-24	412,508	0.915	377,339
2024-25	373,301	0.897	334,779
2025-26	267,741	0.879	235,404
2026-27	249,231	0.862	214,833
2027-28	214,647	0.845	181,394
2028-29	199,759	0.829	165,503
2029-30	182,876	0.812	148,544
2030-31	156,716	0.796	124,799
2031-32	123,488	0.781	96,410
2032-33	104,965	0.765	80,342
2033-34	94,401	0.750	70,839
2034-35	84,900	0.736	62,461
2035-36	76,356	0.721	55,073
2036-37	68,671	0.707	48,559
2037-38	61,760	0.693	42,816
2038-39	55,544	0.680	37,752
2039-40	49,954	0.666	33,287
2040-41	44,927	0.653	29,350
2041-42	40,405	0.640	25,878
2042-43	36,339	0.628	22,817
2043-44	32,682	0.616	20,119
44-45 to 52-53	230,825	0.548	126,476
<b>Total</b>	<b>\$6,174,413</b>		<b>\$5,439,850</b>

(4) Indicated Discount Factor: 0.881

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 2.0% 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 2019-20 Losses as of July 1, 2019  
Assuming a 2.0% Interest rate

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

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2019-20	\$687,862	0.990	\$681,085
2020-21	949,655	0.971	921,861
2021-22	659,572	0.952	627,714
2022-23	483,853	0.933	451,454
2023-24	376,967	0.915	344,828
2024-25	344,198	0.897	308,679
2025-26	259,713	0.879	228,346
2026-27	241,062	0.862	207,791
2027-28	207,449	0.845	175,312
2028-29	191,888	0.829	158,981
2029-30	182,884	0.812	148,551
2030-31	148,135	0.796	117,966
2031-32	116,609	0.781	91,040
2032-33	98,551	0.765	75,432
2033-34	87,714	0.750	65,822
2034-35	78,024	0.736	57,402
2035-36	69,368	0.721	50,033
2036-37	61,646	0.707	43,592
2037-38	54,762	0.693	37,964
2038-39	48,630	0.680	33,052
2039-40	43,171	0.666	28,767
2040-41	29,075	0.653	18,994
2041-42	26,766	0.640	17,142
2042-43	24,675	0.628	15,493
2043-44	22,778	0.616	14,022
44-45 to 52-53	198,039	0.545	107,837
Total	\$5,693,047		\$5,029,160

(4) Indicated Discount Factor: 0.883

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 2.0% 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 2019-20 Losses as of July 1, 2019  
Assuming a 2.0% Interest rate

\$500,000 SIR

Limited Self-Insured Losses Including 4850

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2019-20	\$618,684	0.990	\$612,588
2020-21	818,943	0.971	794,975
2021-22	610,679	0.952	581,183
2022-23	425,216	0.933	396,743
2023-24	365,523	0.915	334,360
2024-25	322,662	0.897	289,366
2025-26	289,172	0.879	254,247
2026-27	294,820	0.862	254,130
2027-28	169,645	0.845	143,364
2028-29	147,640	0.829	122,321
2029-30	126,159	0.812	102,474
2030-31	115,331	0.796	91,843
2031-32	89,830	0.781	70,132
2032-33	74,985	0.765	57,395
2033-34	65,768	0.750	49,353
2034-35	57,666	0.736	42,425
2035-36	50,551	0.721	36,461
2036-37	44,305	0.707	31,329
2037-38	38,825	0.693	26,916
2038-39	34,018	0.680	23,121
2039-40	29,803	0.666	19,859
2040-41	16,295	0.653	10,645
2041-42	15,195	0.640	9,732
2042-43	14,203	0.628	8,918
2043-44	13,307	0.616	8,192
44-45 to 52-53	132,227	0.538	71,128
Total	\$4,981,451		\$4,443,200

(4) Indicated Discount Factor: 0.892

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 2.0% 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 2019-20 Losses as of July 1, 2019  
Assuming a 2.0% Interest rate

\$350,000 SIR

Limited Self-Insured Losses Including 4850

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2019-20	\$568,209	0.990	\$562,611
2020-21	743,051	0.971	721,304
2021-22	573,350	0.952	545,656
2022-23	412,821	0.933	385,178
2023-24	297,360	0.915	272,008
2024-25	267,933	0.897	240,284
2025-26	357,435	0.879	314,265
2026-27	283,330	0.862	244,225
2027-28	125,194	0.845	105,799
2028-29	113,380	0.829	93,936
2029-30	149,268	0.812	121,245
2030-31	95,728	0.796	76,232
2031-32	73,705	0.781	57,543
2032-33	60,530	0.765	46,331
2033-34	51,983	0.750	39,008
2034-35	44,622	0.736	32,828
2035-36	38,291	0.721	27,618
2036-37	32,850	0.707	23,229
2037-38	28,177	0.693	19,534
2038-39	24,164	0.680	16,423
2039-40	20,719	0.666	13,806
2040-41	6,731	0.653	4,397
2041-42	6,507	0.640	4,168
2042-43	6,321	0.628	3,969
2043-44	6,169	0.616	3,798
44-45 to 52-53	90,362	0.528	47,712
Total	\$4,478,188		\$4,023,107

(4) Indicated Discount Factor: 0.898

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 2.0% 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 2019-20 Losses as of July 1, 2019  
Assuming a 2.0% Interest rate

\$250,000 SIR

Limited Self-Insured Losses Including 4850

Fiscal Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2019-20	\$519,013	0.990	\$513,900
2020-21	673,746	0.971	654,027
2021-22	545,761	0.952	519,400
2022-23	377,096	0.933	351,845
2023-24	272,572	0.915	249,334
2024-25	259,421	0.897	232,651
2025-26	308,940	0.879	271,627
2026-27	243,538	0.862	209,926
2027-28	111,076	0.845	93,869
2028-29	98,049	0.829	81,235
2029-30	107,786	0.812	87,551
2030-31	69,226	0.796	55,128
2031-32	52,894	0.781	41,295
2032-33	43,211	0.765	33,075
2033-34	36,976	0.750	27,747
2034-35	31,653	0.736	23,287
2035-36	27,107	0.721	19,552
2036-37	23,223	0.707	16,422
2037-38	19,902	0.693	13,798
2038-39	17,061	0.680	11,596
2039-40	14,629	0.666	9,748
2040-41	12,546	0.653	8,196
2041-42	10,760	0.640	6,891
2042-43	9,228	0.628	5,795
2043-44	7,914	0.616	4,872
44-45 to 52-53	42,106	0.535	22,524
Total	\$3,935,436		\$3,565,291

(4) Indicated Discount Factor: 0.906

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 2.0% 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, 2018 - 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	3,832
2008	317	1,879	1,778	1,423	1,428	1,526	1,620	2,071	1,772	1,820	1,882
2009	488	1,618	2,060	1,916	1,940	2,331	2,207	2,334	2,203	2,196	2,227
2010	657	2,758	3,500	3,588	5,609	5,938	6,019	6,056	5,641	5,691	
2011	1,155	4,758	4,564	4,256	5,135	5,490	5,466	7,107	6,557		
2012	586	1,659	2,086	2,501	2,742	2,972	3,170	3,349			
2013	266	1,347	2,301	2,538	2,916	3,165	3,810				
2014	400	1,704	2,849	3,714	4,357	5,318					
2015	79	822	1,038	1,382	2,353						
2016	464	1,118	1,848	3,145							
2017	278	775	1,300								
2018	161	1,229									
2019	239										
	<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	3.634	1.253	1.079	1.144	1.056	1.041	1.072	0.978	1.010	1.028	
REFERENCE	2.817	1.274	1.114	1.058	1.037	1.023	1.010	1.015	1.010	1.007	1.096
SELECTED	4.757	1.501	1.192	1.090	0.976	1.019	1.011	1.027	1.009	1.028	1.096
CUMULATIVE	10.906	2.292	1.527	1.281	1.175	1.203	1.181	1.168	1.137	1.128	1.096

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Cumulative Paid Losses (\$000's) as of December 31, 2018 - Unlimited

Program Year	Months of Development										
	<u>6</u>	<u>18</u>	<u>30</u>	<u>42</u>	<u>54</u>	<u>66</u>	<u>78</u>	<u>90</u>	<u>102</u>	<u>114</u>	<u>126</u>
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	3,375
2008	65	797	1,117	1,190	1,236	1,294	1,369	1,511	1,546	1,608	1,644
2009	156	891	1,433	1,593	1,719	1,820	1,831	1,988	1,996	2,036	2,078
2010	174	1,675	2,265	2,775	3,033	4,299	4,410	4,544	4,869	5,034	
2011	376	2,001	3,230	3,761	3,999	4,420	4,640	4,839	5,166		
2012	192	728	1,366	1,855	2,059	2,215	2,375	2,491			
2013	136	805	1,579	1,865	2,181	2,467	2,945				
2014	161	1,145	2,099	2,673	3,320	3,675					
2015	23	475	772	1,150	1,376						
2016	156	751	1,329	2,234							
2017	154	576	854								
2018	71	505									
2019	86										
	<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	5.827	1.581	1.265	1.130	1.122	1.054	1.044	1.039	1.030	1.041	
REFERENCE	3.578	1.673	1.287	1.171	1.122	1.088	1.066	1.055	1.042	1.042	1.286
SELECTED	7.730	1.613	1.772	1.135	1.069	1.052	1.045	1.026	1.031	1.041	1.286
CUMULATIVE	41.717	5.397	3.346	1.889	1.663	1.556	1.479	1.415	1.380	1.339	1.286

Monterey Bay Area Self Insurance Authority  
Workers' Compensation Program

Cumulative # of Indemnity Losses Reported as of December 31, 2018 - 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>	<u>138</u>
2006		52	53	54	54	53	53	53	53	53	53	54
2007	32	69	74	74	74	74	75	75	75	75	75	76
2008	22	56	58	59	59	60	60	60	60	60	60	59
2009	30	78	79	78	78	79	79	80	80	80	80	
2010	25	53	55	56	56	56	57	57	57	57		
2011	44	86	87	86	87	88	88	88	88			
2012	25	66	68	69	71	73	73	73				
2013	19	53	56	58	59	59	60					
2014	26	57	58	61	61	64						
2015	9	29	33	33	36							
2016	21	57	60	61								
2017	15	48	49									
2018	16	42										
2019	24											
	<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	2.444	1.037	1.012	1.011	1.012	1.006	1.002	1.000	1.000	1.000	1.005	
SELECTED	2.856	1.038	1.026	1.015	1.007	1.005	1.002	1.000	1.000	1.000	1.000	1.000
CUMULATIVE	3.131	1.097	1.056	1.030	1.015	1.007	1.002	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 2018-19 (\$00's) (3)
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	564,207
1998-99	300,000	212,991	569,849
1999-00	300,000	267,420	575,548
2000-01	300,000	263,274	581,303
2001-02	350,000	297,462	587,116
2002-03	500,000	346,678	592,988
2003-04	NO XS	401,995	598,918
2004-05	500,000	401,860	604,907
2005-06	500,000	429,640	610,956
2006-07	500,000	428,182	617,065
2007-08	500,000	437,000	623,236
2008-09	500,000	470,000	629,468
2009-10	500,000	455,000	610,584
2010-11	250,000	454,739	592,267
2011-12	250,000	454,479	574,499
2012-13	250,000	422,491	557,264
2013-14	250,000	436,959	562,836
2014-15	250,000	455,957	568,465
2015-16	250,000	472,388	574,149
2016-17	250,000	518,291	585,632
2017-18	250,000	545,055	591,489
2018-19	250,000	603,319	603,319
2019-20	?	635,294	609,352

## Notes:

- (1) Provided by MBASIA.
- (2) Provided by MBASIA. 2019-20 estimated by BAC.
- (3) Estimated by BAC.