

# **Monterey Bay Area Self Insurance Authority**

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

**BAY ACTUARIAL CONSULTANTS  
Moraga, California  
March 29, 2019**

# Bay Actuarial Consultants

March 29, 2019

Mr. Conor Boughey  
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 General and Auto Liability self-insurance program. We appreciate the opportunity to serve the Authority.

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

Respectfully,

BAY ACTUARIAL CONSULTANTS

  
Jack Joyce, FCAS, MAAA  
Principal

# Monterey Bay Area Self Insurance Authority

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

### Table of Contents

|                                                            | <u>Page</u> |
|------------------------------------------------------------|-------------|
| Introduction                                               | 2           |
| <i>Background &amp; Purpose</i>                            | 3           |
| <i>Conditions &amp; Limitations</i>                        | 4           |
| <i>Organization of the Report</i>                          | 4           |
| Management Summary                                         | 5           |
| <i>Projected 2019-20 Losses and Loss Rates</i>             | 6           |
| <i>The Authority's Past Rates of Loss</i>                  | 7           |
| <i>Number of Losses</i>                                    | 8           |
| <i>Average Loss Amount</i>                                 | 8           |
| <i>Liability for Unpaid Losses</i>                         | 9           |
| <i>ULAE Liability</i>                                      | 10          |
| <i>Comparison with 2018 Estimates</i>                      | 11          |
| <i>Reconciling the 12/31/17 &amp; 12/31/18 Liabilities</i> | 12          |
| <i>Loss Breakout as of 6/30/19</i>                         | 12          |
| <i>Short-Term Liability</i>                                | 13          |
| <i>Interest Rates</i>                                      | 13          |
| Technical Approach                                         | 14          |
| Summary Exhibits                                           | 17          |
| Fiscal Year End Exhibits                                   | 23          |
| Loss Projection Exhibits                                   | 32          |
| \$250,000 Limit Loss Exhibits                              | 46          |
| Future Loss Exhibits                                       | 53          |
| Discounting Exhibits                                       | 57          |
| Deductibles Exhibits                                       | 61          |
| Claims Data                                                | 65          |

# **Monterey Bay Area Self Insurance Authority**

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

### **Introduction**

# Monterey Bay Area Self Insurance Authority

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

### Introduction

#### Background & Purpose

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

- 1) **Projected 2019-20 Losses & Rate of Loss.** A projection of the losses expected to be incurred during 2019-20, expressed as a total dollar amount and also as a rate of loss per \$100 of payroll.
- 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 liabilities to present value, assuming a 1.5% interest rate. The discounted estimates take into account the time value of money as general and auto liability costs discharge over an extended timeframe.
- 4) **Variability of Estimates.** We have included an analysis of items (1) and (2) above, in terms of “probability levels.”
- 5) **Short-Term versus Long-Term.** We 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 and Alliant Insurance Services provided the loss, payroll, and excess insurance information. We did not audit this data and are not responsible for its accuracy. In any actuarial analysis the accuracy and relevance of the conclusions and the reasonableness of the recommendations depend upon the accuracy and relevance of the underlying data.

The term "losses" refers to all costs that can be associated with 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 uncertain estimates. Uncertainty is inherent and unavoidable because many of the events that will determine future claims costs have not yet taken place. These events include, but are not limited to, future legislation that may affect the tort liability system, changes in the rate of inflation, and the outcomes of current and future litigation and settlement negotiations. Our projections are based upon the Authority's historical experience. We 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 divided the remainder of this report into seven sections: the *Management Summary*, the *Technical Approach* section, the *Summary Exhibits*, the *Fiscal Year End Exhibits*, the *Loss Projection Exhibits*, the *Future Loss Exhibits*, and the *Discounting Exhibits*.

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

# **Monterey Bay Area Self Insurance Authority**

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

### **Management Summary**

# Monterey Bay Area Self Insurance Authority

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

### Management Summary

#### Projected 2019-20 Losses and Loss Rates

Tables I and II shows the projected 2019-20 losses and loss rates at various probability levels, discounted and undiscounted. The rates in Table I are gross of the \$10,000 per loss deductible, while those in Table II are net. The rates are discounted at 1.5% interest. The items in Tables I and II do not include claims handling fees (“ULAE”), administrative costs, or the cost of excess insurance coverage. CARMA is assumed to cover any general and auto liability losses that exceed \$1,000,000, and the Employment Risk Management Authority (“ERMA”) is expected to cover any EPL losses that exceed \$500,000.

Tables I and II show actuarial central estimates, plus estimates at various probability levels. The probability level rates correspond to the estimated probabilities that the indicated rate will be adequate. For example, we estimate that there is a 70% probability that the actual 2019-20 discounted loss rate, gross of deductibles (Table I) will be less than **\$3.23**. There is a table on page 13 that allows one to discount these loss rates at interest rates other than 1.5%.

| <b>Table I: Projected 2019-20 Losses and Loss Rates</b>                         |                            |                          |                               |                             |
|---------------------------------------------------------------------------------|----------------------------|--------------------------|-------------------------------|-----------------------------|
| <b>\$1M SIR (\$500K EPL SIR), Gross of \$10K Deductible, 1.5% Interest Rate</b> |                            |                          |                               |                             |
| <u>Probability Level</u>                                                        | <u>Undiscounted Losses</u> | <u>Discounted Losses</u> | <u>Undiscounted Loss Rate</u> | <u>Discounted Loss Rate</u> |
| <b>Central Estimate</b>                                                         | <b>\$1,764,241</b>         | <b>\$1,697,200</b>       | <b>\$2.80</b>                 | <b>\$2.69</b>               |
| 70%                                                                             | 2,117,089                  | 2,036,640                | 3.36                          | <b>\$3.23</b>               |
| 75%                                                                             | 2,311,156                  | 2,223,332                | 3.67                          | 3.52                        |
| 80%                                                                             | 2,505,222                  | 2,410,024                | 3.98                          | 3.82                        |
| 90%                                                                             | 3,122,707                  | 3,004,044                | 4.96                          | 4.76                        |
| <b>2018-19 C.E.</b>                                                             | <b>\$1,496,574</b>         | <b>\$1,444,194</b>       | <b>\$2.73</b>                 | <b>\$2.63</b>               |
| % Change from 18-19                                                             | +17.9%                     | +17.5%                   | +2.6%                         | +2.3%                       |

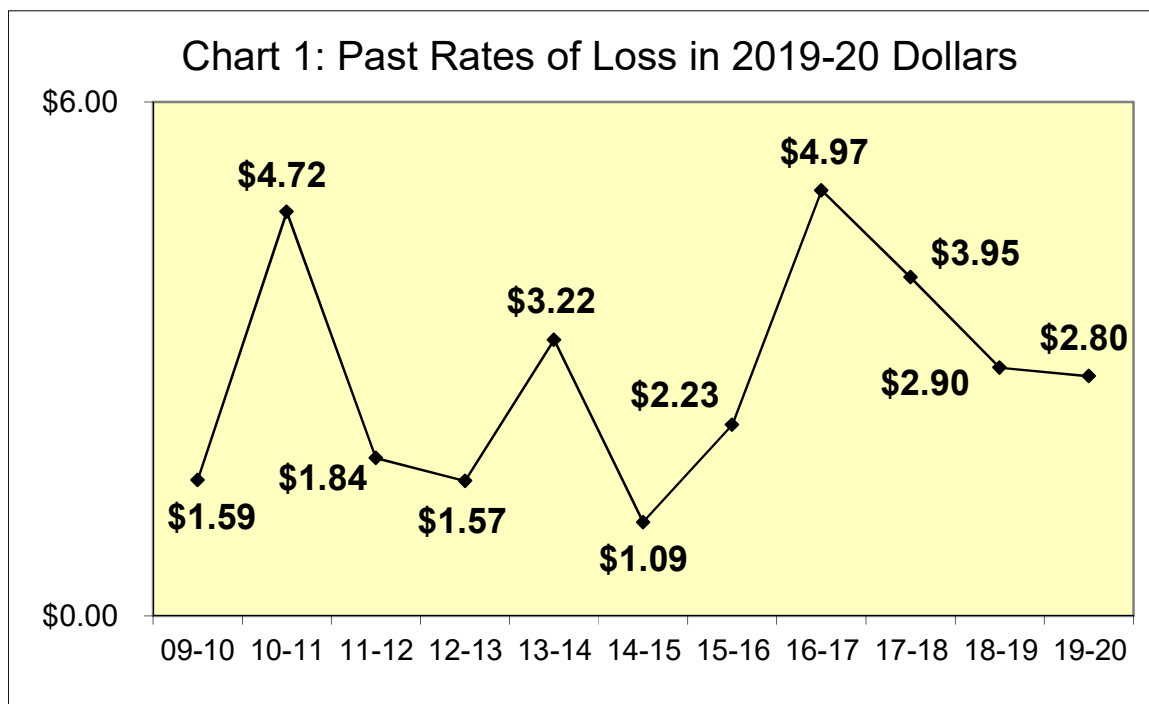
The large discrepancy between the increases in the projected losses and the increases in the projected rates is due to a large increase in projected payroll. Last year projected 2018-19 payroll was **\$54.9 million**. This year projected 2019-20 payroll is **\$63.1 million**, a 14.9% increase. Actual 2018-19 payroll was **\$59.9 million**.

| Table II: Projected 2019-20 Losses and Loss Rates<br>\$1M SIR (\$500K EPL SIR), NET of \$10K Deductible, 1.5% Interest Rate |                     |                    |                        |                      |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|------------------------|----------------------|
| Probability Level                                                                                                           | Undiscounted Losses | Discounted Losses  | Undiscounted Loss Rate | Discounted Loss Rate |
| <b>Central Estimate</b>                                                                                                     | <b>\$1,587,845</b>  | <b>\$1,524,331</b> | <b>\$2.52</b>          | <b>\$2.42</b>        |
| 70%                                                                                                                         | 1,937,171           | 1,859,684          | 3.07                   | <b>\$2.95</b>        |
| 75%                                                                                                                         | 2,127,712           | 2,042,604          | 3.38                   | 3.24                 |
| 80%                                                                                                                         | 2,350,011           | 2,256,010          | 3.73                   | 3.58                 |
| 90%                                                                                                                         | 3,001,027           | 2,880,986          | 4.76                   | 4.57                 |
| <b>2018-19 C.E.</b>                                                                                                         | <b>\$1,329,061</b>  | <b>\$1,282,544</b> | <b>\$2.42</b>          | <b>\$2.34</b>        |
| % Change from 18-19                                                                                                         | +19.5%              | +18.9%             | +4.1%                  | +3.4%                |

The \$10,000 deductible rates in Table II are between 4.0% and 10.0% lower than the Table I rates.

### The Authority's Past Rates of Loss

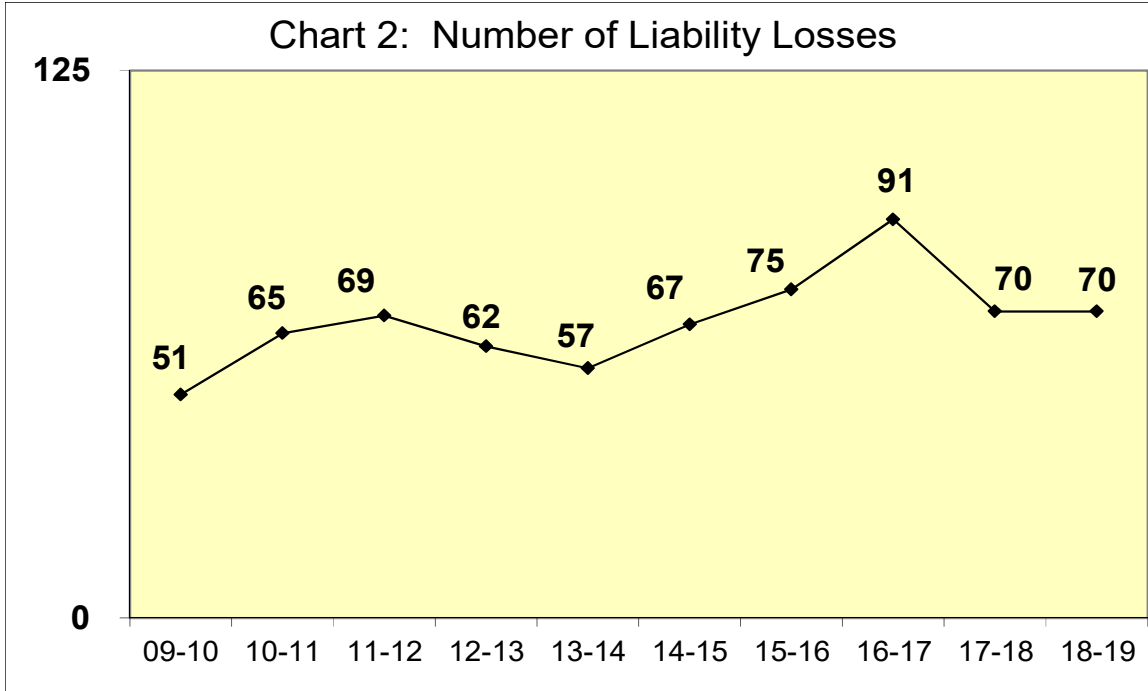
Chart 1 shows the Authority's estimated past rates of loss at the \$1M/\$500K (\$500K EPL) SIR. The older rates are equal to the estimated total losses divided by the total insured payroll. The **\$2.80** rate for 2019-20 is the projected undiscounted central estimate rate from Table I. These are undiscounted rates.



The average of the rates shown in this chart, excluding 2019-20's projected rate of \$2.80, is \$2.81.

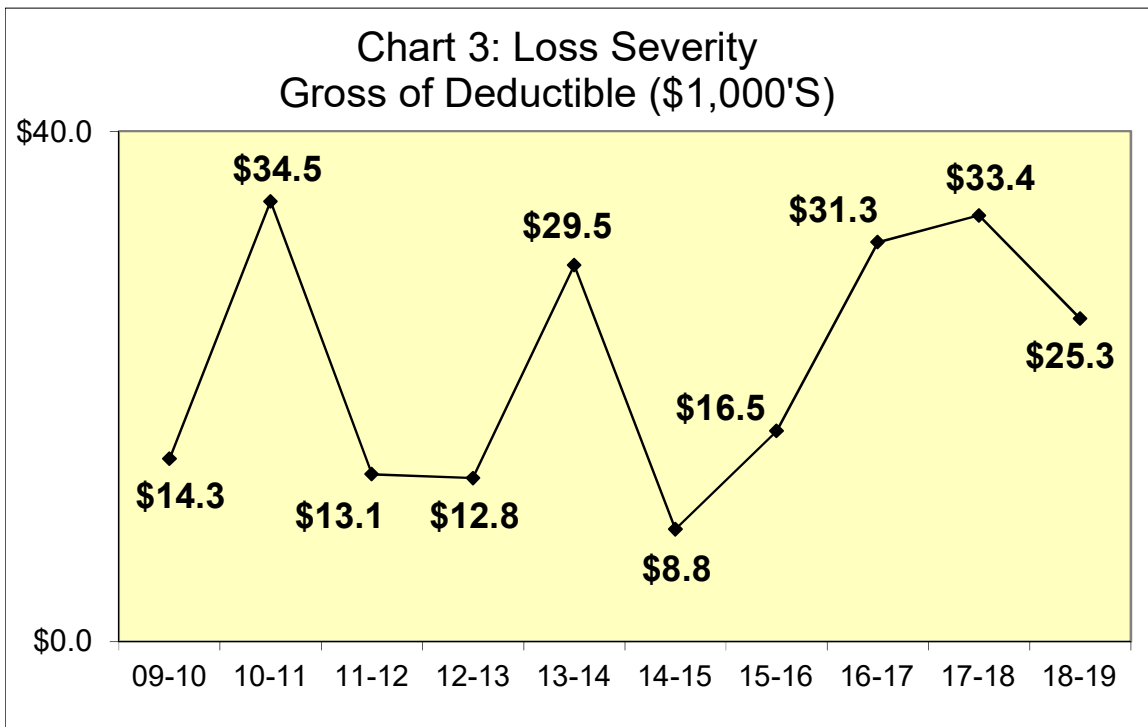
### Number of Indemnity Losses

Chart 2 shows the estimated number off indemnity losses by program year. The estimates for 16-17 and prior are not expected to change. The 2018-19 estimate of 70 is based on the 22 2018-19 losses actually reported through 12/31/18.



### Average Loss Amount

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



## Liability for Unpaid Losses

We estimate that the Authority's liability for unpaid losses was **\$4,124,000** on December 31, 2018. This is an undiscounted estimate and does not include the portion of the losses that the members will pay under their \$10,000 deductibles. Table III shows this central estimate plus the corresponding discounted amount. The Table also includes higher probability estimates for the liability.

| <b>Table III: Estimated Liability for Unpaid Losses as of December 31, 2018 – Net of Deductibles</b> |                            |                           |
|------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|
| <u>Probability Level</u>                                                                             | <u>Undiscounted Losses</u> | <u>Discounted at 1.5%</u> |
| <b>Central Estimate</b>                                                                              | <b>\$4,853,904</b>         | <b>\$4,765,676</b>        |
| 60%                                                                                                  | 4,902,443                  | 4,813,333                 |
| 70%                                                                                                  | 5,242,217                  | 5,146,930                 |
| 75%                                                                                                  | 5,484,912                  | 5,385,214                 |
| 80%                                                                                                  | 5,727,607                  | 5,623,498                 |
| 90%                                                                                                  | 6,455,693                  | 6,338,349                 |

Table IV shows the estimated liability gross of deductibles.

| <b>Table IV: Estimated Liability for Unpaid Losses as of December 31, 2018 – Gross of Deductibles</b> |                            |                           |
|-------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|
| <u>Probability Level</u>                                                                              | <u>Undiscounted Losses</u> | <u>Discounted at 1.5%</u> |
| <b>Central Estimate</b>                                                                               | <b>\$5,018,808</b>         | <b>\$4,928,469</b>        |
| 60%                                                                                                   | 5,068,996                  | 4,977,754                 |
| 70%                                                                                                   | 5,420,312                  | 5,322,747                 |
| 75%                                                                                                   | 5,671,253                  | 5,569,170                 |
| 80%                                                                                                   | 5,922,193                  | 5,815,594                 |
| 90%                                                                                                   | 6,675,014                  | 6,554,864                 |

Table V shows the projected June 30, 2019 liability net of deductibles.

| <b>Table V: Projected Liability for Unpaid Losses as of June 30, 2019 – Net of Deductibles</b> |                            |                           |
|------------------------------------------------------------------------------------------------|----------------------------|---------------------------|
| <u>Probability Level</u>                                                                       | <u>Undiscounted Losses</u> | <u>Discounted at 1.5%</u> |
| <b>Central Estimate</b>                                                                        | <b>\$4,443,724</b>         | <b>\$4,362,951</b>        |
| 60%                                                                                            | 4,398,494                  | 4,319,321                 |
| 70%                                                                                            | 4,976,074                  | 4,886,505                 |
| 75%                                                                                            | 5,331,508                  | 5,235,541                 |
| 80%                                                                                            | 5,775,800                  | 5,671,836                 |
| 90%                                                                                            | 7,064,248                  | 6,937,092                 |

Table VI shows the projected June 30, 2019 liability gross of deductibles.

| <b>Table VI: Projected Liability for Unpaid Losses<br/>as of June 30, 2019 – Gross of Deductibles</b> |                                |                               |
|-------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------|
| <b>Probability<br/>Level</b>                                                                          | <b>Undiscounted<br/>Losses</b> | <b>Discounted<br/>at 1.5%</b> |
| <b>Central Estimate</b>                                                                               | <b>\$4,593,031</b>             | <b>\$4,510,357</b>            |
| 60%                                                                                                   | 4,546,282                      | 4,465,253                     |
| 70%                                                                                                   | 5,143,269                      | 5,051,600                     |
| 75%                                                                                                   | 5,510,645                      | 5,412,428                     |
| 80%                                                                                                   | 5,969,865                      | 5,863,464                     |
| 90%                                                                                                   | 7,301,605                      | 7,171,467                     |

The 90% probability level is 33% higher than the net central estimate at December 31 but 59% higher at June 30. This is because both estimates are based on December 31 data. The June 30 projections include six months projected loss occurrences that have not yet occurred so the uncertainty is currently much higher. If the liabilities were to re-estimated at June 30 using current data that 59% “probability loading” would then fall back toward the 33% level.

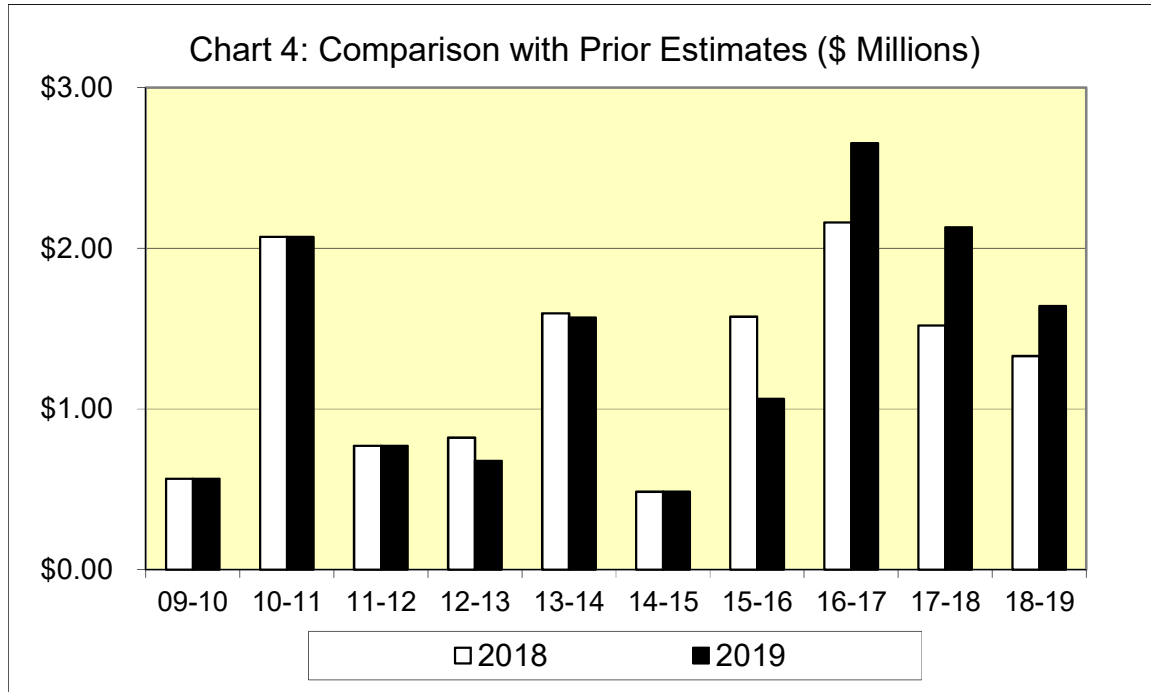
The liability is projected to drop by over \$400,000 between December 31 and June 30. That is because most of the projected claims expenditures over the next six months come from program years that currently have unusually high levels of liability – 2016-17 and 2017-18. Of course projecting the timing of claims payments has an extremely high level of uncertainty, contributing to those high probability level numbers at June 30.

### **ULAE Liability**

We estimate the liability for unpaid unallocated loss adjustment expenses (“ULAE”) at \$260,000 on both December 31, 2018 and June 30, 2019. This is shown on page 22.

### Comparison with 2018 Estimates

Chart 4 compares last year's estimates of the net of deductible losses with the new estimates. The big swings in program years 2015-16 and 2016-17 largely offset each other, but the increase in 2017-18 contributed to an increase in the overall liability. The 18-19 columns are the initial projection from one year ago and the new 12/31/18 data based estimate.



The overall increase in the estimates for all years through 2017-18 was \$420,000. The estimated ultimate losses in the 2016-17 and 2017-18 program years are \$2.653 million and \$2.130 million. These are the highest totals in the history of the program. The next highest loss years were \$2.071 million in 2010-11 (shown in Chart 4), followed by \$0.979 million in 2002-03 and \$0.464 million in 1999-00.

To put this in perspective, the rates recommended in this report for 2019-20 correspond to projected losses of \$1.588 million, which is just beneath the current estimate of the 2018-19 losses (black far right column in Chart 4).

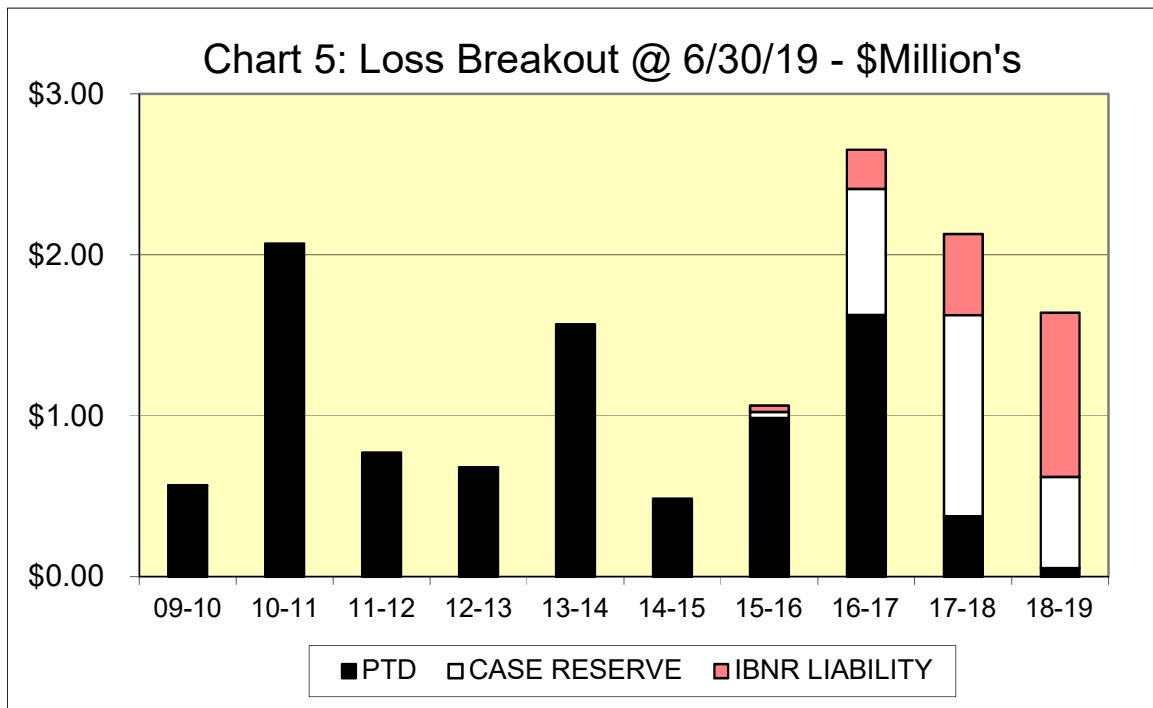
## Reconciling the 12/31/17 & 12/31/18 Liabilities

In the 2018 report we estimated that the liability, net of deductibles, was **\$4.124 million** on December 31, 2017. Table III shows the new undiscounted central estimate of **\$4.854 million**. Table VII reconciles these two amounts.

| Table VI: Reconcile 12/31/17 & 12/31/18 Liabilities<br>(\$ Millions) |             |
|----------------------------------------------------------------------|-------------|
| Estimated 12/31/17 Liability                                         | \$4,123,571 |
| Payments 1/1/18 to 12/31/18                                          | -1,269,408  |
| Change in estimates for 12/31/17 and Prior                           | +114,741    |
| Estimated Losses 1/1/18 to 12/31/18                                  | +1,885,000  |
| <hr/>                                                                |             |
| 12/31/18 Liability                                                   | \$4,853,904 |

## Loss Breakout as of 6/30/19

In Table V shows the Authority's projected 6/30/19 liability of **\$4,444,000**, net of deductibles. This comprises **\$2,636,000** in projected case reserves for known claims and a projected IBNR liability of **\$1,807,000**. This is \$0.69 of IBNR liability for every \$1.00 of case reserves. Chart 5 breaks out the projected total program year losses into their components: losses paid, case reserves, and IBNR liability. The projected 6/30/19 dollar amounts are shown on page 24. At 12/31/18 aggregate case reserves were up 19% from 12/31/17; estimated IBNR was up 16%.



## Short-Term Liability

Short-term liabilities are those expected to be discharged within twelve months. The total projected 6/30/19 liability of **\$4,444,000** comprises **\$2,188,000** of short-term and **\$2,356,000** of long-term liabilities.

## Interest Rates

The discounted liabilities and rates in this report were discounted at 1.5% interest. 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>2.22%</b> | <b>2.35%</b> |
|----------------------|--------------|--------------|-------------|--------------|--------------|
| <b>Gross Rates</b>   | <b>+4.0%</b> | <b>+1.2%</b> | <b>0.0%</b> | <b>-1.9%</b> | <b>-2.2%</b> |
| <b>Net Rates</b>     | <b>+4.2%</b> | <b>+1.4%</b> | <b>0.0%</b> | <b>-1.9%</b> | <b>-2.3%</b> |
| <b>Liabilities</b>   | <b>+1.8%</b> | <b>+0.6%</b> | <b>0.0%</b> | <b>-0.9%</b> | <b>-1.0%</b> |

The Table includes columns for 2.22% and 2.35% interest rates. Those were the “risk-free buy-and-hold” interest rates. They were obtained by calculating the overall yield on a hypothetical portfolio of US Treasuries selected to mature to match the future claims expenditures. The portfolio that matches the payments on the 2019-20 losses yields 2.22% and the portfolio matching the 6/30/19 liability expenditures yields 2.35%.

# **Monterey Bay Area Self Insurance Authority**

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

### **Technical Approach**

# Monterey Bay Area Self Insurance Authority

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

### Technical Approach

This section describes the actuarial calculations.

#### **Exhibits**

##### ***Summary Exhibits***

These exhibits summarize the analysis and conclusions. Summary Exhibits 1 and 2 show the liabilities for unpaid losses as of December 31, 2018 and 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. Summary Exhibit 4 shows the projected unpaid losses as of June 30, 2019 by program year on both discounted and non-discounted bases. Summary Exhibit 5 shows the projected ULAE liability.

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

These exhibits show the calculation of the projected unpaid losses as of June 30, 2019.

##### ***Loss Projection Exhibits***

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

We used five different actuarial methods:

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

Loss Projection Exhibit 1 summarizes the results of these methods.

***Limited Loss Exhibits - \$250,000 Limit***

These exhibits show the estimated ultimate losses limited to \$250,000 per loss. This limited loss analysis is used in calculating the projected 2019-20 loss rate.

***Future Loss Exhibits***

These exhibits show the projection of the expected 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.

***Deductibles Exhibits***

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

***Claims Data***

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

**Monterey Bay Area Self Insurance Authority**

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

**Summary Exhibits**

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Unpaid Losses as of 12/31/18  
**Losses Limited to SIR, NET of \$10K Deductible**

|                                                                         | <u>12/31/18</u> |
|-------------------------------------------------------------------------|-----------------|
| (1) Estimated Unpaid Losses:                                            | \$4,853,904     |
| (2) Discounted Value of Unpaid Losses:<br>(Assuming 1.5% Interest Rate) | \$4,765,676     |

**Probability Levels for 12/31/18 Liabilities**

| Probability<br>Level<br><u>(3)</u> | Probability<br>Factor<br><u>(4)</u> | Discounted *<br>Liability<br><u>(5)</u> |
|------------------------------------|-------------------------------------|-----------------------------------------|
| <b>Central Estimate</b>            | <b>1.00</b>                         | <b>\$4,765,676</b>                      |
| 60%                                | 1.01                                | 4,813,333                               |
| 70%                                | 1.08                                | 5,146,930                               |
| 75%                                | 1.13                                | 5,385,214                               |
| 80%                                | 1.18                                | 5,623,498                               |
| 90%                                | 1.33                                | 6,338,349                               |

\* Multiply by 1.018 to obtain undiscounted values.

Notes:

- (1) Page 25, Column (6).
- (2) (1), discounted at 1.50% interest.
- (3) Estimated probability that funding will be adequate.
- (4) Estimated by BAC.
- (5) (2) x (4).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Unpaid Losses as of 6/30/19  
**Losses Limited to SIR, NET of \$10K Deductible**

|                                                                         | <u>06/30/19</u> |
|-------------------------------------------------------------------------|-----------------|
| (1) Projected Unpaid Losses:                                            | \$4,443,724     |
| (2) Discounted Value of Unpaid Losses:<br>(Assuming 1.5% Interest Rate) | \$4,362,951     |

**Probability Levels for 6/30/19 Liabilities**

| Probability<br>Level<br><u>(3)</u> | Probability<br>Factor<br><u>(4)</u> | Discounted *<br>Liability<br><u>(5)</u> |
|------------------------------------|-------------------------------------|-----------------------------------------|
| 60%                                | 0.99                                | 4,319,321                               |
| <b>Central Estimate</b>            | <b>1.00</b>                         | <b>\$4,362,951</b>                      |
| 70%                                | 1.12                                | 4,886,505                               |
| 75%                                | 1.20                                | 5,235,541                               |
| 80%                                | 1.30                                | 5,671,836                               |
| 90%                                | 1.59                                | 6,937,092                               |

\* Multiply by 1.018 to obtain undiscounted values.

Notes:

- (1) Page 21, Column (1).
- (2) Page 21, Column (2).
- (3) Estimated probability that funding will be adequate.
- (4) Estimated by BAC.
- (5) (2) x (4).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Loss Funding Rate for 2019-20  
**Losses Limited to \$1,000,000, NET of \$10K Deductible**

(1) Discounted Loss Rate: Loss Rates  
\$2.42  
(as of July 1, 2019, 1.5% interest rate)

| <b><u>Probability Levels</u></b>   |                                     |                                    |
|------------------------------------|-------------------------------------|------------------------------------|
| Probability<br>Level<br><u>(2)</u> | Probability<br>Factor<br><u>(3)</u> | Discounted *<br>Rate<br><u>(4)</u> |
| 50%                                | 0.86                                | 2.08                               |
| <b>Central Estimate</b>            | <b>1.00</b>                         | <b>\$2.42</b>                      |
| 60%                                | 1.02                                | 2.47                               |
| 70%                                | 1.22                                | 2.95                               |
| 75%                                | 1.34                                | 3.24                               |
| 80%                                | 1.48                                | 3.58                               |
| 90%                                | 1.89                                | 4.57                               |

\* Multiply by 1.042 to obtain undiscounted values.

Notes:

- (1) [Page 54, Column ] x [Page 60, Column (4)],  
adjusted for \$10,000 deductible.
- (2) Estimated probability that funding will be adequate.
- (3) Estimated by BAC.
- (4) (1) x (3).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2019  
**Losses Limited to SIR, NET of \$10K Deductible**

| Program<br>Year | Undiscounted<br>Value:<br>Claims<br>Liabilities<br>as of<br>6/30/19<br><u>(1)</u> | Discounted<br>(1.5% Interest)<br>Claims<br>Liabilities<br>as of<br>6/30/19<br><u>(2)</u> | Estimated<br>Ultimate<br>Losses<br><u>(3)</u> |
|-----------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------|
| 2009-10         | \$0                                                                               | \$0                                                                                      | \$566,348                                     |
| 2010-11         | 0                                                                                 | 0                                                                                        | 2,070,771                                     |
| 2011-12         | 0                                                                                 | 0                                                                                        | 770,819                                       |
| 2012-13         | 0                                                                                 | 0                                                                                        | 677,855                                       |
| 2013-14         | 0                                                                                 | 0                                                                                        | 1,567,471                                     |
| 2014-15         | 0                                                                                 | 0                                                                                        | 483,921                                       |
| 2015-16         | 77,153                                                                            | 76,580                                                                                   | 1,063,000                                     |
| 2016-17         | 1,025,489                                                                         | 1,015,058                                                                                | 2,653,000                                     |
| 2017-18         | 1,755,102                                                                         | 1,727,774                                                                                | 2,130,000                                     |
| 2018-19         | 1,585,981                                                                         | 1,543,539                                                                                | 1,640,000                                     |
| <b>Total</b>    | <b>\$4,443,724</b>                                                                | <b>\$4,362,951</b>                                                                       | <b>\$13,623,185</b>                           |

## Notes:

- (1) Page 24, Column (6).
- (2) Page 58, Column (3).
- (3) Page 24, Column (1).

Monterey Bay Area Self Insurance Authority  
 General and Auto Liability Program

ULAE Projections and Calculation of Unpaid ULAE

(1) Selected ULAE Ratio: **8.7%**

|                                                                        | Case<br>Reserves with<br><u>Development</u> | "True"<br><u>IBNR</u> | <u>Total</u> |
|------------------------------------------------------------------------|---------------------------------------------|-----------------------|--------------|
| (2) ULAE Ratio:                                                        | 4.3%                                        | 8.7%                  |              |
| (3) Estimated Unpaid<br>Losses as of 12/31/18:                         | \$4,014,213                                 | \$1,004,595           | \$5,018,808  |
| (4) Estimated Unpaid<br>ULAE as of 12/31/18:                           | \$172,611                                   | \$87,180              | \$259,791    |
| (5) Discounted Unpaid<br>ULAE as of 12/31/18:<br>( 1.5% interest rate) |                                             |                       | \$255,115    |

We project that the 6/30/19 ULAE liability  
 will equal the 12/31/18 ULAE liability.

Notes:

- (1) Estimated by BAC.
- (2) "50-50 Rule."
- (3) Page 31, assuming 50% of IBNR is  
development on known claims.
- (4) (2) x [(3)].
- (5) (4) x [Page 58, Item ].

**Monterey Bay Area Self Insurance Authority**

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

**Fiscal Year End Exhibits**

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2019  
**Losses Limited to SIR, NET of \$10K Deductible**

| Program<br>Year | Estimated<br>Ultimate<br>Losses<br>(1) | Projected<br>Losses Paid<br>as of<br>6/30/19<br>(2) | Projected<br>Case<br>Reserves<br>6/30/19<br>(3) | Projected<br>Losses Reported<br>as of<br>6/30/19<br>(4) | Projected<br>IBNR<br>as of<br>6/30/19<br>(5) | Projected<br>Unpaid<br>Losses as of<br>6/30/19<br>(6) |
|-----------------|----------------------------------------|-----------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|
| 2009-10         | \$566,348                              | \$566,348                                           | \$0                                             | \$566,348                                               | \$0                                          | \$0                                                   |
| 2010-11         | 2,070,771                              | 2,070,771                                           | 0                                               | 2,070,771                                               | 0                                            | 0                                                     |
| 2011-12         | 770,819                                | 770,819                                             | 0                                               | 770,819                                                 | 0                                            | 0                                                     |
| 2012-13         | 677,855                                | 677,855                                             | 0                                               | 677,855                                                 | 0                                            | 0                                                     |
| 2013-14         | 1,567,471                              | 1,567,471                                           | 0                                               | 1,567,471                                               | 0                                            | 0                                                     |
| 2014-15         | 483,921                                | 483,921                                             | 0                                               | 483,921                                                 | 0                                            | 0                                                     |
| 2015-16         | 1,063,000                              | 985,847                                             | 38,045                                          | 1,023,893                                               | 39,107                                       | 77,153                                                |
| 2016-17         | 2,653,000                              | 1,627,511                                           | 783,516                                         | 2,411,027                                               | 241,973                                      | 1,025,489                                             |
| 2017-18         | 2,130,000                              | 374,898                                             | 1,249,642                                       | 1,624,539                                               | 505,461                                      | 1,755,102                                             |
| 2018-19         | 1,640,000                              | 54,019                                              | 565,047                                         | 619,066                                                 | 1,020,934                                    | 1,585,981                                             |
| <b>Total</b>    | <b>\$13,623,185</b>                    | <b>\$9,179,461</b>                                  | <b>\$2,636,250</b>                              | <b>\$11,815,711</b>                                     | <b>\$1,807,474</b>                           | <b>\$4,443,724</b>                                    |

## Notes:

(1) through (6) Page 26 entries minus Page 29 entries.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Estimated Unpaid Losses as of December 31, 2018  
**Losses Limited to SIR, NET of \$10K Deductible**

| Program<br>Year | Estimated<br>Ultimate<br>Losses<br>(1) | Losses Paid<br>as of<br>12/31/18<br>(2) | Case<br>Reserves<br>12/31/18<br>(3) | Losses Reported<br>as of<br>12/31/18<br>(4) | Estimated<br>IBNR<br>as of<br>12/31/18<br>(5) | Estimated<br>Unpaid<br>Losses as of<br>12/31/18<br>(6) |
|-----------------|----------------------------------------|-----------------------------------------|-------------------------------------|---------------------------------------------|-----------------------------------------------|--------------------------------------------------------|
| 2009-10         | \$566,348                              | \$566,348                               | \$0                                 | \$566,348                                   | \$0                                           | \$0                                                    |
| 2010-11         | 2,070,771                              | 2,070,771                               | 0                                   | 2,070,771                                   | 0                                             | 0                                                      |
| 2011-12         | 770,819                                | 770,819                                 | 0                                   | 770,819                                     | 0                                             | 0                                                      |
| 2012-13         | 677,855                                | 677,855                                 | 0                                   | 677,855                                     | 0                                             | 0                                                      |
| 2013-14         | 1,567,471                              | 1,567,471                               | 0                                   | 1,567,471                                   | 0                                             | 0                                                      |
| 2014-15         | 483,921                                | 483,920                                 | 0                                   | 483,920                                     | 0                                             | 0                                                      |
| 2015-16         | 1,063,000                              | 903,106                                 | 80,377                              | 983,483                                     | 79,517                                        | 159,894                                                |
| 2016-17         | 2,653,000                              | 784,409                                 | 1,567,218                           | 2,351,626                                   | 301,374                                       | 1,868,591                                              |
| 2017-18         | 2,130,000                              | 124,581                                 | 1,205,381                           | 1,329,962                                   | 800,038                                       | 2,005,419                                              |
| 2018-19         | 820,000                                | 0                                       | 70,500                              | 70,500                                      | 749,500                                       | 820,000                                                |
| <b>Total</b>    | <b>\$12,803,185</b>                    | <b>\$7,949,280</b>                      | <b>\$2,923,476</b>                  | <b>\$10,872,756</b>                         | <b>\$1,930,429</b>                            | <b>\$4,853,904</b>                                     |

## Notes:

(1) through (6) Page 28 entries minus Page 31 entries.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2019  
Losses Limited to SIR, Gross of \$10K Deductible

| Program<br>Year | Estimated<br>Ultimate<br>Losses<br>(1) | Projected<br>Losses Paid<br>as of<br>6/30/19<br>(2) | Projected<br>Case<br>Reserves<br>6/30/19<br>(3) | Projected<br>Losses Reported<br>as of<br>6/30/19<br>(4) | Projected<br>IBNR<br>as of<br>6/30/19<br>(5) | Projected<br>Unpaid<br>Losses as of<br>6/30/19<br>(6) |
|-----------------|----------------------------------------|-----------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|
| 2009-10         | \$729,487                              | \$729,487                                           | \$0                                             | \$729,487                                               | \$0                                          | \$0                                                   |
| 2010-11         | 2,239,948                              | 2,239,948                                           | 0                                               | 2,239,948                                               | 0                                            | 0                                                     |
| 2011-12         | 902,244                                | 902,244                                             | 0                                               | 902,244                                                 | 0                                            | 0                                                     |
| 2012-13         | 795,897                                | 795,897                                             | 0                                               | 795,897                                                 | 0                                            | 0                                                     |
| 2013-14         | 1,681,927                              | 1,681,927                                           | 0                                               | 1,681,927                                               | 0                                            | 0                                                     |
| 2014-15         | 588,191                                | 588,191                                             | 0                                               | 588,191                                                 | 0                                            | 0                                                     |
| 2015-16         | 1,240,000                              | 1,158,881                                           | 41,556                                          | 1,200,437                                               | 39,563                                       | 81,119                                                |
| 2016-17         | 2,850,000                              | 1,812,283                                           | 792,997                                         | 2,605,280                                               | 244,720                                      | 1,037,717                                             |
| 2017-18         | 2,340,000                              | 534,283                                             | 1,278,830                                       | 1,813,113                                               | 526,887                                      | 1,805,717                                             |
| 2018-19         | 1,770,000                              | 101,521                                             | 591,144                                         | 692,665                                                 | 1,077,335                                    | 1,668,479                                             |
| Total           | \$15,137,694                           | \$10,544,663                                        | \$2,704,526                                     | \$13,249,189                                            | \$1,888,505                                  | \$4,593,031                                           |

## Notes:

- (1) Page 33, Column (6).
- (2) Page 27, Column (3).
- (3) (4) - (2).
- (4) Page 27, Column (6).
- (5) (1) - (4).
- (6) (3) + (5).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Paid and Reported Losses between 1/1/19 and 6/30/19  
Losses Limited to SIR, Gross of \$10K Deductible

| Program<br>Year | Losses<br>Paid<br>as of<br>12/31/18<br><u>(1)</u> | Projected<br>Losses<br>Paid<br>1/1/19 -<br>6/30/19<br><u>(2)</u> | Projected<br>Losses<br>Paid<br>as of<br>6/30/19<br><u>(3)</u> | Losses<br>Reported<br>as of<br>12/31/18<br><u>(4)</u> | Projected<br>Losses<br>Reported<br>1/1/19 -<br>6/30/19<br><u>(5)</u> | Projected<br>Losses<br>Reported<br>as of<br>6/30/19<br><u>(6)</u> |
|-----------------|---------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------|
| 2009-10         | \$729,487                                         | \$0                                                              | \$729,487                                                     | \$729,487                                             | \$0                                                                  | \$729,487                                                         |
| 2010-11         | 2,239,948                                         | 0                                                                | 2,239,948                                                     | 2,239,948                                             | 0                                                                    | 2,239,948                                                         |
| 2011-12         | 902,244                                           | 0                                                                | 902,244                                                       | 902,244                                               | 0                                                                    | 902,244                                                           |
| 2012-13         | 795,897                                           | 0                                                                | 795,897                                                       | 795,897                                               | 0                                                                    | 795,897                                                           |
| 2013-14         | 1,681,927                                         | 0                                                                | 1,681,927                                                     | 1,681,927                                             | 0                                                                    | 1,681,927                                                         |
| 2014-15         | 588,191                                           | 0                                                                | 588,191                                                       | 588,191                                               | 0                                                                    | 588,191                                                           |
| 2015-16         | 1,072,083                                         | 86,798                                                           | 1,158,881                                                     | 1,159,571                                             | 40,866                                                               | 1,200,437                                                         |
| 2016-17         | 965,826                                           | 846,458                                                          | 1,812,283                                                     | 2,544,132                                             | 61,148                                                               | 2,605,280                                                         |
| 2017-18         | 243,372                                           | 290,911                                                          | 534,283                                                       | 1,500,467                                             | 312,645                                                              | 1,813,113                                                         |
| 2018-19         | 14,912                                            | 86,609                                                           | 101,521                                                       | 101,640                                               | 591,025                                                              | 692,665                                                           |
| <b>Total</b>    | <b>\$9,233,886</b>                                | <b>\$1,310,776</b>                                               | <b>\$10,544,663</b>                                           | <b>\$12,243,504</b>                                   | <b>\$1,005,685</b>                                                   | <b>\$13,249,189</b>                                               |

## Notes:

- (1) Page 35, Column (1).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 34, Column (1).
- (5) Projected by BAC.
- (6) (4) + (5).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Estimated Unpaid Losses as of December 31, 2018  
Losses Limited to SIR, Gross of \$10K Deductible

| Program<br>Year | Estimated<br>Ultimate<br>Losses<br>(1) | Losses Paid<br>as of<br>12/31/18<br>(2) | Case<br>Reserves<br>12/31/18<br>(3) | Losses Reported<br>as of<br>12/31/18<br>(4) | Estimated<br>IBNR<br>as of<br>12/31/18<br>(5) | Estimated<br>Unpaid<br>Losses as of<br>12/31/18<br>(6) |
|-----------------|----------------------------------------|-----------------------------------------|-------------------------------------|---------------------------------------------|-----------------------------------------------|--------------------------------------------------------|
| 2009-10         | \$729,487                              | \$729,487                               | \$0                                 | \$729,487                                   | \$0                                           | \$0                                                    |
| 2010-11         | 2,239,948                              | 2,239,948                               | 0                                   | 2,239,948                                   | 0                                             | 0                                                      |
| 2011-12         | 902,244                                | 902,244                                 | 0                                   | 902,244                                     | 0                                             | 0                                                      |
| 2012-13         | 795,897                                | 795,897                                 | 0                                   | 795,897                                     | 0                                             | 0                                                      |
| 2013-14         | 1,681,927                              | 1,681,927                               | 0                                   | 1,681,927                                   | 0                                             | 0                                                      |
| 2014-15         | 588,191                                | 588,191                                 | 0                                   | 588,191                                     | 0                                             | 0                                                      |
| 2015-16         | 1,240,000                              | 1,072,083                               | 87,488                              | 1,159,571                                   | 80,429                                        | 167,917                                                |
| 2016-17         | 2,850,000                              | 965,826                                 | 1,578,306                           | 2,544,132                                   | 305,868                                       | 1,884,174                                              |
| 2017-18         | 2,340,000                              | 243,372                                 | 1,257,095                           | 1,500,467                                   | 839,533                                       | 2,096,628                                              |
| 2018-19         | 885,000                                | 14,912                                  | 86,728                              | 101,640                                     | 783,360                                       | 870,088                                                |
| Total           | \$14,252,694                           | \$9,233,886                             | \$3,009,618                         | \$12,243,504                                | \$2,009,190                                   | \$5,018,808                                            |

## Notes:

- (1) Page 33, Column (6).  
2018-19 entry adjusted for incomplete year through 12/31/18.
- (2) Page 35, Column (1).
- (3) (4) - (2).
- (4) Page 34, Column (1).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Unpaid Deductibles as of June 30, 2019  
Losses Limited to \$10K Deductible

| Program<br>Year | Estimated<br>Ultimate<br>Deductibles<br>(1) | Projected<br>Ded Paid<br>as of<br>6/30/19<br>(2) | Projected<br>Case<br>Reserves<br>6/30/19<br>(3) | Projected<br>Ded Reported<br>as of<br>6/30/19<br>(4) | Projected<br>Deductible<br>IBNR as of<br>6/30/19<br>(5) | Projected<br>Deductible<br>Losses as of<br>6/30/19<br>(6) |
|-----------------|---------------------------------------------|--------------------------------------------------|-------------------------------------------------|------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------|
| 2009-10         | \$163,139                                   | \$163,139                                        | \$0                                             | \$163,139                                            | \$0                                                     | \$0                                                       |
| 2010-11         | 169,177                                     | 169,177                                          | 0                                               | 169,177                                              | 0                                                       | 0                                                         |
| 2011-12         | 131,425                                     | 131,425                                          | 0                                               | 131,425                                              | 0                                                       | 0                                                         |
| 2012-13         | 118,042                                     | 118,042                                          | 0                                               | 118,042                                              | 0                                                       | 0                                                         |
| 2013-14         | 114,456                                     | 114,456                                          | 0                                               | 114,456                                              | 0                                                       | 0                                                         |
| 2014-15         | 104,270                                     | 104,270                                          | 0                                               | 104,270                                              | 0                                                       | 0                                                         |
| 2015-16         | 177,000                                     | 173,034                                          | 3,511                                           | 176,545                                              | 455                                                     | 3,966                                                     |
| 2016-17         | 197,000                                     | 184,772                                          | 9,481                                           | 194,253                                              | 2,747                                                   | 12,228                                                    |
| 2017-18         | 210,000                                     | 159,385                                          | 29,188                                          | 188,573                                              | 21,427                                                  | 50,615                                                    |
| 2018-19         | 130,000                                     | 47,502                                           | 26,097                                          | 73,598                                               | 56,402                                                  | 82,498                                                    |
| Total           | \$1,514,509                                 | \$1,365,202                                      | \$68,277                                        | \$1,433,478                                          | \$81,031                                                | \$149,308                                                 |

## Notes:

- (1) Page 62, Column (3).
- (2) Page 30, Column (3).
- (3) (4) - (2).
- (4) Page 30, Column (6).
- (5) (1) - (4).
- (6) (3) + (5).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Paid and Reported Deductibles between 1/1/19 and 6/30/19  
Losses Limited to \$10K Deductible

| Program<br>Year | Ded<br>Paid<br>as of<br>12/31/18<br>(1) | Projected<br>Losses<br>Paid<br>1/1/19 -<br>6/30/19<br>(2) | Projected<br>Losses<br>Paid<br>as of<br>6/30/19<br>(3) | Losses<br>Reported<br>as of<br>12/31/18<br>(4) | Projected<br>Losses<br>Reported<br>1/1/19 -<br>6/30/19<br>(5) | Projected<br>Losses<br>Reported<br>as of<br>6/30/19<br>(6) |
|-----------------|-----------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|
| 2009-10         | \$163,139                               | \$0                                                       | \$163,139                                              | \$163,139                                      | \$0                                                           | \$163,139                                                  |
| 2010-11         | 169,177                                 | 0                                                         | 169,177                                                | 169,177                                        | 0                                                             | 169,177                                                    |
| 2011-12         | 131,425                                 | 0                                                         | 131,425                                                | 131,425                                        | 0                                                             | 131,425                                                    |
| 2012-13         | 118,042                                 | 0                                                         | 118,042                                                | 118,042                                        | 0                                                             | 118,042                                                    |
| 2013-14         | 114,456                                 | 0                                                         | 114,456                                                | 114,456                                        | 0                                                             | 114,456                                                    |
| 2014-15         | 104,270                                 | 0                                                         | 104,270                                                | 104,270                                        | 0                                                             | 104,270                                                    |
| 2015-16         | 168,977                                 | 4,057                                                     | 173,034                                                | 176,088                                        | 457                                                           | 176,545                                                    |
| 2016-17         | 181,417                                 | 3,355                                                     | 184,772                                                | 192,506                                        | 1,747                                                         | 194,253                                                    |
| 2017-18         | 118,791                                 | 40,594                                                    | 159,385                                                | 170,505                                        | 18,068                                                        | 188,573                                                    |
| 2018-19         | 14,912                                  | 32,590                                                    | 47,502                                                 | 31,140                                         | 42,458                                                        | 73,598                                                     |
| Total           | \$1,284,606                             | \$80,596                                                  | \$1,365,202                                            | \$1,370,748                                    | \$62,730                                                      | \$1,433,478                                                |

## Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Estimated Unpaid Deductibles as of December 31, 2018  
Losses Limited to \$10K Deductible

| Program<br>Year | Estimated<br>Ultimate<br>Deductibles<br><u>(1)</u> | Ded Paid<br>as of<br>12/31/18<br><u>(2)</u> | Case<br>Reserves<br>12/31/18<br><u>(3)</u> | Ded Reported<br>as of<br>12/31/18<br><u>(4)</u> | Estimated<br>Deductible<br>IBNR as of<br>12/31/18<br><u>(5)</u> | Estimated<br>Deductible<br>Losses as of<br>12/31/18<br><u>(6)</u> |
|-----------------|----------------------------------------------------|---------------------------------------------|--------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------|
| 2009-10         | \$163,139                                          | \$163,139                                   | \$0                                        | \$163,139                                       | \$0                                                             | \$0                                                               |
| 2010-11         | 169,177                                            | 169,177                                     | 0                                          | 169,177                                         | 0                                                               | 0                                                                 |
| 2011-12         | 131,425                                            | 131,425                                     | 0                                          | 131,425                                         | 0                                                               | 0                                                                 |
| 2012-13         | 118,042                                            | 118,042                                     | 0                                          | 118,042                                         | 0                                                               | 0                                                                 |
| 2013-14         | 114,456                                            | 114,456                                     | 0                                          | 114,456                                         | 0                                                               | 0                                                                 |
| 2014-15         | 104,270                                            | 104,270                                     | 0                                          | 104,270                                         | 0                                                               | 0                                                                 |
| 2015-16         | 177,000                                            | 168,977                                     | 7,111                                      | 176,088                                         | 912                                                             | 8,023                                                             |
| 2016-17         | 197,000                                            | 181,417                                     | 11,089                                     | 192,506                                         | 4,494                                                           | 15,583                                                            |
| 2017-18         | 210,000                                            | 118,791                                     | 51,714                                     | 170,505                                         | 39,495                                                          | 91,209                                                            |
| 2018-19         | 65,000                                             | 14,912                                      | 16,228                                     | 31,140                                          | 33,860                                                          | 50,088                                                            |
| Total           | \$1,449,509                                        | \$1,284,606                                 | \$86,142                                   | \$1,370,748                                     | \$78,761                                                        | \$164,903                                                         |

## Notes:

- (1) Page 62, Column (3).  
2018-19 adjusted for partial year through 12/31/18.
- (2) Provided by Risk Management Services.
- (3) (4) - (2).
- (4) Page 63, Column (1).
- (5) (1) - (4).
- (6) (1) - (2).

**Monterey Bay Area Self Insurance Authority**

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

**Loss Projection Exhibits**

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Reported<br>Projection<br>(1) | Paid<br>Projection<br>(2) | IBNR to<br>Case Reserves<br>Ratio<br>(3) | B-F<br>Method<br>Using<br>Reported<br>(4) | Frequency<br>Times<br>Severity<br>(5) | Selected<br>Ultimate<br>Losses<br>(6) |
|-----------------|-------------------------------|---------------------------|------------------------------------------|-------------------------------------------|---------------------------------------|---------------------------------------|
| 2009-10         | \$729,487                     | \$729,487                 | \$729,487                                | \$729,487                                 | \$979,474                             | \$729,487                             |
| 2010-11         | 2,239,948                     | 2,239,948                 | 2,239,948                                | 2,239,948                                 | 1,288,297                             | 2,239,948                             |
| 2011-12         | 902,244                       | 902,697                   | 902,244                                  | 902,244                                   | 1,411,339                             | 902,244                               |
| 2012-13         | 795,897                       | 796,062                   | 795,897                                  | 795,897                                   | 1,308,741                             | 795,897                               |
| 2013-14         | 1,693,084                     | 1,730,834                 | 1,681,927                                | 1,692,323                                 | 1,241,700                             | 1,681,927                             |
| 2014-15         | 601,915                       | 612,466                   | 588,191                                  | 623,468                                   | 1,506,247                             | 588,191                               |
| 2015-16         | 1,228,773                     | 1,236,827                 | 1,223,700                                | 1,248,190                                 | 1,740,053                             | 1,240,000                             |
| 2016-17         | 3,119,155                     | 2,041,029                 | 3,393,261                                | 2,844,588                                 | 2,178,824                             | 2,850,000                             |
| 2017-18         | 2,971,935                     | 1,835,173                 | 3,172,404                                | 2,334,583                                 | 1,729,651                             | 2,340,000                             |
| 2018-19         | 2,395,408                     | 3,515,008                 | 2,276,340                                | 1,767,592                                 | 1,785,000                             | 1,770,000                             |
| Total           | \$16,677,846                  | \$15,639,531              | \$17,003,399                             | \$15,178,320                              | \$15,169,326                          | \$15,137,694                          |

## Notes:

- (1) Page 34, Column (3).
- (2) Page 35, Column (3).
- (3) Page 36, Column (6).
- (4) Page 37, Column (6).
- (5) Page 41, Column (4).
- (6) Selected on the basis of (1) - (5).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Cumulative<br>Reported<br>Losses as of<br>12/31/18<br><u>(1)</u> | Reported<br>Development<br>Factor<br>as of<br>12/31/18<br><u>(2)</u> | Projected<br>Ultimate<br>Losses<br><u>(3)</u> |
|-----------------|------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------|
| 2009-10         | \$729,487                                                        | 1.000                                                                | \$729,487                                     |
| 2010-11         | 2,239,948                                                        | 1.000                                                                | 2,239,948                                     |
| 2011-12         | 902,244                                                          | 1.000                                                                | 902,244                                       |
| 2012-13         | 795,897                                                          | 1.000                                                                | 795,897                                       |
| 2013-14         | 1,681,927                                                        | 1.007                                                                | 1,693,084                                     |
| 2014-15         | 588,191                                                          | 1.023                                                                | 601,915                                       |
| 2015-16         | 1,159,571                                                        | 1.060                                                                | 1,228,773                                     |
| 2016-17         | 2,544,132                                                        | 1.226                                                                | 3,119,155                                     |
| 2017-18         | 1,500,467                                                        | 1.981                                                                | 2,971,935                                     |
| 2018-19         | 101,640                                                          | 23.568                                                               | 2,395,408                                     |
| Total           | \$12,243,504                                                     |                                                                      | \$16,677,846                                  |

## Notes:

- (1) Provided by Risk Management Services.
- (2) Page 66.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Cumulative<br>Paid<br>Losses as of<br>12/31/18<br>(1) | Paid<br>Development<br>Factor<br>as of<br>12/31/18<br>(2) | Projected<br>Ultimate<br>Losses<br>(3) |
|-----------------|-------------------------------------------------------|-----------------------------------------------------------|----------------------------------------|
| 2009-10         | \$729,487                                             | 1.000                                                     | \$729,487                              |
| 2010-11         | 2,239,948                                             | 1.000                                                     | 2,239,948                              |
| 2011-12         | 902,244                                               | 1.001                                                     | 902,697                                |
| 2012-13         | 795,897                                               | 1.000                                                     | 796,062                                |
| 2013-14         | 1,681,927                                             | 1.029                                                     | 1,730,834                              |
| 2014-15         | 588,191                                               | 1.041                                                     | 612,466                                |
| 2015-16         | 1,072,083                                             | 1.154                                                     | 1,236,827                              |
| 2016-17         | 965,826                                               | 2.113                                                     | 2,041,029                              |
| 2017-18         | 243,372                                               | 7.541                                                     | 1,835,173                              |
| 2018-19         | 14,912                                                | 235.719                                                   | 3,515,008                              |
| Total           | \$9,233,886                                           |                                                           | \$15,639,531                           |

## Notes:

- (1) Provided by Risk Management Services.
- (2) Page 67.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Reported<br>Development<br>Factor<br>as of<br>12/31/18<br>(1) | Paid<br>Development<br>Factor<br>as of<br>12/31/18<br>(2) | IBNR<br>to Case<br>Reserves<br>Ratio<br>(3) | Case<br>Reserves<br>12/31/18<br>(4) | Estimated<br>IBNR<br>as of<br>12/31/18<br>(5) | Estimated<br>Ultimate<br>Losses<br>(6) |
|-----------------|---------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------|-------------------------------------|-----------------------------------------------|----------------------------------------|
| 2009-10         | 1.000                                                         | 1.000                                                     | 0.000                                       | \$0                                 | \$0                                           | \$729,487                              |
| 2010-11         | 1.000                                                         | 1.000                                                     | 0.000                                       | 0                                   | 0                                             | 2,239,948                              |
| 2011-12         | 1.000                                                         | 1.001                                                     | 0.000                                       | 0                                   | 0                                             | 902,244                                |
| 2012-13         | 1.000                                                         | 1.000                                                     | 0.000                                       | 0                                   | 0                                             | 795,897                                |
| 2013-14         | 1.007                                                         | 1.029                                                     | 0.304                                       | 0                                   | 0                                             | 1,681,927                              |
| 2014-15         | 1.023                                                         | 1.041                                                     | 1.355                                       | 0                                   | 0                                             | 588,191                                |
| 2015-16         | 1.060                                                         | 1.154                                                     | 0.733                                       | 87,488                              | 64,129                                        | 1,223,700                              |
| 2016-17         | 1.226                                                         | 2.113                                                     | 0.538                                       | 1,578,306                           | 849,129                                       | 3,393,261                              |
| 2017-18         | 1.981                                                         | 7.541                                                     | 1.330                                       | 1,257,095                           | 1,671,937                                     | 3,172,404                              |
| 2018-19         | 23.568                                                        | 235.719                                                   | 25.075                                      | 86,728                              | 2,174,700                                     | 2,276,340                              |
| Total           |                                                               |                                                           |                                             | \$3,009,618                         | \$4,759,895                                   | \$17,003,399                           |

## Notes:

- (1) Page 34, Column (2).
- (2) Page 35, Column (2).
- (3)  $[(1) - 1.000] \times (2) / [(2) - (1)]$ .
- (4) Page 34, Column (1) - Page 35, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 34, Column (1).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | <i>A Priori</i><br>Ultimate<br>Losses<br>(1) | Cumulative<br>Reported Loss<br>Development<br>Factors<br>(2) | Percentage<br>of Losses<br>Not Yet<br>Reported<br>(3) | Expected<br>Unreported<br>Losses<br>(4) | Losses<br>Reported<br>as of<br>12/31/18<br>(5) | Estimated<br>Ultimate<br>Losses<br>(6) |
|-----------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------|------------------------------------------------|----------------------------------------|
| 2009-10         | \$1,309,460                                  | 1.000                                                        | 0.0%                                                  | \$0                                     | \$729,487                                      | \$729,487                              |
| 2010-11         | 1,351,195                                    | 1.000                                                        | 0.0%                                                  | 0                                       | 2,239,948                                      | 2,239,948                              |
| 2011-12         | 1,394,670                                    | 1.000                                                        | 0.0%                                                  | 0                                       | 902,244                                        | 902,244                                |
| 2012-13         | 1,439,884                                    | 1.000                                                        | 0.0%                                                  | 0                                       | 795,897                                        | 795,897                                |
| 2013-14         | 1,485,098                                    | 1.007                                                        | 0.7%                                                  | 10,396                                  | 1,681,927                                      | 1,692,323                              |
| 2014-15         | 1,533,789                                    | 1.023                                                        | 2.3%                                                  | 35,277                                  | 588,191                                        | 623,468                                |
| 2015-16         | 1,582,481                                    | 1.060                                                        | 5.6%                                                  | 88,619                                  | 1,159,571                                      | 1,248,190                              |
| 2016-17         | 1,632,912                                    | 1.226                                                        | 18.4%                                                 | 300,456                                 | 2,544,132                                      | 2,844,588                              |
| 2017-18         | 1,685,082                                    | 1.981                                                        | 49.5%                                                 | 834,116                                 | 1,500,467                                      | 2,334,583                              |
| 2018-19         | 1,738,990                                    | 23.568                                                       | 95.8%                                                 | 1,665,952                               | 101,640                                        | 1,767,592                              |
|                 | \$15,153,561                                 |                                                              |                                                       | \$2,934,816                             | \$12,243,504                                   | \$15,178,320                           |

## Notes:

- (1) Page 38, Column (3).
- (2) Page 34, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 34, Column (1).
- (6)  $(4) + (5)$ .

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | <i>A Priori</i><br>2018-19<br>Loss<br>(1) | Factor<br>to Remove<br>Trend<br>(2) | <i>A Priori</i><br>Ultimate<br>Losses<br>(3) |
|-----------------|-------------------------------------------|-------------------------------------|----------------------------------------------|
| 2009-10         | \$1,738,990                               | 0.753                               | \$1,309,460                                  |
| 2010-11         | 1,738,990                                 | 0.777                               | 1,351,195                                    |
| 2011-12         | 1,738,990                                 | 0.802                               | 1,394,670                                    |
| 2012-13         | 1,738,990                                 | 0.828                               | 1,439,884                                    |
| 2013-14         | 1,738,990                                 | 0.854                               | 1,485,098                                    |
| 2014-15         | 1,738,990                                 | 0.882                               | 1,533,789                                    |
| 2015-16         | 1,738,990                                 | 0.910                               | 1,582,481                                    |
| 2016-17         | 1,738,990                                 | 0.939                               | 1,632,912                                    |
| 2017-18         | 1,738,990                                 | 0.969                               | 1,685,082                                    |
| 2018-19         | 1,738,990                                 | 1.000                               | 1,738,990                                    |
| Total           |                                           |                                     | \$15,153,561                                 |

## Notes:

- (1) Page 39, Average of Column (3).  
(2) 1.000 / [Page 39, Column (2)].  
(3) (1) x (2).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | <i>A Priori</i><br>Ultimate<br>Losses<br>(1) | Estimated<br>Pure<br>Premium<br>Trend<br>(2) | Constant<br>Dollar<br>Ultimate<br>Losses<br>(3) |
|-----------------|----------------------------------------------|----------------------------------------------|-------------------------------------------------|
| 2009-10         | \$729,487                                    | 1.328                                        | \$968,578                                       |
| 2010-11         | 2,239,948                                    | 1.287                                        | 2,881,878                                       |
| 2011-12         | 902,244                                      | 1.247                                        | 1,124,817                                       |
| 2012-13         | 795,897                                      | 1.208                                        | 961,468                                         |
| 2013-14         | 1,681,927                                    | 1.171                                        | 1,968,819                                       |
| 2014-15         | 588,191                                      | 1.134                                        | 667,171                                         |
| 2015-16         | 1,232,629                                    | 1.099                                        | 1,354,788                                       |
| 2016-17         | 2,723,319                                    | 1.065                                        | 2,900,400                                       |
| 2017-18         | 2,735,459                                    | 1.032                                        | 2,822,994                                       |
| 2018-19         | 2,497,173                                    | 1.000                                        | 2,497,173                                       |
| Average         |                                              |                                              | \$1,814,809                                     |
| 09/10-17/18     |                                              |                                              | \$1,738,990                                     |
|                 |                                              | (4) A Priori 2018-19 Losses:                 | \$1,738,990                                     |

## Notes:

- (1) Page 40, Column (3).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Average of (3) excluding 2018-19.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Reported<br>Loss<br>Projection<br>(1) | Paid<br>Loss<br>Projection<br>(2) | <i>A Priori</i><br>Selection<br>(3) |
|-----------------|---------------------------------------|-----------------------------------|-------------------------------------|
| 2009-10         | \$729,487                             | \$729,487                         | \$729,487                           |
| 2010-11         | 2,239,948                             | 2,239,948                         | 2,239,948                           |
| 2011-12         | 902,244                               | 902,697                           | 902,244                             |
| 2012-13         | 795,897                               | 796,062                           | 795,897                             |
| 2013-14         | 1,693,084                             | 1,730,834                         | 1,681,927                           |
| 2014-15         | 601,915                               | 612,466                           | 588,191                             |
| 2015-16         | 1,228,773                             | 1,236,827                         | 1,232,629                           |
| 2016-17         | 3,119,155                             | 2,041,029                         | 2,723,319                           |
| 2017-18         | 2,971,935                             | 1,835,173                         | 2,735,459                           |
| 2018-19         | 2,395,408                             | 3,515,008                         | 2,497,173                           |
| Total           | \$16,677,846                          | \$15,639,531                      | \$16,126,274                        |

## Notes:

- (1) Page 34, Column (3).
- (2) Page 35, Column (3).
- (3) Selected on the basis of (1) and (2).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Selected<br>Claim<br>Severity<br>(1) | Factor<br>to Remove<br>Trend<br>(2) | Selected<br>Ultimate<br>Claims<br>(3) | Estimated<br>Ultimate<br>Losses<br>(4) |
|-----------------|--------------------------------------|-------------------------------------|---------------------------------------|----------------------------------------|
| 2009-10         | \$25,500                             | 0.753                               | 51                                    | \$979,474                              |
| 2010-11         | 25,500                               | 0.777                               | 65                                    | 1,288,297                              |
| 2011-12         | 25,500                               | 0.802                               | 69                                    | 1,411,339                              |
| 2012-13         | 25,500                               | 0.828                               | 62                                    | 1,308,741                              |
| 2013-14         | 25,500                               | 0.854                               | 57                                    | 1,241,700                              |
| 2014-15         | 25,500                               | 0.882                               | 67                                    | 1,506,247                              |
| 2015-16         | 25,500                               | 0.910                               | 75                                    | 1,740,053                              |
| 2016-17         | 25,500                               | 0.939                               | 91                                    | 2,178,824                              |
| 2017-18         | 25,500                               | 0.969                               | 70                                    | 1,729,651                              |
| 2018-19         | 25,500                               | 1.000                               | 70                                    | 1,785,000                              |
| Total           |                                      |                                     |                                       | \$15,169,326                           |

## Notes:

- (1) Page 42, Item (5).
- (2)  $1.000 / [\text{Page 42, Column (2)}]$ .
- (3) Page 43, Column (3).
- (4)  $(1) \times (2) \times (3)$ .

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | <i>A Priori</i><br>Ultimate<br>Losses<br>(1) | Estimated<br>Severity<br>Trend<br>(2) | Selected<br>Claim<br>Count<br>(3) | Trended<br>Claim<br>Severity<br>(4) |
|-----------------|----------------------------------------------|---------------------------------------|-----------------------------------|-------------------------------------|
| 2009-10         | \$729,487                                    | 1.328                                 | 51                                | \$18,992                            |
| 2010-11         | 2,239,948                                    | 1.287                                 | 65                                | 44,337                              |
| 2011-12         | 902,244                                      | 1.247                                 | 69                                | 16,302                              |
| 2012-13         | 795,897                                      | 1.208                                 | 62                                | 15,508                              |
| 2013-14         | 1,681,927                                    | 1.171                                 | 57                                | 34,541                              |
| 2014-15         | 588,191                                      | 1.134                                 | 67                                | 9,958                               |
| 2015-16         | 1,232,629                                    | 1.099                                 | 75                                | 18,064                              |
| 2016-17         | 2,723,319                                    | 1.065                                 | 91                                | 31,873                              |
| 2017-18         | 2,735,459                                    | 1.032                                 | 70                                | 40,328                              |
| 2018-19         | 2,497,173                                    | 1.000                                 | 70                                | 35,674                              |
| Total           | \$16,126,274                                 |                                       | 677                               | \$26,558                            |
| 09/10-17/18     | \$13,629,101                                 |                                       | 607                               | \$25,545                            |
|                 |                                              |                                       | (5) Selected Severity:            | \$25,500                            |

## Notes:

- (1) Page 40, Column (3).
- (2) Estimated by BAC.
- (3) Page 43, Column (3).
- (4)  $(1) \times (2) / (3)$ .
- (5) Selected on the basis of (4).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Selected Claim Counts

| Program<br>Year | Reported<br>Claim Count<br>Projection<br>(1) | Bornhuetter-<br>Ferguson<br>Method<br>(2) | Selected<br>Claim<br>Count<br>(3) |
|-----------------|----------------------------------------------|-------------------------------------------|-----------------------------------|
| 2009-10         | 51                                           |                                           | 51                                |
| 2010-11         | 65                                           |                                           | 65                                |
| 2011-12         | 69                                           |                                           | 69                                |
| 2012-13         | 62                                           |                                           | 62                                |
| 2013-14         | 57                                           |                                           | 57                                |
| 2014-15         | 67                                           |                                           | 67                                |
| 2015-16         | 75                                           |                                           | 75                                |
| 2016-17         | 91                                           |                                           | 91                                |
| 2017-18         | 70                                           |                                           | 70                                |
| 2018-19         | 76                                           | 70                                        | 70                                |
| Total           | 683                                          |                                           | 677                               |

## Notes:

- (1) Page 44, Column (3).
- (2) Page 45, Column (6).
- (3) Selected on the basis of (1) and (2).

Monterey Bay Area Self Insurance Authority  
 General and Auto Liability Program

Projection of Ultimate Claim Counts  
 Projection of Reported Claims

| Program<br>Year        | Total<br>Claims<br>Reported<br>12/31/18<br><u>(1)</u> | Development<br>Factors<br>as of<br>12/31/18<br><u>(2)</u> | Projected<br>Ultimate<br>Claims<br><u>(3)</u> |
|------------------------|-------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------|
| 2009-10                | 51                                                    | 1.000                                                     | 51                                            |
| 2010-11                | 65                                                    | 1.000                                                     | 65                                            |
| 2011-12                | 69                                                    | 1.000                                                     | 69                                            |
| 2012-13                | 62                                                    | 1.000                                                     | 62                                            |
| 2013-14                | 57                                                    | 1.000                                                     | 57                                            |
| 2014-15                | 67                                                    | 1.000                                                     | 67                                            |
| 2015-16                | 75                                                    | 1.000                                                     | 75                                            |
| 2016-17                | 90                                                    | 1.011                                                     | 91                                            |
| 2017-18                | 67                                                    | 1.044                                                     | 70                                            |
| 2018-19                | 22                                                    | 3.458                                                     | 76                                            |
| Average                |                                                       |                                                           | 68                                            |
| 09/10-17/18<br>Average |                                                       |                                                           | 67                                            |

Notes:

- (1) Provided by Risk Management Services.
- (2) Page 66.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projection of Ultimate Claim Counts  
Bornhuetter-Ferguson Method

| Program<br>Year | A Priori<br>Claim<br>Count<br>(1) | Claim<br>Development<br>Factor<br>(2) | Estimated<br>Percentage<br>of Claims<br>Unreported<br>(3) | Estimated<br>Unreported<br>Claims<br>(4) | Reported<br>Claims<br>as of<br>12/31/18<br>(5) | Projected<br>Ultimate<br>Claims<br>(6) |
|-----------------|-----------------------------------|---------------------------------------|-----------------------------------------------------------|------------------------------------------|------------------------------------------------|----------------------------------------|
| 2018-19         | 67                                | 3.458                                 | 71.1%                                                     | 48                                       | 22                                             | 70                                     |

Notes:

- (1) Page 44, Column (3), average 2009-10 to 2017-18.
- (2) Page 44, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 44, Column (1).
- (6)  $(4) + (5)$ .

**Monterey Bay Area Self Insurance Authority**

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

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Reported<br>Projection<br>(1) | Paid<br>Projection<br>(2) | IBNR to<br>Case Reserves<br>Ratio<br>(3) | B-F<br>Method<br>Using<br>Reported<br>(4) | B-F<br>Method<br>Using<br>Paid<br>(5) | Selected<br>Ultimate<br>Losses<br>(6) |
|-----------------|-------------------------------|---------------------------|------------------------------------------|-------------------------------------------|---------------------------------------|---------------------------------------|
| 2009-10         | \$699,177                     | \$699,177                 | \$699,177                                | \$699,177                                 | \$699,177                             | \$699,177                             |
| 2010-11         | 1,216,602                     | 1,216,602                 | 1,216,602                                | 1,216,602                                 | 1,216,602                             | 1,216,602                             |
| 2011-12         | 600,483                       | 600,598                   | 600,483                                  | 600,483                                   | 600,483                               | 600,483                               |
| 2012-13         | 724,089                       | 724,157                   | 724,089                                  | 724,089                                   | 724,089                               | 724,089                               |
| 2013-14         | 931,927                       | 944,903                   | 931,927                                  | 931,927                                   | 941,014                               | 931,927                               |
| 2014-15         | 443,791                       | 453,142                   | 443,328                                  | 443,977                                   | 457,602                               | 443,328                               |
| 2015-16         | 1,061,492                     | 1,064,542                 | 1,061,369                                | 1,059,621                                 | 1,027,204                             | 1,070,000                             |
| 2016-17         | 1,796,643                     | 1,514,436                 | 1,804,039                                | 1,773,753                                 | 1,129,017                             | 1,800,000                             |
| 2017-18         | 2,150,499                     | 1,416,600                 | 2,223,297                                | 1,695,627                                 | 778,447                               | 1,880,000                             |
| 2018-19         | 1,677,669                     | 2,448,051                 | 1,596,741                                | 707,715                                   | 656,487                               | 710,000                               |
| <b>Total</b>    | <b>\$11,302,372</b>           | <b>\$11,082,208</b>       | <b>\$11,301,052</b>                      | <b>\$9,852,971</b>                        | <b>\$8,230,121</b>                    | <b>\$10,075,606</b>                   |

Notes:

- (1) Page 48, Column (3).
- (2) Page 49, Column (3).
- (3) Page 50, Column (6).
- (4) Page 51, Column (6).
- (5) Page 52, Column (6).
- (6) Selected on the basis of (1) - (5).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Cumulative<br>Reported<br>Losses as of<br>12/31/18<br><u>(1)</u> | Reported<br>Development<br>Factor<br>as of<br>12/31/18<br><u>(2)</u> | Projected<br>Ultimate<br>Losses<br><u>(3)</u> |
|-----------------|------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------|
| 2009-10         | \$699,177                                                        | 1.000                                                                | \$699,177                                     |
| 2010-11         | 1,216,602                                                        | 1.000                                                                | 1,216,602                                     |
| 2011-12         | 600,483                                                          | 1.000                                                                | 600,483                                       |
| 2012-13         | 724,089                                                          | 1.000                                                                | 724,089                                       |
| 2013-14         | 931,927                                                          | 1.000                                                                | 931,927                                       |
| 2014-15         | 443,328                                                          | 1.001                                                                | 443,791                                       |
| 2015-16         | 1,056,382                                                        | 1.005                                                                | 1,061,492                                     |
| 2016-17         | 1,760,812                                                        | 1.020                                                                | 1,796,643                                     |
| 2017-18         | 1,500,467                                                        | 1.433                                                                | 2,150,499                                     |
| 2018-19         | 101,640                                                          | 16.506                                                               | 1,677,669                                     |
| Total           | \$9,034,907                                                      |                                                                      | \$11,302,372                                  |

Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Cumulative<br>Paid<br>Losses as of<br>12/31/18<br>(1) | Paid<br>Development<br>Factor<br>as of<br>12/31/18<br>(2) | Projected<br>Ultimate<br>Losses<br>(3) |
|-----------------|-------------------------------------------------------|-----------------------------------------------------------|----------------------------------------|
| 2009-10         | \$699,177                                             | 1.000                                                     | \$699,177                              |
| 2010-11         | 1,216,602                                             | 1.000                                                     | 1,216,602                              |
| 2011-12         | 600,483                                               | 1.000                                                     | 600,598                                |
| 2012-13         | 724,089                                               | 1.000                                                     | 724,157                                |
| 2013-14         | 931,927                                               | 1.014                                                     | 944,903                                |
| 2014-15         | 443,328                                               | 1.022                                                     | 453,142                                |
| 2015-16         | 968,894                                               | 1.099                                                     | 1,064,542                              |
| 2016-17         | 841,088                                               | 1.801                                                     | 1,514,436                              |
| 2017-18         | 243,372                                               | 5.821                                                     | 1,416,600                              |
| 2018-19         | 14,912                                                | 164.168                                                   | 2,448,051                              |
| Total           | \$6,683,871                                           |                                                           | \$11,082,208                           |

Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Reported<br>LDF<br>(1) | Paid<br>LDF<br>(2) | IBNR<br>to Case<br>Reserves<br>Ratio<br>(3) | Case<br>Reserves<br>as of 12/31/18<br>(4) | Estimated<br>IBNR<br>as of<br>as of 12/31/18<br>(5) | Estimated<br>Ultimate<br>Losses<br>(6) |
|-----------------|------------------------|--------------------|---------------------------------------------|-------------------------------------------|-----------------------------------------------------|----------------------------------------|
| 2009-10         | 1.000                  | 1.000              | 0.000                                       | \$0                                       | \$0                                                 | \$699,177                              |
| 2010-11         | 1.000                  | 1.000              | 0.000                                       | 0                                         | 0                                                   | 1,216,602                              |
| 2011-12         | 1.000                  | 1.000              | 0.000                                       | 0                                         | 0                                                   | 600,483                                |
| 2012-13         | 1.000                  | 1.000              | 0.000                                       | 0                                         | 0                                                   | 724,089                                |
| 2013-14         | 1.000                  | 1.014              | 0.000                                       | 0                                         | 0                                                   | 931,927                                |
| 2014-15         | 1.001                  | 1.022              | 0.051                                       | 0                                         | 0                                                   | 443,328                                |
| 2015-16         | 1.005                  | 1.099              | 0.057                                       | 87,488                                    | 4,987                                               | 1,061,369                              |
| 2016-17         | 1.020                  | 1.801              | 0.047                                       | 919,724                                   | 43,227                                              | 1,804,039                              |
| 2017-18         | 1.433                  | 5.821              | 0.575                                       | 1,257,095                                 | 722,830                                             | 2,223,297                              |
| 2018-19         | 16.506                 | 164.168            | 17.239                                      | 86,728                                    | 1,495,101                                           | 1,596,741                              |
| Total           |                        |                    |                                             | \$2,351,036                               | \$2,266,145                                         | \$11,301,052                           |

Notes:

- (1) Page 48, Column (2).
- (2) Page 49, Column (2).
- (3)  $[(1) - 1.000] \times (2) / [(2) - (1)]$ .
- (4) Page 48, Column (1) - Page 49, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 48, Column (1).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | <i>A Priori</i><br>Ultimate<br>Losses<br>(1) | Cumulative<br>Reported Loss<br>Development<br>Factors<br>(2) | Percentage<br>of Losses<br>Not Yet<br>Reported<br>(3) | Expected<br>Unreported<br>Losses<br>(4) | Losses<br>Reported<br>as of<br>12/31/18<br>(5) | Estimated<br>Ultimate<br>Losses<br>(6) |
|-----------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------|------------------------------------------------|----------------------------------------|
| 2009-10         | \$652,304                                    | 1.000                                                        | 0.0%                                                  | \$0                                     | \$699,177                                      | \$699,177                              |
| 2010-11         | 651,443                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 1,216,602                                      | 1,216,602                              |
| 2011-12         | 650,775                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 600,483                                        | 600,483                                |
| 2012-13         | 650,261                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 724,089                                        | 724,089                                |
| 2013-14         | 649,106                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 931,927                                        | 931,927                                |
| 2014-15         | 648,824                                      | 1.001                                                        | 0.1%                                                  | 649                                     | 443,328                                        | 443,977                                |
| 2015-16         | 647,889                                      | 1.005                                                        | 0.5%                                                  | 3,239                                   | 1,056,382                                      | 1,059,621                              |
| 2016-17         | 647,031                                      | 1.020                                                        | 2.0%                                                  | 12,941                                  | 1,760,812                                      | 1,773,753                              |
| 2017-18         | 646,226                                      | 1.433                                                        | 30.2%                                                 | 195,160                                 | 1,500,467                                      | 1,695,627                              |
| 2018-19         | 645,448                                      | 16.506                                                       | 93.9%                                                 | 606,075                                 | 101,640                                        | 707,715                                |
| <b>Total</b>    | <b>\$6,489,307</b>                           |                                                              |                                                       | <b>\$818,064</b>                        | <b>\$9,034,907</b>                             | <b>\$9,852,971</b>                     |

Notes:

- (1) Page 33, Column (6), adjusted for \$250K limit.
- (2) Page 48, Column (2).
- (3)  $100\% - [1.000 / (2)]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 48, Column (1).
- (6)  $(4) + (5)$ .

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | <i>A Priori</i><br>Ultimate<br>Losses<br>(1) | Cumulative<br>Paid Loss<br>Development<br>Factors<br>(2) | Percentage<br>of Losses<br>Not Yet<br>Paid<br>(3) | Expected<br>Unpaid<br>Losses<br>(4) | Losses<br>Paid<br>as of<br>12/31/18<br>(5) | Estimated<br>Ultimate<br>Losses<br>(6) |
|-----------------|----------------------------------------------|----------------------------------------------------------|---------------------------------------------------|-------------------------------------|--------------------------------------------|----------------------------------------|
| 2009-10         | \$652,304                                    | 1.000                                                    | 0.0%                                              | \$0                                 | \$699,177                                  | \$699,177                              |
| 2010-11         | 651,443                                      | 1.000                                                    | 0.0%                                              | 0                                   | 1,216,602                                  | 1,216,602                              |
| 2011-12         | 650,775                                      | 1.000                                                    | 0.0%                                              | 0                                   | 600,483                                    | 600,483                                |
| 2012-13         | 650,261                                      | 1.000                                                    | 0.0%                                              | 0                                   | 724,089                                    | 724,089                                |
| 2013-14         | 649,106                                      | 1.014                                                    | 1.4%                                              | 9,087                               | 931,927                                    | 941,014                                |
| 2014-15         | 648,824                                      | 1.022                                                    | 2.2%                                              | 14,274                              | 443,328                                    | 457,602                                |
| 2015-16         | 647,889                                      | 1.099                                                    | 9.0%                                              | 58,310                              | 968,894                                    | 1,027,204                              |
| 2016-17         | 647,031                                      | 1.801                                                    | 44.5%                                             | 287,929                             | 841,088                                    | 1,129,017                              |
| 2017-18         | 646,226                                      | 5.821                                                    | 82.8%                                             | 535,075                             | 243,372                                    | 778,447                                |
| 2018-19         | 645,448                                      | 164.168                                                  | 99.4%                                             | 641,575                             | 14,912                                     | 656,487                                |
| <b>Total</b>    | <b>\$6,489,307</b>                           |                                                          |                                                   | <b>\$1,546,250</b>                  | <b>\$6,683,871</b>                         | <b>\$8,230,121</b>                     |

Notes:

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

**Monterey Bay Area Self Insurance Authority**

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

**Future Loss Exhibits**

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected 1M/500K Loss Rate for 2019-20 \*

**All Gross of \$10K Deductible**

Based on 250K Limit Analysis

| Program Year | 250K Limit Loss Rate<br>(1) | Factor for 1M/500K SIR<br>(2) | Projected 1M/500K SIR Loss Rate<br>(3) |
|--------------|-----------------------------|-------------------------------|----------------------------------------|
| 2019-20      | \$1.86                      | 1.659                         | \$3.09                                 |

Based on 1M/500K Limit Analysis

| Program Year | 1M/500K SIR Loss Rate<br>(4) | Factor for 1M/500K SIR<br>(5) | Projected 1M/500K SIR Loss Rate<br>(6) |
|--------------|------------------------------|-------------------------------|----------------------------------------|
| 2019-20      | \$2.80                       | 1.000                         | \$2.80                                 |

| Program Year | Selected 2019-20 1M/500K SIR Loss Rate<br>(7) | Projected 2019-20 Payroll (\$00's)<br>(8) | Projected Ultimate Losses<br>(9) |
|--------------|-----------------------------------------------|-------------------------------------------|----------------------------------|
| 2019-20      | <b>\$2.80</b>                                 | \$630,550                                 | \$1,764,241                      |

\* EPL Losses are limited to \$500K per occurrence

Notes:

- (1) Page 55, Item (5).
- (2) Estimated by BAC.
- (3) (1) x (2), rounded.
- (4) Page 56, Item (5).
- (5) Estimated by BAC.
- (6) (4) x (5), rounded.
- (7) Selected by BAC.
- (8) Page 69, Column (2).
- (9) (7) x (8), rounded.

Monterey Bay Area Self Insurance Authority  
 General and Auto Liability Program

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

| Program Year                             | Estimated Ultimate Losses<br>(1) | Trend Factor<br>(2) | Losses Trended to 2019-20<br>(3) |
|------------------------------------------|----------------------------------|---------------------|----------------------------------|
| 2009-10                                  | \$699,177                        | 1.255               | \$877,695                        |
| 2010-11                                  | 1,216,602                        | 1.219               | 1,483,303                        |
| 2011-12                                  | 600,483                          | 1.200               | 720,287                          |
| 2012-13                                  | 724,089                          | 1.173               | 849,027                          |
| 2013-14                                  | 931,927                          | 1.146               | 1,068,158                        |
| 2014-15                                  | 443,328                          | 1.120               | 496,710                          |
| 2015-16                                  | 1,070,000                        | 1.095               | 1,171,889                        |
| 2016-17                                  | 1,800,000                        | 1.071               | 1,927,079                        |
| 2017-18                                  | 1,880,000                        | 1.047               | 1,967,475                        |
| 2018-19                                  | 710,000                          | 1.023               | 726,330                          |
| Average 09-10 through 17-18:             |                                  |                     | \$1,173,514                      |
| (4) Projected 2019-20 Payroll (\$00's):  |                                  |                     | \$630,550                        |
| (5) Projected 2019-20 \$250K Limit Rate: |                                  |                     | \$1.86                           |

Notes:

- (1) Page 47, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 69, Column (2).
- (5) Average (3) / (4).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year                         | Estimated<br>Ultimate<br>Losses<br>(1) | Trend<br>Factor<br>(2) | Losses<br>Trended<br>to 2019-20<br>(3) |
|-----------------------------------------|----------------------------------------|------------------------|----------------------------------------|
| 2009-10                                 | \$729,487                              | 1.370                  | \$999,573                              |
| 2010-11                                 | 2,239,948                              | 1.328                  | 2,974,098                              |
| 2011-12                                 | 902,244                                | 1.287                  | 1,160,811                              |
| 2012-13                                 | 795,897                                | 1.247                  | 992,235                                |
| 2013-14                                 | 1,681,927                              | 1.208                  | 2,031,820                              |
| 2014-15                                 | 588,191                                | 1.171                  | 688,520                                |
| 2015-16                                 | 1,240,000                              | 1.134                  | 1,406,502                              |
| 2016-17                                 | 2,850,000                              | 1.099                  | 3,132,449                              |
| 2017-18                                 | 2,340,000                              | 1.065                  | 2,492,156                              |
| 2018-19                                 | 1,770,000                              | 1.032                  | 1,826,640                              |
| Average 09-10 through 17-18:            |                                        |                        | \$1,764,241                            |
| (4) Projected 2019-20 Payroll (\$00's): |                                        |                        | \$630,550                              |
| (5) Projected 2019-20 \$1M Limit Rate:  |                                        |                        | \$2.80                                 |

Notes:

- (1) Page 33, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 69, Column (2).
- (5) (3) / (4).

**Monterey Bay Area Self Insurance Authority**

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

**Discounting Exhibits**

Monterey Bay Area Self Insurance Authority  
 General and Auto Liability Program

Discounted Value of Unpaid Losses as of June 30, 2019  
 Assuming a 1.5% Interest Rate

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

| Program<br>Year | Projected<br>Unpaid<br>Losses<br>(1) | Discount<br>Factor<br>(2) | Discounted<br>Unpaid<br>Losses<br>(3) |
|-----------------|--------------------------------------|---------------------------|---------------------------------------|
| 2009-10         | \$0                                  | 1.000                     | \$0                                   |
| 2010-11         | 0                                    | 1.000                     | 0                                     |
| 2011-12         | 0                                    | 1.000                     | 0                                     |
| 2012-13         | 0                                    | 1.000                     | 0                                     |
| 2013-14         | 0                                    | 1.000                     | 0                                     |
| 2014-15         | 0                                    | 1.000                     | 0                                     |
| 2015-16         | 77,153                               | 0.993                     | 76,580                                |
| 2016-17         | 1,025,489                            | 0.990                     | 1,015,058                             |
| 2017-18         | 1,755,102                            | 0.984                     | 1,727,774                             |
| 2018-19         | 1,585,981                            | 0.973                     | 1,543,539                             |
| Total           | \$4,443,724                          |                           | \$4,362,951                           |

(4) Indicated Discount Factor: 0.982

Notes:

- (1) Page 24, Column (6).
- (2) (3) / (1).
- (3) Based upon a 1.5% interest rate.
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Discounted Value of 2019-20 Losses as of July 1, 2019  
Assuming a 1.5% Interest Rate

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

| Program<br>Year | Projected<br>Loss<br>Payments<br>(1) | Discounted<br>Value<br>Factor<br>(2) | Discounted<br>Value of<br>Payments<br>(3) |
|-----------------|--------------------------------------|--------------------------------------|-------------------------------------------|
| 2019-20         | \$101,191                            | 0.993                                | \$100,440                                 |
| 2020-21         | 301,631                              | 0.978                                | 294,970                                   |
| 2021-22         | 719,039                              | 0.963                                | 692,767                                   |
| 2022-23         | 526,966                              | 0.949                                | 500,209                                   |
| 2023-24         | 115,413                              | 0.935                                | 107,934                                   |
| 2024-25         | 0                                    | 0.921                                | 0                                         |
| 2025-26         | 0                                    | 0.908                                | 0                                         |
| 2026-27         | 0                                    | 0.894                                | 0                                         |
| 2027-28         | 0                                    | 0.881                                | 0                                         |
| 2028-29         | 0                                    | 0.868                                | 0                                         |
| 2029-30         | 0                                    | 0.855                                | 0                                         |
| <b>Total</b>    | <b>\$1,764,241</b>                   |                                      | <b>\$1,696,320</b>                        |

(4) Indicated Discount Factor: 0.962

Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Discounted Value of 2019-20 Losses as of July 1, 2019  
Assuming a 1.5% Interest Rate

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

| Program<br>Year | Projected<br>Loss<br>Payments<br>(1) | Discount<br>Factor<br>(2) | Discounted<br>Value of<br>Payments<br>(3) |
|-----------------|--------------------------------------|---------------------------|-------------------------------------------|
| 2019-20         | \$52,301                             | 0.993                     | \$51,913                                  |
| 2020-21         | 227,173                              | 0.978                     | 222,155                                   |
| 2021-22         | 694,607                              | 0.963                     | 669,227                                   |
| 2022-23         | 498,519                              | 0.949                     | 473,206                                   |
| 2023-24         | 115,246                              | 0.935                     | 107,777                                   |
| 2024-25         | 0                                    | 0.921                     | 0                                         |
| 2025-26         | 0                                    | 0.908                     | 0                                         |
| 2026-27         | 0                                    | 0.894                     | 0                                         |
| 2027-28         | 0                                    | 0.881                     | 0                                         |
| 2028-29         | 0                                    | 0.868                     | 0                                         |
| 2029-30         | 0                                    | 0.855                     | 0                                         |
| <b>Total</b>    | <b>\$1,587,845</b>                   |                           | <b>\$1,524,278</b>                        |

(4) Indicated Discount Factor: 0.960

Notes:

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

# **Monterey Bay Area Self Insurance Authority**

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

### **Deductibles**

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Reported<br>Projection<br>(1) | B-F<br>Method<br>Using<br>Reported<br>(2) | Selected<br>Ultimate<br>Losses<br>(3) |
|-----------------|-------------------------------|-------------------------------------------|---------------------------------------|
| 2009-10         | \$163,139                     | \$163,139                                 | \$163,139                             |
| 2010-11         | 169,177                       | 169,177                                   | 169,177                               |
| 2011-12         | 131,425                       | 131,425                                   | 131,425                               |
| 2012-13         | 118,042                       | 118,042                                   | 118,042                               |
| 2013-14         | 114,458                       | 114,456                                   | 114,456                               |
| 2014-15         | 104,324                       | 104,342                                   | 104,270                               |
| 2015-16         | 176,287                       | 176,259                                   | 177,000                               |
| 2016-17         | 195,487                       | 196,722                                   | 197,000                               |
| 2017-18         | 202,398                       | 215,933                                   | 210,000                               |
| 2018-19         | 300,394                       | 126,435                                   | 130,000                               |
| Total           | \$1,675,131                   | \$1,515,930                               | \$1,514,509                           |

Notes:

- (1) Page 63, Column (3).
- (2) Page 64, Column (6).
- (3) Selected on the basis of (1) - (2).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | Cumulative<br>Reported<br>Losses as of<br>12/31/18<br>(1) | Reported<br>Development<br>Factor<br>as of<br>12/31/18<br>(2) | Projected<br>Ultimate<br>Losses<br>(3) |
|-----------------|-----------------------------------------------------------|---------------------------------------------------------------|----------------------------------------|
| 2009-10         | \$163,139                                                 | 1.000                                                         | \$163,139                              |
| 2010-11         | 169,177                                                   | 1.000                                                         | 169,177                                |
| 2011-12         | 131,425                                                   | 1.000                                                         | 131,425                                |
| 2012-13         | 118,042                                                   | 1.000                                                         | 118,042                                |
| 2013-14         | 114,456                                                   | 1.000                                                         | 114,458                                |
| 2014-15         | 104,270                                                   | 1.001                                                         | 104,324                                |
| 2015-16         | 176,088                                                   | 1.001                                                         | 176,287                                |
| 2016-17         | 192,506                                                   | 1.015                                                         | 195,487                                |
| 2017-18         | 170,505                                                   | 1.187                                                         | 202,398                                |
| 2018-19         | 31,140                                                    | 9.647                                                         | 300,394                                |
| Total           | \$1,370,748                                               |                                                               | \$1,675,131                            |

Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

| Program<br>Year | <i>A Priori</i><br>Ultimate<br>Losses<br>(1) | Cumulative<br>Reported Loss<br>Development<br>Factors<br>(2) | Percentage<br>of Losses<br>Not Yet<br>Reported<br>(3) | Expected<br>Unreported<br>Losses<br>(4) | Limited<br>Losses<br>Reported<br>as of<br>12/31/18<br>(5) | Estimated<br>Ultimate<br>Deductible<br>Losses<br>(6) |
|-----------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------|------------------------------------------------------|
| 2009-10         | \$126,230                                    | 1.000                                                        | 0.0%                                                  | \$0                                     | \$163,139                                                 | \$163,139                                            |
| 2010-11         | 215,137                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 169,177                                                   | 169,177                                              |
| 2011-12         | 104,006                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 131,425                                                   | 131,425                                              |
| 2012-13         | 122,841                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 118,042                                                   | 118,042                                              |
| 2013-14         | 154,855                                      | 1.000                                                        | 0.0%                                                  | 0                                       | 114,456                                                   | 114,456                                              |
| 2014-15         | 72,154                                       | 1.001                                                        | 0.1%                                                  | 72                                      | 104,270                                                   | 104,342                                              |
| 2015-16         | 170,573                                      | 1.001                                                        | 0.1%                                                  | 171                                     | 176,088                                                   | 176,259                                              |
| 2016-17         | 281,055                                      | 1.015                                                        | 1.5%                                                  | 4,216                                   | 192,506                                                   | 196,722                                              |
| 2017-18         | 287,521                                      | 1.187                                                        | 15.8%                                                 | 45,428                                  | 170,505                                                   | 215,933                                              |
| 2018-19         | 106,356                                      | 9.647                                                        | 89.6%                                                 | 95,295                                  | 31,140                                                    | 126,435                                              |
| <b>Total</b>    | <b>\$1,640,727</b>                           |                                                              |                                                       | <b>\$145,182</b>                        | <b>\$1,370,748</b>                                        | <b>\$1,515,930</b>                                   |

Notes:

- (1) Page 47, Column (6), adjusted for \$10K limit.
- (2) Page 63, Column (2).
- (3)  $100\% - [ 1.000 / (2) ]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 63, Column (1).
- (6)  $(4) + (5)$ .

**Monterey Bay Area Self Insurance Authority**

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

**Claims Data Exhibits**

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Cumulative Reported Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/18

| Program    | <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>        |
| 2006       |                              |                |                |                | 618            | 557            | 557            | 557             | 557              | 557              | 557               |
| 2007       |                              |                |                | 451            | 424            | 401            | 401            | 401             | 401              | 401              | 401               |
| 2008       |                              |                | 662            | 617            | 500            | 500            | 500            | 500             | 500              | 500              | 500               |
| 2009       |                              | 541            | 307            | 355            | 405            | 452            | 455            | 454             | 455              | 455              | 455               |
| 2010       | 151                          | 569            | 1,025          | 1,082          | 721            | 729            | 729            | 729             | 729              | 729              |                   |
| 2011       | 76                           | 819            | 2,507          | 2,500          | 2,304          | 2,334          | 2,240          | 2,240           | 2,240            |                  |                   |
| 2012       | 19                           | 278            | 593            | 856            | 896            | 996            | 903            | 902             |                  |                  |                   |
| 2013       | 55                           | 343            | 454            | 777            | 703            | 934            | 796            |                 |                  |                  |                   |
| 2014       | 7                            | 1,443          | 1,714          | 2,384          | 2,359          | 2,359          |                |                 |                  |                  |                   |
| 2015       | 13                           | 534            | 685            | 589            | 589            |                |                |                 |                  |                  |                   |
| 2016       | 55                           | 828            | 1,339          | 1,160          |                |                |                |                 |                  |                  |                   |
| 2017       | 13                           | 1,619          | 2,544          |                |                |                |                |                 |                  |                  |                   |
| 2018       | 277                          | 1,500          |                |                |                |                |                |                 |                  |                  |                   |
| 2019       | 102                          |                |                |                |                |                |                |                 |                  |                  |                   |
|            | <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> |
| VOL AVG    | 11.899                       | 1.601          | 1.111          | 0.926          | 1.037          | 0.954          | 1.000          | 1.000           | 1.000            | 1.000            |                   |
| AVG        | 46.711                       | 1.616          | 1.157          | 0.936          | 1.047          | 0.966          | 0.999          | 1.000           | 1.000            | 1.000            |                   |
| REFERENCE  | 3.515                        | 1.496          | 1.092          | 1.036          | 1.017          | 1.007          | 1.000          | 1.000           | 1.000            | 1.000            | 1.000             |
| SELECT     | 11.899                       | 1.616          | 1.157          | 1.036          | 1.017          | 1.007          | 1.000          | 1.000           | 1.000            | 1.000            | 1.000             |
| CUMULATIVE | 23.568                       | 1.981          | 1.226          | 1.060          | 1.023          | 1.007          | 1.000          | 1.000           | 1.000            | 1.000            | 1.000             |

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Cumulative Paid Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/18

| Program    | <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>        |
| 2006       |                              |                |                |                | 565            | 557            | 557            | 557             | 557              | 557              | 557               |
| 2007       |                              |                |                | 386            | 406            | 401            | 401            | 401             | 401              | 401              | 401               |
| 2008       |                              |                | 337            | 497            | 500            | 500            | 500            | 500             | 500              | 500              | 500               |
| 2009       |                              | 151            | 255            | 274            | 306            | 372            | 455            | 454             | 455              | 455              | 455               |
| 2010       | 15                           | 122            | 524            | 727            | 721            | 729            | 729            | 729             | 729              | 729              | 729               |
| 2011       | 5                            | 194            | 646            | 1,932          | 2,200          | 2,221          | 2,240          | 2,240           | 2,240            | 2,240            |                   |
| 2012       | 13                           | 113            | 177            | 387            | 897            | 899            | 902            | 902             |                  |                  |                   |
| 2013       | 3                            | 124            | 373            | 702            | 703            | 716            | 796            |                 |                  |                  |                   |
| 2014       | 4                            | 478            | 935            | 2,311          | 2,324          | 2,329          |                |                 |                  |                  |                   |
| 2015       | 10                           | 56             | 510            | 589            | 589            |                |                |                 |                  |                  |                   |
| 2016       | 13                           | 142            | 575            | 1,072          |                |                |                |                 |                  |                  |                   |
| 2017       | 7                            | 309            | 966            |                |                |                |                |                 |                  |                  |                   |
| 2018       | 21                           | 243            |                |                |                |                |                |                 |                  |                  |                   |
| 2019       | 15                           |                |                |                |                |                |                |                 |                  |                  |                   |
|            | <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> |
| VOL AVG    | 19.410                       | 2.936          | 1.960          | 1.108          | 1.012          | 1.029          | 1.000          | 1.000           | 1.000            | 1.000            |                   |
| AVG        | 31.260                       | 3.568          | 1.832          | 1.181          | 1.026          | 1.043          | 1.000          | 1.001           | 1.000            | 1.000            |                   |
| REFERENCE  | 9.585                        | 2.802          | 1.515          | 1.172          | 1.037          | 1.040          | 1.036          | 1.019           | 1.004            | 1.000            | 1.000             |
| SELECT     | 31.260                       | 3.568          | 1.832          | 1.108          | 1.012          | 1.029          | 1.000          | 1.001           | 1.000            | 1.000            | 1.000             |
| CUMULATIVE | 235.719                      | 7.541          | 2.113          | 1.154          | 1.041          | 1.029          | 1.000          | 1.001           | 1.000            | 1.000            | 1.000             |

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Cumulative # of Reported Losses - 12/31/18

| Program    | <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>        |
| 2006       |                              |                |                |                | 41             | 40             | 40             | 40              | 39               | 38                |
| 2007       |                              |                |                | 56             | 56             | 56             | 56             | 49              | 49               | 49                |
| 2008       |                              |                | 57             | 55             | 55             | 55             | 54             | 52              | 49               | 53                |
| 2009       |                              | 56             | 61             | 62             | 62             | 61             | 60             | 57              | 57               | 58                |
| 2010       | 17                           | 46             | 49             | 52             | 51             | 52             | 51             | 51              | 51               | 51                |
| 2011       | 21                           | 65             | 65             | 65             | 65             | 61             | 61             | 61              | 65               |                   |
| 2012       | 22                           | 75             | 72             | 72             | 67             | 67             | 68             | 69              |                  |                   |
| 2013       | 17                           | 62             | 66             | 63             | 63             | 63             | 62             |                 |                  |                   |
| 2014       | 14                           | 58             | 57             | 57             | 57             | 57             |                |                 |                  |                   |
| 2015       | 19                           | 64             | 66             | 67             | 67             |                |                |                 |                  |                   |
| 2016       | 20                           | 70             | 73             | 75             |                |                |                |                 |                  |                   |
| 2017       | 26                           | 89             | 90             |                |                |                |                |                 |                  |                   |
| 2018       | 26                           | 67             |                |                |                |                |                |                 |                  |                   |
| 2019       | 22                           |                |                |                |                |                |                |                 |                  |                   |
|            | <u>6 - 18</u>                | <u>18 - 30</u> | <u>30 - 42</u> | <u>42 - 54</u> | <u>54 - 66</u> | <u>66 - 78</u> | <u>78 - 90</u> | <u>90 - 102</u> | <u>102 - 114</u> | <u>114 - Ult.</u> |
| ALLYR VOL  | 3.275                        | 1.024          | 1.004          | 0.989          | 0.990          | 0.993          | 0.972          | 1.000           | 1.016            |                   |
| ALL YR AVG | 3.319                        | 1.027          | 1.004          | 0.990          | 0.991          | 0.992          | 0.967          | 1.002           | 1.025            | 1.000             |
| SELECT     | 3.313                        | 1.033          | 1.011          | 1.000          | 1.000          | 1.000          | 1.000          | 1.000           | 1.000            | 1.000             |
| CUMULATIVE | 3.458                        | 1.044          | 1.011          | 1.000          | 1.000          | 1.000          | 1.000          | 1.000           | 1.000            | 1.000             |

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Program Information  
Program Years run July 1 to June 30

| Program<br>Year | Self-Insured<br>Retention<br>(SIR) *<br>(1) | Payroll<br>(\$00's)<br>(2) | Exposure<br>Index<br>(3) | Deductible<br>(4) |
|-----------------|---------------------------------------------|----------------------------|--------------------------|-------------------|
| 2009-10         | \$1,000,000                                 | \$455,000                  | 1.000                    | \$10,000          |
| 2010-11         | 1,000,000                                   | 456,468                    | 1.000                    | 10,000            |
| 2011-12         | 1,000,000                                   | 454,479                    | 1.000                    | 10,000            |
| 2012-13         | 1,000,000                                   | 422,491                    | 1.000                    | 10,000            |
| 2013-14         | 1,000,000                                   | 436,959                    | 1.000                    | 10,000            |
| 2014-15         | 1,000,000                                   | 455,957                    | 1.000                    | 10,000            |
| 2015-16         | 1,000,000                                   | 472,388                    | 1.000                    | 10,000            |
| 2016-17         | 1,000,000                                   | 518,291                    | 1.000                    | 10,000            |
| 2017-18         | 1,000,000                                   | 545,055                    | 1.000                    | 10,000            |
| 2018-19         | 1,000,000                                   | 598,813                    | 1.000                    | 10,000            |
| 2019-20         | ?                                           | 630,550                    | 1.000                    | 10,000            |

Notes:

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