

# **Monterey Bay Area Self Insurance Authority**

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

**BAY ACTUARIAL CONSULTANTS  
Moraga, California  
March 5, 2024**

# Bay Actuarial Consultants

March 5, 2024

Mr. Conor Boughey  
Vice President  
Alliant Insurance Services  
560 Mission Street, 6th Floor  
San Francisco, CA 94105


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.

Please call me at (925) 377-5269 if you have any questions.

Respectfully,

BAY ACTUARIAL CONSULTANTS

  
Jack Joyce, FCAS, MAAA  
Principal

# Monterey Bay Area Self Insurance Authority

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

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# **Monterey Bay Area Self Insurance Authority**

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

### **Introduction**

# 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 2024-25 Losses & Rate of Loss.** It includes a projection of the losses expected to be incurred during 2024-25, expressed as a total dollar amount and also as a rate of loss per \$100 of payroll.
- 2) **Unpaid Losses.** It shows the estimated the liability for unpaid losses as of 12/31/23 and the projected 6/30/24 liability.
- 3) **Discounting.** The projected 2024-25 losses and the estimated liability are discounted to present value at **3.0%** interest. Discounting takes the time value of money into account as an offset to future expenses.
- 4) **Quantification of Uncertainty.** It includes an analysis of these items in terms of “probability levels.”
- 5) **Short-Term versus Long-Term.** The liabilities are broken out into 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 the Authority with coverage against property and liability claims to 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 such expenses.

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.

## **Structure of the Report**

The rest of this report comprises 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. The *Technical Approach* section explains and discusses the assumptions and details. The *Exhibits* document the calculations.

# **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 24-25 Losses and Rates of Loss

Tables I and II shows the projected 24-25 losses and loss rates at various probability levels, discounted and undiscounted. The amounts in Table I are gross of the \$25,000 per loss deductible, while in Table II the deductibles have been taken out. The discounting is at **3.0%** interest. The amounts 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 the portion of any general or auto liability loss above \$1,000,000. The Employment Risk Management Authority (“ERMA”) is expected to cover the portion of any EPL loss above \$500,000 that is reported during 24-25.

Tables I and II show “actuarial central estimates,” plus estimates at higher probability levels. A designated probability level estimate has the associated (estimated) probability of being adequate. For example, there is an estimated 80% probability that the actual 24-25 losses, including the full amounts of the deductibles (Table I) will be less than **\$4,174,963**. There is a table on page 13 that shows the adjustments to make to discount at interest rates other than **3.0%**. The 24-25 loss numbers in the next to last row are last year’s Table 1 rates times the latest 23-24 payroll estimate of **\$82.98 million**.

<b>Table I: Projected 24-25 Losses and Rates of Loss per \$100 Payroll \$1M SIR (\$500K EPL SIR), Gross of \$25K Deductible, 3.0% Interest Rate</b>				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
<b>Central Estimate</b>	<b>\$3,162,851</b>	<b>\$2,881,357</b>	<b>\$3.63</b>	<b>\$3.31</b>
70%	3,700,536	3,371,188	4.25	3.87
75%	3,921,935	3,572,883	4.50	4.10
80%	<b>\$4,174,963</b>	3,803,392	4.79	4.37
90%	4,870,791	4,437,290	5.59	5.10
<b>2023-24 C.E.</b>	<b>\$2,672,014</b>	<b>\$2,420,844</b>	<b>\$3.22</b>	<b>\$2.92</b>
% Change from 23-24	+18.4%	+19.0%	+12.7%	+13.4%
<b>2023-24 80%</b>	<b>\$3,714,099</b>	<b>\$3,364,974</b>	<b>\$4.48</b>	<b>\$4.06</b>
% Change from 23-24	+12.4%	+13.0%	+7.1%	+7.6%

<b>Table II: Projected 24-25 Losses and Loss Rates</b>				
<b>\$1M SIR (\$500K EPL SIR), NET of \$25K Deductible, 3.0% Interest Rate</b>				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
<b>Central Estimate</b>	<b>\$2,638,908</b>	<b>\$2,390,851</b>	<b>\$3.03</b>	<b>\$2.75</b>
70%	3,113,911	2,821,204	3.58	3.25
75%	3,325,024	3,012,472	3.82	3.47
80%	<b>\$3,588,915</b>	3,251,557	4.12	3.74
90%	4,301,420	3,897,087	4.94	4.48
<b>2023-24 C.E.</b>	<b>\$2,238,251</b>	<b>\$2,005,473</b>	<b>\$2.70</b>	<b>\$2.42</b>
% Change from 23-24	+17.9%	+19.2%	+12.2%	+13.6%
<b>2023-24 80%</b>	<b>\$3,200,700</b>	<b>\$2,867,826</b>	<b>\$3.86</b>	<b>\$3.46</b>
% Change from 23-24	+12.1%	+13.4%	+6.7%	+8.1%

### Projected 24-25 Losses and Rates of Loss at \$1.5M and \$2M

Tables III through VI show the projected 24-25 losses and loss rates at limits of \$1.5M and \$2M both gross and net of the \$25,000 deductible.

<b>Table III: Projected 24-25 Losses and Loss Rates</b>				
<b>\$1.5M SIR (\$500K EPL SIR), Gross of \$25K Deductible, 3.0% Interest Rate</b>				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
<b>Central Estimate</b>	<b>\$3,310,974</b>	<b>\$3,014,729</b>	<b>\$3.80</b>	<b>\$3.46</b>
70%	3,906,949	3,557,380	4.48	4.08
75%	4,138,717	3,768,411	4.75	4.33
80%	<b>\$4,436,705</b>	4,039,737	5.09	4.64
90%	5,231,339	4,763,271	6.00	5.47

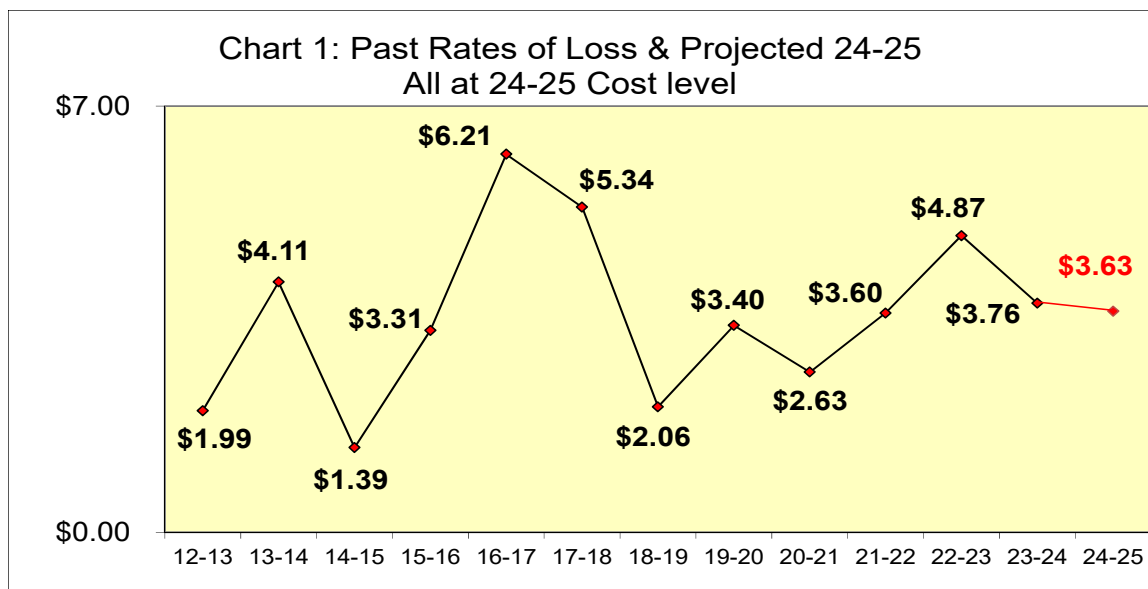
<b>Table IV: Projected 24-25 Losses and Loss Rates</b>				
<b>\$1.5M SIR (\$500K EPL SIR), NET of \$25K Deductible, 3.0% Interest Rate</b>				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
<b>Central Estimate</b>	<b>\$2,788,188</b>	<b>\$2,544,222</b>	<b>\$3.20</b>	<b>\$2.92</b>
70%	3,317,944	3,027,624	3.81	3.47
75%	3,568,881	3,256,604	4.10	3.74
80%	<b>\$3,847,700</b>	3,511,026	4.42	4.03
90%	4,656,275	4,248,851	5.34	4.88

Table V: Projected 24-25 Losses and Loss Rates \$2.0M SIR (\$500K EPL SIR), Gross of \$25K Deductible, 3.0% Interest Rate				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
<b>Central Estimate</b>	<b>\$3,389,392</b>	<b>\$3,084,433</b>	<b>\$3.89</b>	<b>\$3.54</b>
70%	3,999,482	3,639,631	4.59	4.18
75%	4,236,739	3,855,542	4.86	4.43
80%	<b>\$4,541,785</b>	4,133,141	5.21	4.74
90%	5,355,239	4,873,405	6.15	5.59

Table VI: Projected 24-25 Losses and Loss Rates \$2.0M SIR (\$500K EPL SIR), NET of \$25K Deductible, 3.0% Interest Rate				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
<b>Central Estimate</b>	<b>\$2,866,606</b>	<b>\$2,613,927</b>	<b>\$3.29</b>	<b>\$3.00</b>
70%	3,353,929	3,058,294	3.85	3.51
75%	3,583,258	3,267,408	4.11	3.75
80%	<b>\$3,869,918</b>	3,528,801	4.44	4.05
90%	4,701,234	4,286,840	5.40	4.92

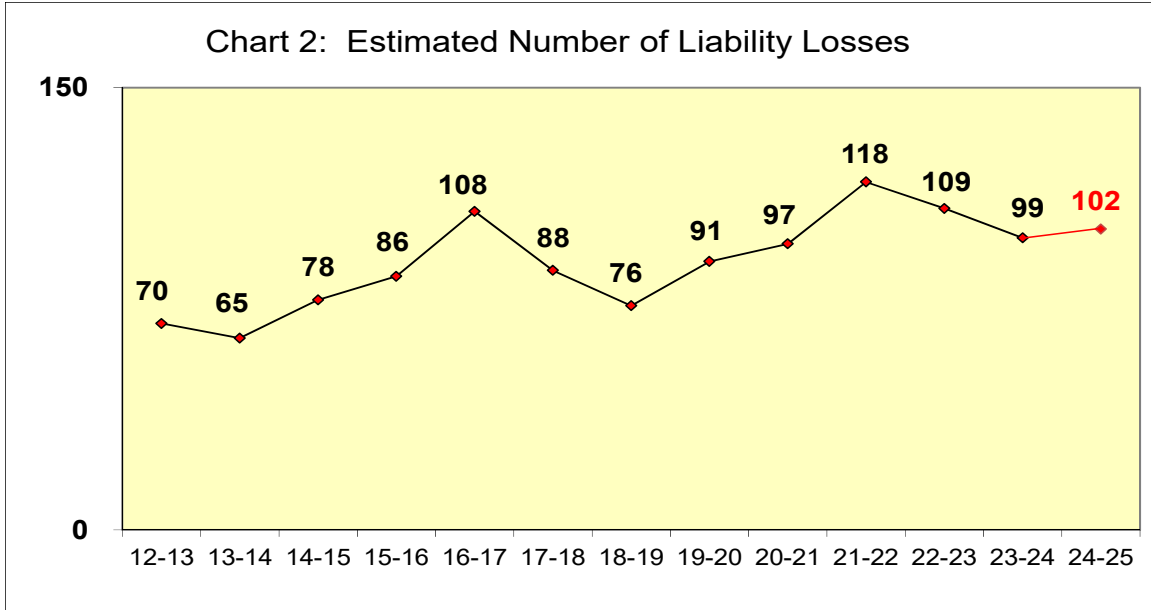
### The Authority's Past Rates of Loss

Chart 1 shows the Authority's estimated past rates of loss at the \$1M/\$500K (\$500K EPL) SIR in 24-25 dollars. The rates for the older years equal the estimated total losses for the year divided by the year's payroll, all in 24-25 dollars. The **\$3.63** rate for 24-25 is from Table I. Five of the twelve older rates in chart are above the projected 24-25 rate of **\$3.63** and seven are below. So the 24-25 central estimate is slightly above center, right where it should be.



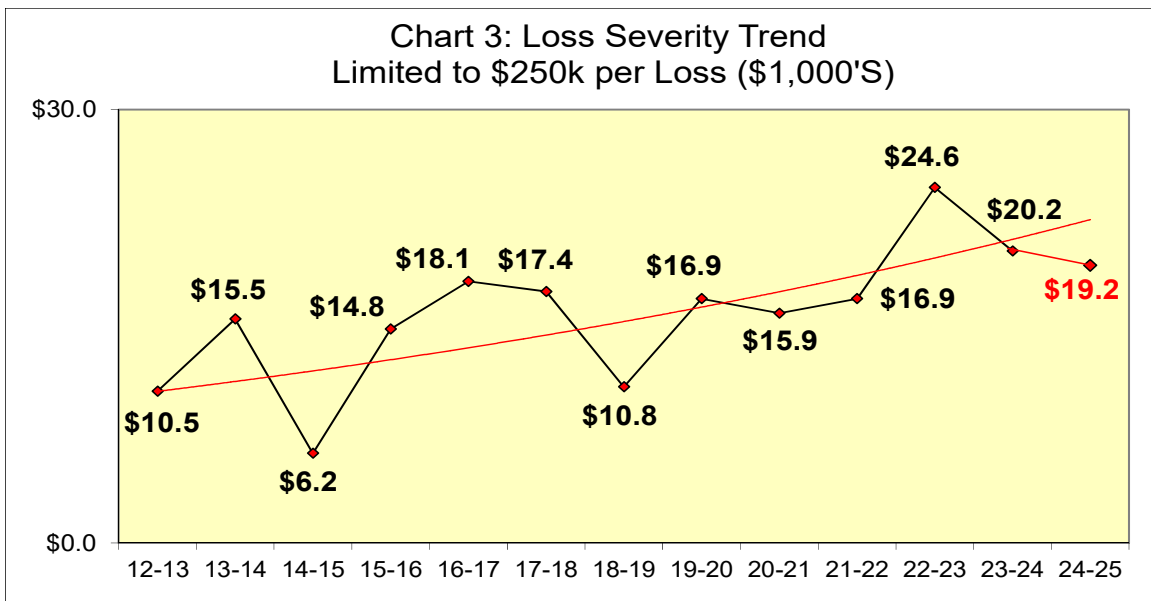
## Cost Drivers: Frequency & Severity

MBASIA's total costs are driven by the number of claims (frequency) and the average amount of a claim (severity). Chart 2 shows the estimated number of liability claims for past program years plus the projection for **24-25**.



The 23-24 estimate of **99** is an actuarial projection based on the **22** claims reported through 12/31/23, so that 23-24 estimate is currently very uncertain. The projection of **102** claims for 24-25 is even more uncertain since the year won't begin until 7/1/24. The chart does not appear to show any particular trend.

Chart 3 shows average claim amounts by program year with all losses limited to \$250,000 per loss occurrence. Using the lower \$250,000 limit makes it easier to see the trend, which is **6.3%** per year in the chart.



The trend at the \$1 million limit is somewhat higher but would be more scattered and difficult to pick out in this type of chart. This severity trend is what is driving MBASIA's costs higher every year.

The inflation-driven severity trend is an important actuarial assumption. In last year's analysis of the 12/31/22 data the severity trend assumption was **6.5%** per year. This year's analysis is based on an assumption of about **6.8%** per year. The trend in the deductible losses is only about **2.7%** per year at the \$25,000 limit. When the deductibles are removed the trend in the actual retained losses net of deductibles is about **7.2%** per year.

### Liability at 12/31/23

We estimate that the Authority's liability for unpaid losses was **\$6,523,959** on 12/31/23. This is an undiscounted estimate that does not include the portion of the losses that the members will pay under their \$25,000 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 12/31/23 – Net of Deductibles</b>		
Probability Level	Undiscounted Losses	Discounted at 3.0%
<b>Central Estimate</b>	<b>\$6,523,959</b>	<b>\$6,178,189</b>
60%	6,654,439	6,301,753
70%	7,045,876	6,672,445
75%	7,306,834	6,919,572
80%	7,567,793	7,166,700
90%	8,285,428	7,846,301
85%	9,003,064	8,525,901
98%	9,785,939	9,267,284

### Reconciling the 12/31/22 & 12/31/23 Liability Estimates

Table IV reconciles last year's estimate of the 12/31/22 liability, **\$6,180,892**, with the new estimate of the 12/31/23 liability, **\$6,523,959**.

<b>Table IV: Reconcile 12/31/22 &amp; 12/31/23 Liabilities</b>	
<b>Estimated 12/31/22 Net Liability</b>	<b>\$6,180,892</b>
Payments in Calendar 2023	2,749,595
Change in Estimates for 12/31/22 and Prior	+502,162
Estimated Losses Calendar 2023	+2,590,500
<b>Estimated 12/31/23 Net Liability</b>	<b>\$6,523,959</b>

## Projected 6/30/24 Liability

Table V shows the projection of the 6/30/24 liability.

<b>Table V: Projected 6/30/24 Liability Net of Deductibles</b>	
<b>12/31/23 Liability Central Estimate</b>	<b>\$6,523,959</b>
Projected Payments 1/1/24 to 6/30/24	-1,032,158
Projected New Losses 1/1/24 to 6/30/24	+1,175,000
<b>Projected 6/30/24 Central Estimate</b>	<b>\$6,666,801</b>

Table VI shows the projected probability levels for the projected 6/30/24 liability. These probability levels are based on the assumption that the claims payments over the next six months and the new losses that will occur will match those projected in Table V. There is, of course, a great deal of uncertainty about the actual claim activity that will occur over the next six months.

<b>Table VI: Projected Estimate of 6/30/24 Liability Net of Deductibles</b>		
<b>Probability Level</b>	<b>Undiscounted Losses</b>	<b>Discounted at 3.0%</b>
<b>Central Estimate</b>	<b>\$6,666,801</b>	<b>\$6,313,461</b>
60%	6,800,137	6,439,730
70%	7,200,145	6,818,537
75%	7,400,149	7,007,941
80%	7,666,821	7,260,480
90%	8,466,837	8,018,095
95%	9,133,517	8,649,441
98%	10,000,202	9,470,191

## Short-Term Liability

Short-term liabilities are those expected to be discharged over the next twelve months. The total projected 6/30/24 liability of **\$6,666,801** comprises **\$1,895,543** of short-term and **\$4,771,258** of long-term liabilities.

## Capital Requirements

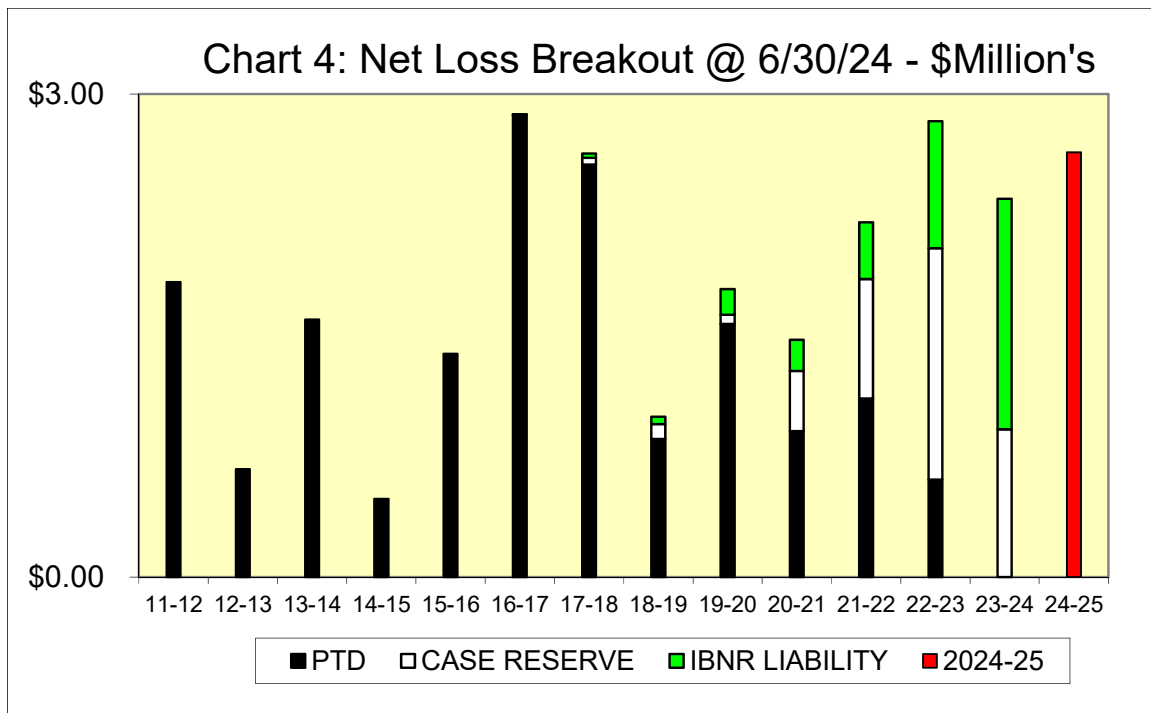
Subtracting the central estimate from a higher probability estimate produces an estimate of the capital required to attain that higher probability level. For example, in Table III the difference between the 75% level and the undiscounted central estimate is **\$782,875**, so that was the capital required to attain 75% at 12/31/23. A similar calculation based on Table VI shows that a total of **\$733,348** will be required to attain 75% at 6/30/24 if the projections of claims activity over the next six months shown in Table V turn out to be accurate.

## ULAE Liability

We estimate the liability for unpaid unallocated loss adjustment expenses (“ULAE”) at **\$397,413** on both 12/31/23 and 6/30/24. This is on page 22.

## Projected Loss Breakout as of 6/30/24

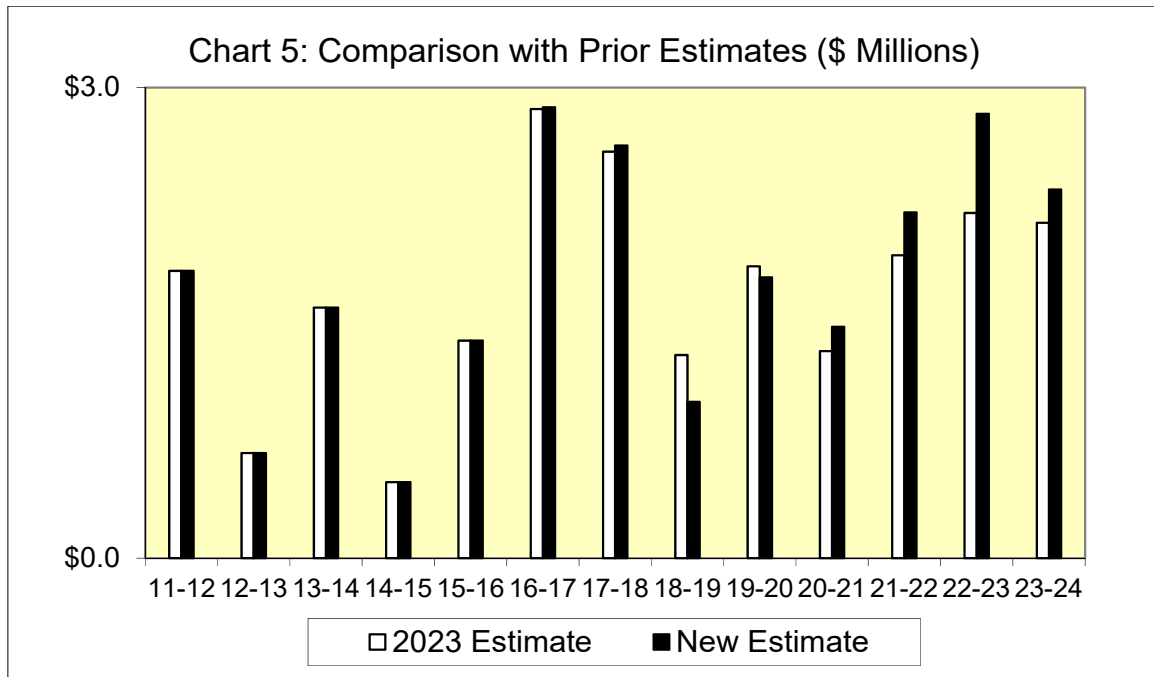
In Tables V and VI show the Authority’s projected 6/30/24 liability of **\$6,666,801**, net of deductibles. This total comprises projected case reserves for known claims of **\$3,663,724** and an IBNR liability of **\$3,003,077**. This is **\$0.82** of IBNR liability for every **\$1.00** of case reserves. Chart 4 breaks out the projected losses into their components: losses paid, case reserves, and IBNR liability. The projected 6/30/24 dollar amounts are shown on page 24.



The red column shows the projected losses for 24-25, for comparison purposes. That column is the undiscounted central estimate from Table II, **\$2,638,908**.

## Comparison with 2023 Estimates

Chart 5 compares last year's estimates of the net of deductible losses with the new estimates. The overall increase in the estimates for all years through 2022-23 was **\$738,000**.



## Interest Rates

The discounted liabilities and rates in this report were discounted at **3.0%** interest. Here are the adjustments to make for different interest rate assumptions:

Interest Rate	0.0%	3.0%	3.5%	4.20%	4.41%
Net Contribution Rates	+10.4%	+0.0%	-1.5%	-3.8%	-4.3%
6/30/24 Liability	+5.6%	+0.0%	-1.0%	-2.1%	-2.5%

The timing and amounts of the projected future loss payments are one of the products of the actuarial analysis. If that information is combined with information that the US Treasury publishes on interest rates, one can evaluate the reasonableness of the **3.0%** interest rate assumed in this report.

Matching the projected future claims payments with zero coupon US Treasury bonds as of 1/31/24 produced an overall interest rate of **4.41%** for the 6/30/24 liability and of **4.20%** for the projected 2024-25 rate of loss. Therefore, as of 1/31/24, **3.0%** was reasonable and quite conservative. Those **4.41%** and **4.20%** yields to maturity could have been “locked in” on 1/31/24. However, in the current risky environment it might be prudent to stay at **3.0%** and consider the extra funding an extra margin of safety.

# **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 estimated liability as of 12/31/23 and the projected 6/30/24 liability. The 6/30/24 projection is based on the assumption that losses will develop over the next six months as we currently project. Summary Exhibit 3 shows the projected rate of loss for the 24-25 program year, which runs from 7/1/24 to 6/30/25. Summary Exhibit 4 shows the projected unpaid losses as of 6/30/24 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 estimated unpaid losses as of 12/31/23 and the projected unpaid losses as of 6/30/24.

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

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

There are 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 24-25 loss rate.

***Future Loss Exhibits***

These exhibits show the projection of the expected rate for 24-25.

***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 \$25,000 deductible.

***Claims Data***

We included development triangles for reported losses and losses paid 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 12/31/23  
Losses Limited to SIR, NET of Deductible

	<u>12/31/23</u>
(1) Estimated Unpaid Losses:	\$6,523,959
(2) Discounted Value of Unpaid Losses: (Assuming 3.0% Interest Rate)	\$6,178,189

Probability Levels for 12/31/23 Liabilities			
Probability Level <u>(3)</u>	Probability Factor <u>(4)</u>	Undiscounted <u>(5)</u>	Discounted at 3.00% Interest <u>(6)</u>
<b>Central Estimate</b>	<b>1.00</b>	<b>\$6,523,959</b>	<b>\$6,178,189</b>
60%	1.02	6,654,439	6,301,753
70%	1.08	7,045,876	6,672,445
75%	1.12	7,306,834	6,919,572
80%	1.16	7,567,793	7,166,700
90%	1.27	8,285,428	7,846,301
95%	1.38	9,003,064	8,525,901
98%	1.50	9,785,939	9,267,284

Notes:

- (1) Page 25, Column (6).
- (2) (1), discounted at 3.00% interest.
- (3) Estimated probability that funding will be adequate.
- (4) Estimated by BAC.
- (5) (1) x (4).
- (6) (2) x (4).

Monterey Bay Area Self Insurance Authority  
Property & Liability Programs

Projected 6/30/24 Estimate of Liability

	Net of Deductibles
(1) Estimated Unpaid Losses: 12/31/23	\$6,523,959
(2) Projected payments over next six months:	\$1,032,158
(3) Projected new losses over next six months:	\$1,175,000
<b>(4) Projected Unpaid Losses: 6/30/24</b>	<b>\$6,666,801</b>

Probability Level (5)	Projected Estimated Probability Factor (6)	Undiscounted Net of Deductibles (7)	Discounted at 3.00% Interest Net of Deductibles (8)
Central Estimate	1.00	\$6,666,801	\$6,313,461
60%	1.02	6,800,137	6,439,730
70%	1.08	7,200,145	6,818,537
75%	1.11	7,400,149	7,007,941
80%	1.15	7,666,821	7,260,480
90%	1.27	8,466,837	8,018,095
95%	1.37	9,133,517	8,649,441
98%	1.50	10,000,202	9,470,191

Items (7) & (8) are useful to the extent that the projections in items (2) & (3) turn out to be accurate. Actual expenditures and actual new loss occurrences must match items (2) & (3).

Notes:

- (1) Page 18, Item (1).
- (2) Projected by BAC.
- (3) Projected by BAC.
- (4) (1) - (2) + (3).
- (5) Projected Probability on 6/30/24.
- (6) Projected by BAC.
- (7) (4) x (6).
- (8) (7), discounted at 3.00% interest.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Loss Funding Rate for 2024-25  
Losses Limited to \$1,000,000, NET of \$25K Deductible

(1) Discounted Loss Rate: Loss Rates  
\$2.75  
(as of 7/1/24, 3.0% interest rate)

Probability Levels		
Probability Level <u>(2)</u>	Probability Factor <u>(3)</u>	Discounted * Rate <u>(4)</u>
50%	0.93	2.56
<b>Central Estimate</b>	<b>1.00</b>	<b>\$2.75</b>
60%	1.05	2.89
70%	1.18	3.25
75%	1.26	3.47
80%	1.36	3.74
90%	1.63	4.48
* Multiply by 1.104 to obtain undiscounted values.		

Notes:

- (1) [Page 55, Column (7)] x [Page 61, Column (4)],  
adjusted for \$25,000 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 6/30/24  
Losses Limited to SIR, NET of Deductible

Program Year	Undiscounted Value: Claims Liabilities as of 6/30/24 (1)	Discounted (3.0% Interest) Claims Liabilities as of 6/30/24 (2)	Estimated Ultimate Losses (3)
2012-13	\$0	\$0	\$669,176
2013-14	0	0	1,597,495
2014-15	0	0	484,373
2015-16	0	0	1,385,944
2016-17	1,288	1,288	2,873,000
2017-18	68,393	67,390	2,630,734
2018-19	138,831	134,723	995,174
2019-20	216,764	209,721	1,789,000
2020-21	568,692	552,133	1,474,000
2021-22	1,095,339	1,042,939	2,204,000
2022-23	2,227,495	2,109,131	2,831,000
2023-24	2,350,000	2,193,404	2,350,000
Total	\$6,666,801	\$6,310,729	

Notes:

- (1) Page 24, Column (6).
- (2) Page 59, 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 Reserves with <u>Development</u>	"True" <u>IBNR</u>	<u>Total</u>
(2) ULAE Ratio:	4.3%	8.7%	
(3) Estimated Unpaid Losses as of 12/31/23:	\$6,092,416	\$1,560,691	\$7,653,107
(4) Estimated Unpaid ULAE as of 12/31/23:	\$261,974	\$135,439	\$397,413
(5) Discounted Unpaid ULAE as of 12/31/23: ( 3.0% interest rate)			\$376,350

We project that the 6/30/24 ULAE liability  
will equal the 12/31/23 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 59, 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 6/30/24  
Losses Limited to SIR, NET of Deductible

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/24 (2)	Projected Case Reserves 6/30/24 (3)	Projected Losses Reported as of 6/30/24 (4)	Projected IBNR as of 6/30/24 (5)	Projected Unpaid Losses as of 6/30/24 (6)
2012-13	\$669,176	\$669,177	\$0	\$669,177	\$0	\$0
2013-14	1,597,495	1,597,495	0	1,597,495	0	0
2014-15	484,373	484,373	0	484,373	0	0
2015-16	1,385,944	1,385,944	0	1,385,944	0	0
2016-17	2,873,000	2,871,712	235	2,871,948	1,052	1,288
2017-18	2,630,734	2,562,340	42,068	2,604,408	26,326	68,393
2018-19	995,174	856,343	93,695	950,038	45,136	138,831
2019-20	1,789,000	1,572,236	55,693	1,627,929	161,071	216,764
2020-21	1,474,000	905,308	374,701	1,280,009	193,991	568,692
2021-22	2,204,000	1,108,661	741,398	1,850,059	353,941	1,095,339
2022-23	2,831,000	603,505	1,438,432	2,041,938	789,062	2,227,495
2023-24	2,350,000	0	917,501	917,501	1,432,499	2,350,000
Total	\$21,283,896	\$14,617,095	\$3,663,724	\$18,280,819	\$3,003,077	\$6,666,801

## 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 12/31/23  
Losses Limited to SIR, NET of Deductible

Program Year	Estimated Ultimate Losses (1)	Losses Paid as of 12/31/23 (2)	Case Reserves 12/31/23 (3)	Losses Reported as of 12/31/23 (4)	Estimated IBNR as of 12/31/23 (5)	Estimated Unpaid Losses as of 12/31/23 (6)
2012-13	\$669,176	\$669,177	\$0	\$669,177	\$0	\$0
2013-14	1,597,495	1,597,495	0	1,597,495	0	0
2014-15	484,373	484,373	0	484,373	0	0
2015-16	1,385,944	1,385,944	0	1,385,944	0	0
2016-17	2,873,000	2,870,425	0	2,870,425	2,575	2,575
2017-18	2,630,734	2,495,783	84,866	2,580,649	50,084	134,951
2018-19	995,174	765,893	158,854	924,747	70,427	229,281
2019-20	1,789,000	1,527,636	61,106	1,588,742	200,258	261,364
2020-21	1,474,000	831,269	421,802	1,253,071	220,929	642,731
2021-22	2,204,000	956,941	865,813	1,822,754	381,246	1,247,059
2022-23	2,831,000	0	1,788,001	1,788,001	1,042,999	2,831,000
2023-24	1,175,000	0	173,500	173,500	1,001,500	1,175,000
<b>Total</b>	<b>\$20,108,896</b>	<b>\$13,584,937</b>	<b>\$3,553,942</b>	<b>\$17,138,879</b>	<b>\$2,970,017</b>	<b>\$6,523,959</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 6/30/24  
Losses Limited to SIR, Gross of Deductible

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/24 (2)	Projected Case Reserves 6/30/24 (3)	Projected Losses Reported as of 6/30/24 (4)	Projected IBNR as of 6/30/24 (5)	Projected Unpaid Losses as of 6/30/24 (6)
2012-13	\$805,895	\$805,895	\$0	\$805,895	\$0	\$0
2013-14	1,756,276	1,756,276	0	1,756,276	0	0
2014-15	628,110	628,110	0	628,110	0	0
2015-16	1,584,642	1,584,642	0	1,584,642	0	0
2016-17	3,140,000	3,138,152	326	3,138,478	1,522	1,848
2017-18	2,850,000	2,781,607	42,068	2,823,674	26,326	68,393
2018-19	1,160,000	1,021,169	93,695	1,114,864	45,136	138,831
2019-20	2,020,000	1,802,039	56,594	1,858,633	161,367	217,961
2020-21	1,690,000	1,108,533	386,654	1,495,187	194,813	581,467
2021-22	2,500,000	1,352,206	792,098	2,144,305	355,695	1,147,794
2022-23	3,650,000	1,008,900	1,824,665	2,833,566	816,434	2,641,100
2023-24	3,040,000	59,235	1,334,747	1,393,983	1,646,017	2,980,765
Total	\$24,824,923	\$17,046,765	\$4,530,847	\$21,577,612	\$3,247,311	\$7,778,158

## 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 1/1/24 and 6/30/24  
Losses Limited to SIR, Gross of Deductible

Program Year	Losses Paid as of 12/31/23 (1)	Projected Losses Paid 1/1/24 - 6/30/24 (2)	Projected Losses Paid as of 6/30/24 (3)	Losses Reported as of 12/31/23 (4)	Projected Losses Reported 1/1/24 - 6/30/24 (5)	Projected Losses Reported as of 6/30/24 (6)
2012-13	\$805,895	\$0	\$805,895	\$805,895	\$0	\$805,895
2013-14	1,756,276	0	1,756,276	1,756,276	0	1,756,276
2014-15	628,110	0	628,110	628,110	0	628,110
2015-16	1,584,642	0	1,584,642	1,584,642	0	1,584,642
2016-17	3,136,304	1,848	3,138,152	3,136,955	1,522	3,138,478
2017-18	2,715,049	66,557	2,781,607	2,799,916	23,759	2,823,674
2018-19	930,719	90,449	1,021,169	1,089,573	25,291	1,114,864
2019-20	1,757,306	44,733	1,802,039	1,819,149	39,484	1,858,633
2020-21	1,023,330	85,203	1,108,533	1,467,982	27,205	1,495,187
2021-22	1,179,440	172,767	1,352,206	2,116,738	27,567	2,144,305
2022-23	121,830	887,070	1,008,900	2,557,239	276,327	2,833,566
2023-24	12,915	46,320	59,235	421,066	972,916	1,393,983
<b>Total</b>	<b>\$15,651,816</b>	<b>\$1,394,949</b>	<b>\$17,046,765</b>	<b>\$20,183,541</b>	<b>\$1,394,071</b>	<b>\$21,577,612</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 12/31/23  
Losses Limited to SIR, Gross of Deductible

Program Year	Estimated Ultimate Losses (1)	Losses Paid as of 12/31/23 (2)	Case Reserves 12/31/23 (3)	Losses Reported as of 12/31/23 (4)	Estimated IBNR as of 12/31/23 (5)	Estimated Unpaid Losses as of 12/31/23 (6)
2012-13	\$805,895	\$805,895	\$0	\$805,895	\$0	\$0
2013-14	1,756,276	1,756,276	0	1,756,276	0	0
2014-15	628,110	628,110	0	628,110	0	0
2015-16	1,584,642	1,584,642	0	1,584,642	0	0
2016-17	3,140,000	3,136,304	652	3,136,955	3,045	3,696
2017-18	2,850,000	2,715,049	84,866	2,799,916	50,084	134,951
2018-19	1,160,000	930,719	158,854	1,089,573	70,427	229,281
2019-20	2,020,000	1,757,306	61,843	1,819,149	200,851	262,694
2020-21	1,690,000	1,023,330	444,652	1,467,982	222,018	666,670
2021-22	2,500,000	1,179,440	937,298	2,116,738	383,262	1,320,560
2022-23	3,650,000	121,830	2,435,409	2,557,239	1,092,761	3,528,170
2023-24	1,520,000	12,915	408,151	421,066	1,098,934	1,507,085
<b>Total</b>	<b>\$23,304,923</b>	<b>\$15,651,816</b>	<b>\$4,531,725</b>	<b>\$20,183,541</b>	<b>\$3,121,382</b>	<b>\$7,653,107</b>

## Notes:

- (1) Page 33, Column (6).  
2023-24 entry adjusted for incomplete year through 12/31/23.
- (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 6/30/24  
Losses Limited to Deductible

Program Year	Estimated Ultimate Deductibles (1)	Projected Ded Paid as of 6/30/24 (2)	Projected Case Reserves 6/30/24 (3)	Projected Ded Reported as of 6/30/24 (4)	Projected Deductible IBNR as of 6/30/24 (5)	Projected Deductible Losses as of 6/30/24 (6)
2012-13	\$136,719	\$136,719	\$0	\$136,719	\$0	\$0
2013-14	158,781	158,781	0	158,781	0	0
2014-15	143,737	143,737	0	143,737	0	0
2015-16	198,698	198,698	0	198,698	0	0
2016-17	267,000	266,440	90	266,530	470	560
2017-18	219,266	219,266	0	219,266	0	0
2018-19	164,826	164,826	0	164,826	0	0
2019-20	231,000	229,803	901	230,703	297	1,197
2020-21	216,000	203,225	11,953	215,178	822	12,775
2021-22	296,000	243,545	50,700	294,246	1,754	52,455
2022-23	819,000	405,395	386,233	791,628	27,372	413,605
2023-24	690,000	59,235	417,246	476,481	213,519	630,765
Total	\$3,541,027	\$2,429,670	\$867,123	\$3,296,793	\$244,234	\$1,111,357

## Notes:

- (1) Page 63, 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 1/1/24 and 6/30/24  
Losses Limited to \$10K or \$25K Deductible

Program Year	Ded Paid as of 12/31/23 (1)	Projected Losses Paid 1/1/24 - 6/30/24 (2)	Projected Losses Paid as of 6/30/24 (3)	Losses Reported as of 12/31/23 (4)	Projected Losses Reported 1/1/24 - 6/30/24 (5)	Projected Losses Reported as of 6/30/24 (6)
2012-13	\$136,719	\$0	\$136,719	\$136,719	\$0	\$136,719
2013-14	158,781	0	158,781	158,781	0	158,781
2014-15	143,737	0	143,737	143,737	0	143,737
2015-16	198,698	0	198,698	198,698	0	198,698
2016-17	265,878	561	266,440	266,530	0	266,530
2017-18	219,266	0	219,266	219,266	0	219,266
2018-19	164,826	0	164,826	164,826	0	164,826
2019-20	229,670	133	229,803	230,407	297	230,703
2020-21	192,061	11,164	203,225	214,911	267	215,178
2021-22	222,499	21,047	243,545	293,984	262	294,246
2022-23	121,830	283,565	405,395	769,238	22,390	791,628
2023-24	12,915	46,320	59,235	247,566	228,915	476,481
Total	\$2,066,879	\$362,791	\$2,429,670	\$3,044,662	\$252,131	\$3,296,793

## 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 12/31/23  
Losses Limited to Deductible Amount

Program Year	Estimated Ultimate Deductibles (1)	Ded Paid as of 12/31/23 (2)	Case Reserves 12/31/23 (3)	Ded Reported as of 12/31/23 (4)	Estimated Deductible IBNR as of 12/31/23 (5)	Estimated Deductible Losses as of 12/31/23 (6)
2012-13	\$136,719	\$136,719	\$0	\$136,719	\$0	\$0
2013-14	158,781	158,781	0	158,781	0	0
2014-15	143,737	143,737	0	143,737	0	0
2015-16	198,698	198,698	0	198,698	0	0
2016-17	267,000	265,878	652	266,530	470	1,122
2017-18	219,266	219,266	0	219,266	0	0
2018-19	164,826	164,826	0	164,826	0	0
2019-20	231,000	229,670	737	230,407	593	1,330
2020-21	216,000	192,061	22,850	214,911	1,089	23,939
2021-22	296,000	222,499	71,486	293,984	2,016	73,501
2022-23	819,000	121,830	647,408	769,238	49,762	697,170
2023-24	345,000	12,915	234,651	247,566	97,434	332,085
Total	\$3,196,027	\$2,066,879	\$977,783	\$3,044,662	\$151,365	\$1,129,147

## Notes:

- (1) Page 63, Column (3).  
2022-23 onward from Page 66, Column (3).  
2023-24 adjusted for incomplete year through 12/31/23.
- (2) Provided by Risk Management Services.
- (3) (4) - (2).
- (4) Page 64, 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 Deductible

Program Year	Reported Projection (1)	Paid Projection (2)	IBNR to Case Reserves Ratio (3)	B-F Method Using Reported (4)	Frequency Times Severity (5)	Selected Ultimate Losses (6)
2012-13	\$805,895	\$805,895	\$805,895	\$805,895	\$1,162,277	\$805,895
2013-14	1,756,276	1,756,276	1,756,276	1,756,276	1,131,189	1,756,276
2014-15	628,110	628,359	628,110	628,110	1,422,976	628,110
2015-16	1,588,887	1,589,021	1,584,642	1,589,733	1,644,941	1,584,642
2016-17	3,146,384	3,149,871	3,138,445	3,142,343	2,166,037	3,140,000
2017-18	2,854,209	2,832,170	2,872,222	2,835,949	1,845,529	2,850,000
2018-19	1,134,960	1,027,227	1,207,284	1,169,628	1,667,094	1,160,000
2019-20	2,007,559	2,062,771	1,926,137	2,017,565	2,088,352	2,020,000
2020-21	1,643,083	1,494,843	1,694,755	1,712,021	2,383,637	1,690,000
2021-22	2,515,892	2,956,464	2,453,228	2,509,095	3,106,539	2,500,000
2022-23	4,325,621	999,875	4,678,480	3,645,424	3,069,230	3,650,000
2023-24	4,770,157	3,546,805	4,818,078	3,039,573	2,979,900	3,040,000
<b>Total</b>	<b>\$27,177,033</b>	<b>\$22,849,577</b>	<b>\$27,563,552</b>	<b>\$24,851,612</b>	<b>\$24,667,701</b>	<b>\$24,824,923</b>

## 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 Deductible

Program Year	Cumulative Reported Losses as of 12/31/23 (1)	Reported Development Factor as of 12/31/23 (2)	Projected Ultimate Losses (3)
2012-13	\$805,895	1.000	\$805,895
2013-14	1,756,276	1.000	1,756,276
2014-15	628,110	1.000	628,110
2015-16	1,584,642	1.003	1,588,887
2016-17	3,136,955	1.003	3,146,384
2017-18	2,799,916	1.019	2,854,209
2018-19	1,089,573	1.042	1,134,960
2019-20	1,819,149	1.104	2,007,559
2020-21	1,467,982	1.119	1,643,083
2021-22	2,116,738	1.189	2,515,892
2022-23	2,557,239	1.692	4,325,621
2023-24	421,066	11.329	4,770,157
Total	\$20,183,541		\$27,177,033

## Notes:

- (1) Provided by Risk Management Services.
- (2) Page 70.
- (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 Deductible

Program Year	Cumulative Paid Losses as of 12/31/23 (1)	Paid Development Factor as of 12/31/23 (2)	Projected Ultimate Losses (3)
2012-13	\$805,895	1.000	\$805,895
2013-14	1,756,276	1.000	1,756,276
2014-15	628,110	1.000	628,359
2015-16	1,584,642	1.003	1,589,021
2016-17	3,136,304	1.004	3,149,871
2017-18	2,715,049	1.043	2,832,170
2018-19	930,719	1.104	1,027,227
2019-20	1,757,306	1.174	2,062,771
2020-21	1,023,330	1.461	1,494,843
2021-22	1,179,440	2.507	2,956,464
2022-23	121,830	8.207	999,875
2023-24	12,915	274.620	3,546,805
Total	\$15,651,816		\$22,849,577

## Notes:

- (1) Provided by Risk Management Services.
- (2) Page 71.
- (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 Deductible

Program Year	Reported Development Factor as of 12/31/23 (1)	Paid Development Factor as of 12/31/23 (2)	IBNR to Case Reserves Ratio (3)	Case Reserves 12/31/23 (4)	Estimated IBNR as of 12/31/23 (5)	Estimated Ultimate Losses (6)
2012-13	1.000	1.000	0.000	\$0	\$0	\$805,895
2013-14	1.000	1.000	0.000	0	0	1,756,276
2014-15	1.000	1.000	0.000	0	0	628,110
2015-16	1.003	1.003	31.690	0	0	1,584,642
2016-17	1.003	1.004	2.287	652	1,490	3,138,445
2017-18	1.019	1.043	0.852	84,866	72,306	2,872,222
2018-19	1.042	1.104	0.741	158,854	117,711	1,207,284
2019-20	1.104	1.174	1.730	61,843	106,988	1,926,137
2020-21	1.119	1.461	0.510	444,652	226,773	1,694,755
2021-22	1.189	2.507	0.359	937,298	336,490	2,453,228
2022-23	1.692	8.207	0.871	2,435,409	2,121,241	4,678,480
2023-24	11.329	274.620	10.773	408,151	4,397,012	4,818,078
Total				\$4,531,725	\$7,380,011	\$27,563,552

## 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 Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Reported Loss Development Factors (2)	Percentage of Losses Not Yet Reported (3)	Expected Unreported Losses (4)	Losses Reported as of 12/31/23 (5)	Estimated Ultimate Losses (6)
2012-13	\$1,436,135	1.000	0.0%	\$0	\$805,895	\$805,895
2013-14	1,517,313	1.000	0.0%	\$0	1,756,276	1,756,276
2014-15	1,605,133	1.000	0.0%	0	628,110	628,110
2015-16	1,697,084	1.003	0.3%	5,091	1,584,642	1,589,733
2016-17	1,795,953	1.003	0.3%	5,388	3,136,955	3,142,343
2017-18	1,896,465	1.019	1.9%	36,033	2,799,916	2,835,949
2018-19	2,001,385	1.042	4.0%	80,055	1,089,573	1,169,628
2019-20	2,110,811	1.104	9.4%	198,416	1,819,149	2,017,565
2020-21	2,280,739	1.119	10.7%	244,039	1,467,982	1,712,021
2021-22	2,467,656	1.189	15.9%	392,357	2,116,738	2,509,095
2022-23	2,660,599	1.692	40.9%	1,088,185	2,557,239	3,645,424
2023-24	2,871,170	11.329	91.2%	2,618,507	421,066	3,039,573

## Notes:

- (1) Page 38, Column (4).
- (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 Deductible

Program Year	<i>A Priori</i> 2023-24 Loss (1)	Factor to Remove Trend (2)	Payroll Trended to 2023-24 (\$100's) (3)	<i>A Priori</i> Ultimate Losses (4)
2012-13	\$3.46	0.552	\$751,935	\$1,436,135
2013-14	3.46	0.578	758,702	1,517,313
2014-15	3.46	0.606	765,530	1,605,133
2015-16	3.46	0.635	772,420	1,697,084
2016-17	3.46	0.666	779,372	1,795,953
2017-18	3.46	0.697	786,386	1,896,465
2018-19	3.46	0.729	793,464	2,001,385
2019-20	3.46	0.762	800,605	2,110,811
2020-21	3.46	0.816	807,810	2,280,739
2021-22	3.46	0.875	815,081	2,467,656
2022-23	3.46	0.935	822,416	2,660,599
2023-24	3.46	1.000	829,818	2,871,170

## Notes:

- (1) Page 39, Average of Column (3).
- (2)  $1.000 / [\text{Page 39, Column (2)}]$ .
- (3) Page 73, Average of Column (3).
- (4)  $(1) \times (2) \times (3)$ .

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

Program Year	<i>A Priori</i> Ultimate Losses (1)	Estimated Pure Premium Trend (2)	Constant Dollar Ultimate Losses (3)	Payroll Trended to 2023-24 (\$100's) (4)	Rate at 2023-24 Cost Level (5)	Selected Weights (6)
2012-13	\$805,895	1.813	\$1,460,945	\$751,935	\$1.94	1.00
2013-14	1,756,276	1.730	3,037,649	758,702	4.00	1.00
2014-15	628,110	1.650	1,036,333	765,530	1.35	1.00
2015-16	1,584,642	1.574	2,493,708	772,420	3.23	1.00
2016-17	3,148,127	1.501	4,724,727	779,372	6.06	1.00
2017-18	2,843,317	1.435	4,080,877	786,386	5.19	0.98
2018-19	1,089,573	1.372	1,495,121	793,464	1.88	0.96
2019-20	2,034,313	1.312	2,668,222	800,605	3.33	0.91
2020-21	1,578,773	1.225	1,933,828	807,810	2.39	0.89
2021-22	2,657,601	1.143	3,038,516	815,081	3.73	0.84
2022-23	3,757,305	1.069	4,016,428	822,416	4.88	0.59
Weighted Average All years					\$3.41	
Weighted Average 19/20-22/23					\$3.46	
(7) Selected A Priori 2023-24 Loss Rate:					\$3.46	

## Notes:

- (1) Page 40, Column (3).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 73, Column (3).
- (7) (3) / (4).
- (6) Inverse of LDF on Page 34.
- (7) Weighted Average 2019-20 to 2022-23.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

*A Priori* Ultimate losses  
Losses Limited to SIR, Gross of Deductible

Program Year	Reported Loss Projection (1)	Paid Loss Projection (2)	<i>A Priori</i> Selection (3)
2012-13	\$805,895	\$805,895	\$805,895
2013-14	1,756,276	1,756,276	1,756,276
2014-15	628,110	628,359	628,110
2015-16	1,588,887	1,589,021	1,584,642
2016-17	3,146,384	3,149,871	3,148,127
2017-18	2,854,209	2,832,170	2,843,317
2018-19	1,134,960	1,027,227	1,089,573
2019-20	2,007,559	2,062,771	2,034,313
2020-21	1,643,083	1,494,843	1,578,773
2021-22	2,515,892	2,956,464	2,657,601
2022-23	4,325,621	999,875	3,757,305
2023-24	4,770,157	3,546,805	4,721,690
Total	\$27,177,033	\$22,849,577	\$26,605,622

## 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 Deductible

Program Year	Selected Claim Severity (1)	Factor to Remove Trend (2)	Selected Ultimate Claims (3)	Estimated Ultimate Losses (4)
2012-13	\$30,100	0.552	70	\$1,162,277
2013-14	30,100	0.578	65	1,131,189
2014-15	30,100	0.606	78	1,422,976
2015-16	30,100	0.635	86	1,644,941
2016-17	30,100	0.666	108	2,166,037
2017-18	30,100	0.697	88	1,845,529
2018-19	30,100	0.729	76	1,667,094
2019-20	30,100	0.762	91	2,088,352
2020-21	30,100	0.816	97	2,383,637
2021-22	30,100	0.875	118	3,106,539
2022-23	30,100	0.935	109	3,069,230
2023-24	30,100	1.000	99	2,979,900

## 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 Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Estimated Severity Trend (2)	Selected Claim Count (3)	Trended Claim Severity (4)
2012-13	\$805,895	1.813	70	\$20,871
2013-14	1,756,276	1.730	65	46,733
2014-15	628,110	1.650	78	13,286
2015-16	1,584,642	1.574	86	28,997
2016-17	3,148,127	1.501	108	43,747
2017-18	2,843,317	1.435	88	46,374
2018-19	1,089,573	1.372	76	19,673
2019-20	2,034,313	1.312	91	29,321
2020-21	1,578,773	1.225	97	19,936
2021-22	2,657,601	1.143	118	25,750
2022-23	3,757,305	1.069	109	36,848
2023-24	4,721,690	1.000	99	47,694
Average				\$31,603
12/13-22/23				\$30,140
			(5) Selected Severity:	\$30,100

## Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Selected Claim Counts

Program Year	Reported Claim Count Projection (1)	Bornhuetter- Ferguson Method (2)	Selected Claim Count (3)
2012-13	70		70
2013-14	65		65
2014-15	78		78
2015-16	86		86
2016-17	108		108
2017-18	88		88
2018-19	76		76
2019-20	91		91
2020-21	97		97
2021-22	118		118
2022-23	109		109
2023-24	88	99	99

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 Year	Total Claims Reported 12/31/23 <u>(1)</u>	Development Factors as of 12/31/23 <u>(2)</u>	Projected Ultimate Claims <u>(3)</u>
2012-13	70	1.000	70
2013-14	65	1.000	65
2014-15	78	1.000	78
2015-16	85	1.007	86
2016-17	107	1.014	108
2017-18	86	1.023	88
2018-19	73	1.045	76
2019-20	86	1.056	91
2020-21	91	1.064	97
2021-22	108	1.090	118
2022-23	96	1.137	109
2023-24	22	4.004	88

## Notes:

- (1) Provided by Risk Management Services.
- (2) Page 72.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projection of Ultimate Claim Counts  
Bornhuetter-Ferguson Method

Program Year	A Priori Claim Count (1)	Claim Development Factor (2)	Estimated Percentage of Claims Unreported (3)	Estimated Unreported Claims (4)	Reported Claims as of 12/31/23 (5)	Projected Ultimate Claims (6)
2023-24	102	4.004	75.0%	77	22	99

Notes:

- (1) Page 46, Item (6).
- (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  
General and Auto Liability Program

Calculation of Expected # of Indemnity Claims  
A Priori Claim Count

Program Year	Projected Ultimate Indemnity Claims (1)	Payroll Trended to 2023-24 (\$Millions) (2)	Indicated Indemnity Claim Frequency (3)
2012-13	70	\$75.2	0.93
2013-14	65	75.9	0.86
2014-15	78	76.6	1.02
2015-16	86	77.2	1.11
2016-17	108	77.9	1.39
2017-18	88	78.6	1.12
2018-19	76	79.3	0.96
2019-20	91	80.1	1.14
2020-21	97	80.8	1.20
2021-22	118	81.5	1.45
2022-23	109	82.2	1.33
2023-24	88	83.0	1.06
Average			1.13
12/13-22/23			1.14
(4) Selected Claim Frequency:			1.22
(5) 2023-24 Trended Payroll (\$Millions):			\$83.0
(6) 2023-24 A Priori Indemnity Claims:			102

Notes:

- (1) Page 44, Column (3).
- (2) Page 73, Column (3) / 10,000.
- (3) (1) / (2).
- (4) Selected on the basis of (3).
- (5) (2).
- (6) (4) x (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 Deductible

Program Year	Reported Projection (1)	Paid Projection (2)	IBNR to Case Reserves Ratio (3)	B-F Method Using Reported (4)	B-F Method Using Paid (5)	Selected Ultimate Losses (6)
2012-13	\$734,087	\$734,087	\$734,087	\$734,087	\$734,087	\$734,087
2013-14	1,006,276	1,006,276	1,006,276	1,006,276	1,006,276	1,006,276
2014-15	483,248	483,285	483,248	483,248	483,248	483,248
2015-16	1,276,533	1,276,533	1,273,122	1,276,845	1,276,845	1,273,122
2016-17	1,956,605	1,955,951	1,950,741	1,954,611	1,953,959	1,960,000
2017-18	1,557,823	1,557,823	1,528,190	1,553,688	1,553,688	1,528,190
2018-19	801,896	649,342	1,102,468	825,556	693,172	820,000
2019-20	1,538,379	1,528,563	1,574,198	1,530,817	1,519,560	1,540,000
2020-21	1,572,642	1,322,767	1,678,443	1,568,164	1,371,368	1,540,000
2021-22	2,011,599	1,966,039	2,017,182	1,956,960	1,754,069	2,000,000
2022-23	2,878,396	772,085	3,103,483	2,469,691	1,535,775	2,680,000
2023-24	3,853,652	2,507,835	3,912,799	1,996,089	1,771,780	2,000,000
<b>Total</b>	<b>\$19,671,136</b>	<b>\$15,760,586</b>	<b>\$20,364,237</b>	<b>\$17,356,032</b>	<b>\$15,653,829</b>	<b>\$17,564,923</b>

Notes:

- (1) Page 49, Column (3).
- (2) Page 50, Column (3).
- (3) Page 51, Column (6).
- (4) Page 52, Column (6).
- (5) Page 53, 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 Deductible

Program Year	Cumulative Reported Losses as of 12/31/23 <u>(1)</u>	Reported Development Factor as of 12/31/23 <u>(2)</u>	Projected Ultimate Losses <u>(3)</u>
2012-13	\$734,087	1.000	\$734,087
2013-14	1,006,276	1.000	1,006,276
2014-15	483,248	1.000	483,248
2015-16	1,273,122	1.003	1,276,533
2016-17	1,950,741	1.003	1,956,605
2017-18	1,528,190	1.019	1,557,823
2018-19	769,829	1.042	801,896
2019-20	1,411,032	1.090	1,538,379
2020-21	1,430,040	1.100	1,572,642
2021-22	1,747,738	1.151	2,011,599
2022-23	1,898,739	1.516	2,878,396
2023-24	421,066	9.152	3,853,652

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 Deductible

Program Year	Cumulative Paid Losses as of 12/31/23 (1)	Paid Development Factor as of 12/31/23 (2)	Projected Ultimate Losses (3)
2012-13	\$734,087	1.000	\$734,087
2013-14	1,006,276	1.000	1,006,276
2014-15	483,248	1.000	483,285
2015-16	1,273,122	1.003	1,276,533
2016-17	1,950,089	1.003	1,955,951
2017-18	1,528,190	1.019	1,557,823
2018-19	610,975	1.063	649,342
2019-20	1,370,912	1.115	1,528,563
2020-21	990,388	1.336	1,322,767
2021-22	840,520	2.339	1,966,039
2022-23	121,830	6.337	772,085
2023-24	12,915	194.175	2,507,835

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 Deductible

Program Year	Reported LDF (1)	Paid LDF (2)	IBNR to Case Reserves Ratio (3)	Case Reserves as of 12/31/23 (4)	Estimated IBNR as of as of 12/31/23 (5)	Estimated Ultimate Losses (6)
2012-13	1.000	1.000	0.000	\$0	\$0	\$734,087
2013-14	1.000	1.000	0.000	0	0	1,006,276
2014-15	1.000	1.000	0.000	0	0	483,248
2015-16	1.003	1.003	0.000	0	0	1,273,122
2016-17	1.003	1.003	0.000	652	0	1,950,741
2017-18	1.019	1.019	0.000	0	0	1,528,190
2018-19	1.042	1.063	2.094	158,854	332,639	1,102,468
2019-20	1.090	1.115	4.067	40,119	163,166	1,574,198
2020-21	1.100	1.336	0.565	439,652	248,403	1,678,443
2021-22	1.151	2.339	0.297	907,218	269,444	2,017,182
2022-23	1.516	6.337	0.678	1,776,909	1,204,744	3,103,483
2023-24	9.152	194.175	8.555	408,151	3,491,733	3,912,799

Notes:

- (1) Page 49, Column (2).
- (2) Page 50, Column (2).
- (3)  $[(1) - 1.000] \times (2) / [(2) - (1)]$ .
- (4) Page 49, Column (1) - Page 50, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 49, 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 Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Reported Loss Development Factors (2)	Percentage of Losses Not Yet Reported (3)	Expected Unreported Losses (4)	Losses Reported as of 12/31/23 (5)	Estimated Ultimate Losses (6)
2012-13	\$1,105,396	1.000	0.0%	\$0	\$734,087	\$734,087
2013-14	1,149,099	1.000	0.0%	0	1,006,276	1,006,276
2014-15	1,194,418	1.000	0.0%	0	483,248	483,248
2015-16	1,240,843	1.003	0.3%	3,723	1,273,122	1,276,845
2016-17	1,290,132	1.003	0.3%	3,870	1,950,741	1,954,611
2017-18	1,341,991	1.019	1.9%	25,498	1,528,190	1,553,688
2018-19	1,393,167	1.042	4.0%	55,727	769,829	825,556
2019-20	1,443,189	1.090	8.3%	119,785	1,411,032	1,530,817
2020-21	1,517,849	1.100	9.1%	138,124	1,430,040	1,568,164
2021-22	1,597,115	1.151	13.1%	209,222	1,747,738	1,956,960
2022-23	1,679,269	1.516	34.0%	570,952	1,898,739	2,469,691
2023-24	1,767,703	9.152	89.1%	1,575,023	421,066	1,996,089

Notes:

- (1) Page 33, Column (6), adjusted for \$250K limit.
- (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  
General and Auto Liability Program

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

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Paid Loss Development Factors (2)	Percentage of Losses Not Yet Paid (3)	Expected Unpaid Losses (4)	Losses Paid as of 12/31/23 (5)	Estimated Ultimate Losses (6)
2012-13	\$1,105,396	1.000	0.0%	\$0	\$734,087	\$734,087
2013-14	1,149,099	1.000	0.0%	0	1,006,276	1,006,276
2014-15	1,194,418	1.000	0.0%	0	483,248	483,248
2015-16	1,240,843	1.003	0.3%	3,723	1,273,122	1,276,845
2016-17	1,290,132	1.003	0.3%	3,870	1,950,089	1,953,959
2017-18	1,341,991	1.019	1.9%	25,498	1,528,190	1,553,688
2018-19	1,393,167	1.063	5.9%	82,197	610,975	693,172
2019-20	1,443,189	1.115	10.3%	148,648	1,370,912	1,519,560
2020-21	1,517,849	1.336	25.1%	380,980	990,388	1,371,368
2021-22	1,597,115	2.339	57.2%	913,549	840,520	1,754,069
2022-23	1,679,269	6.337	84.2%	1,413,945	121,830	1,535,775
2023-24	1,767,703	194.175	99.5%	1,758,865	12,915	1,771,780

Notes:

- (1) Page 52, Column (1).
- (2) Page 50, Column (2).
- (3)  $100\% - [ 1.000 / (2) ]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 50, 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 2024-25 \*  
Gross of \$25K Deductible

Based on 250K Limit Analysis

Program Year	250K Limit Loss Rate (1)	Factor for 1M/500K SIR (2)	Projected 1M/500K SIR Loss Rate (3)
2024-25	\$2.24	1.596	\$3.58

Based on 1M/500K Limit Analysis

Program Year	1M/500K SIR Loss Rate (4)	Factor for 1M/500K SIR (5)	Projected 1M/500K SIR Loss Rate (6)
2024-25	\$3.63	1.000	\$3.63

Program Year	Selected 2024-25 1M/500K SIR Loss Rate (7)	Projected 2024-25 Payroll (\$00's) (8)	Projected Ultimate Losses (9)
2024-25	<b>\$3.63</b>	\$871,309	<b>\$3,162,851</b>
25K Deductible:	<b>\$0.60</b>		<b>\$523,943</b>
Net of 25K Deductible:	<b>\$3.03</b>		<b>\$2,638,908</b>

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

Notes:

- (1) Page 56, Item (7).
  - (2) Estimated by BAC.
  - (3) (1) x (2), rounded.
  - (4) Page 57, Item (7).
  - (5) Estimated by BAC.
  - (6) (4) x (5), rounded.
  - (7) Selected by BAC.
  - (8) Page 73, Column (2).
  - (9) (7) x (8), rounded.
- Deductible calculated as % of \$250K limit losses.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Future Loss Rate  
Losses Limited to \$250,000, Gross of \$25K Deductible

Program Year	Estimated Ultimate Losses (1)	Trend to 2024-25 (2)	Losses Trended to 2024-25 (3)	Payroll Trended to 2024-25 (\$100's) (4)	Rate at 2024-25 Cost Level (5)	Selected Weights (6)
2012-13	\$734,087	1.467	\$1,076,974	\$782,489	\$1.38	1.00
2013-14	1,006,276	1.424	1,433,279	789,531	1.82	1.00
2014-15	483,248	1.383	668,138	796,637	0.84	1.00
2015-16	1,273,122	1.342	1,708,640	803,807	2.13	1.00
2016-17	1,960,000	1.303	2,553,727	811,041	3.15	1.00
2017-18	1,528,190	1.266	1,935,174	818,340	2.36	0.98
2018-19	820,000	1.232	1,010,507	825,705	1.22	0.96
2019-20	1,540,000	1.182	1,820,795	833,137	2.19	0.92
2020-21	1,540,000	1.135	1,747,577	840,635	2.08	0.91
2021-22	2,000,000	1.088	2,175,944	848,201	2.57	0.87
2022-23	2,680,000	1.043	2,796,273	855,835	3.27	0.66
	2,000,000					
				Weighted Average:	\$2.05	
				Weighted Average 15-16 through 22-23:	\$2.34	
				Weighted Average 15-16 through 21-22:	\$2.24	
				(7) Projected 2024-25 \$250K Limit Rate:	\$2.24	
				(8) Projected 2024-25 \$250K Limit Losses:	\$1,955,011	

Notes:

- (1) Page 48, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 73, Column (4).
- (5) (4) / (3).
- (6) Inverse of LDF on Page 50.
- (7) Based on (5).
- (8) (7) x 2024-25 projected payroll.

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Projected Future Loss Rate  
Losses Limited to \$1M/\$500K, Gross of \$25K Deductible

Program Year	Estimated Ultimate Losses (1)	Trend to 2024-25 (2)	Losses Trended to 2024-25 (3)	Payroll Trended to 2024-25 (\$100's) (4)	Rate at 2024-25 Cost Level (5)	Selected Weights (6)
2012-13	\$805,895	1.848	\$1,489,091	\$782,489	\$1.90	1.00
2013-14	1,756,276	1.763	3,095,669	789,531	3.92	1.00
2014-15	628,110	1.681	1,055,962	796,637	1.33	1.00
2015-16	1,584,642	1.603	2,540,702	803,807	3.16	1.00
2016-17	3,140,000	1.533	4,814,553	811,041	5.94	1.00
2017-18	2,850,000	1.466	4,177,947	818,340	5.11	0.98
2018-19	1,160,000	1.401	1,625,400	825,705	1.97	0.96
2019-20	2,020,000	1.309	2,643,307	833,137	3.17	0.91
2020-21	1,690,000	1.221	2,064,223	840,635	2.46	0.89
2021-22	2,500,000	1.142	2,854,971	848,201	3.37	0.84
2022-23	3,650,000	1.068	3,899,339	855,835	4.56	0.59
Weighted Average:					\$3.32	
Weighted Average 15-16 through 22-23:					\$3.71	
Weighted Average 15-16 through 21-22:					\$3.63	
(7) Projected 2024-25 \$1M/\$500k Limit Rate:					\$3.63	

Notes:

- (1) Page 33, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 73, Column (4).
- (5) (4) / (3).
- (6) Inverse of LDF on Page 34.
- (7) Based on (5).

**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 6/30/24  
Assuming a 3.0% Interest Rate

Losses Limited to SIR, NET of Deductible

Program Year	Projected Unpaid Losses (1)	Discount Factor (2)	Discounted Unpaid Losses (3)
2012-13	\$0	1.000	\$0
2013-14	0	1.000	0
2014-15	0	1.000	0
2015-16	0	1.000	0
2016-17	1,288	1.000	1,288
2017-18	68,393	0.985	67,390
2018-19	138,831	0.970	134,723
2019-20	216,764	0.968	209,721
2020-21	568,692	0.971	552,133
2021-22	1,095,339	0.952	1,042,939
2022-23	2,227,495	0.947	2,109,131
2023-24	2,350,000	0.933	2,193,404
Total	\$6,666,801		\$6,310,729
	(4) Indicated Discount Factor:		0.947

Notes:

- (1) Page 24, Column (6).
- (2) (3) / (1).
- (3) Based upon a 3.0% interest rate.
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
 General and Auto Liability Program

Discounted Value of 2024-25 Losses as of 7/1/24  
 Assuming a 3.0% Interest Rate

Losses Limited to \$1M SIR, Gross of \$25K Deductible

Program Year	Projected Loss Payments (1)	Discounted Value Factor (2)	Discounted Value of Payments (3)
2024-25	\$61,629	0.985	\$60,725
2025-26	812,618	0.957	777,375
2026-27	836,484	0.929	776,899
2027-28	363,899	0.902	328,134
2028-29	746,945	0.875	653,915
2029-30	183,134	0.850	155,655
2030-31	82,241	0.825	67,865
2031-32	75,901	0.801	60,809
2032-33	0	0.778	0
2033-34	0	0.755	0
2034-35	0	0.733	0
Total	\$3,162,851		\$2,881,377

(4) Indicated Discount Factor: 0.911

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 3.0% interest rate.
- (3) (1) x (2).
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Discounted Value of 2024-25 Losses as of 7/1/24  
Assuming a 3.0% Interest Rate

Losses Limited to \$1M SIR, NET of \$25K Deductible

Program Year	Projected Loss Payments (1)	Discount Factor (2)	Discounted Value of Payments (3)
2024-25	\$0	0.985	\$0
2025-26	562,556	0.957	538,158
2026-27	764,874	0.929	710,390
2027-28	293,348	0.902	264,516
2028-29	698,389	0.875	611,406
2029-30	187,797	0.850	159,619
2030-31	63,334	0.825	52,263
2031-32	68,612	0.801	54,969
2032-33	0	0.778	0
2033-34	0	0.755	0
2034-35	0	0.733	0
<b>Total</b>	<b>\$2,638,908</b>		<b>\$2,391,321</b>

(4) Indicated Discount Factor: 0.906

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 3.0% interest rate.
- (3) (1) x (2).
- (4) [ Sum of Column (3) ] / [ Sum of Column (1) ].

**Monterey Bay Area Self Insurance Authority**

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

**Deductibles**

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

Program Year	Reported Projection (1)	B-F Method Using Reported (2)	Selected Ultimate Losses (3)
2012-13	\$136,719	\$136,719	\$136,719
2013-14	158,781	158,781	158,781
2014-15	143,737	143,737	143,737
2015-16	198,698	198,698	198,698
2016-17	266,530	266,530	267,000
2017-18	219,266	219,266	219,266
2018-19	164,826	164,826	164,826
2019-20	230,407	230,407	231,000
2020-21	215,271	215,403	216,000
2021-22	295,244	295,246	296,000
2022-23	430,736	430,019	431,000
2023-24	624,626	373,589	380,000
Total	\$3,084,841	\$2,833,220	\$2,843,027

Notes:

- (1) Page 64, Column (3).
- (2) Page 65, Column (6).
- (3) Selected on the basis of (1) - (2).

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

Program Year	Cumulative Reported Losses as of 12/31/23 (1)	Reported Development Factor as of 12/31/23 (2)	Projected Ultimate Losses (3)
2012-13	\$136,719	1.000	\$136,719
2013-14	158,781	1.000	158,781
2014-15	143,737	1.000	143,737
2015-16	198,698	1.000	198,698
2016-17	266,530	1.000	266,530
2017-18	219,266	1.000	219,266
2018-19	164,826	1.000	164,826
2019-20	230,407	1.000	230,407
2020-21	214,911	1.002	215,271
2021-22	293,984	1.004	295,244
2022-23	411,654	1.046	430,736
2023-24	130,066	4.802	624,626
Total	\$2,569,578		\$3,084,841

Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

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

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Reported Loss Development Factors (2)	Percentage of Losses Not Yet Reported (3)	Expected Unreported Losses (4)	Limited Losses Reported as of 12/31/23 (5)	Estimated Ultimate Deductible Losses (6)
2012-13	\$127,201	1.000	0.0%	\$0	\$136,719	\$136,719
2013-14	172,410	1.000	0.0%	0	158,781	158,781
2014-15	81,968	1.000	0.0%	0	143,737	143,737
2015-16	213,761	1.000	0.0%	0	198,698	198,698
2016-17	325,724	1.000	0.0%	0	266,530	266,530
2017-18	251,375	1.000	0.0%	0	219,266	219,266
2018-19	133,670	1.000	0.0%	0	164,826	164,826
2019-20	249,069	1.000	0.0%	0	230,407	230,407
2020-21	246,041	1.002	0.2%	492	214,911	215,403
2021-22	315,573	1.004	0.4%	1,262	293,984	295,246
2022-23	417,389	1.046	4.4%	18,365	411,654	430,019
2023-24	307,478	4.802	79.2%	243,523	130,066	373,589
Total	\$2,841,659			\$263,642	\$2,569,578	\$2,833,220

Notes:

- (1) Page 48, Column (6), adjusted for \$10K limit.
- (2) Page 64, Column (2).
- (3)  $100\% - [ 1.000 / (2) ]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 64, Column (1).
- (6)  $(4) + (5)$ .

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Selected Ultimate Deductible Losses  
Losses Limited to \$25,000 Deductible

Program Year	Reported Projection (1)	B-F Method Using Reported (2)	Selected Ultimate Losses (3)
2012-13	\$230,904	\$230,904	\$230,904
2013-14	288,623	288,623	288,623
2014-15	202,656	202,656	202,656
2015-16	371,484	371,484	371,484
2016-17	467,921	467,921	468,000
2017-18	406,857	406,857	406,857
2018-19	293,921	293,921	294,000
2019-20	470,867	470,908	471,000
2020-21	411,061	411,531	412,000
2021-22	520,724	521,043	522,000
2022-23	824,700	818,907	819,000
2023-24	1,250,761	684,346	690,000
<b>Total</b>	<b>\$5,740,479</b>	<b>\$5,169,101</b>	<b>\$5,176,524</b>

Notes:

- (1) Page 67, Column (3).
- (2) Page 68, 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 \$25,000

Program Year	Cumulative Reported Losses as of 12/31/23 (1)	Reported Development Factor as of 12/31/23 (2)	Projected Ultimate Losses (3)
2012-13	230,904	1.000	\$230,904
2013-14	288,623	1.000	288,623
2014-15	202,656	1.000	202,656
2015-16	371,484	1.000	371,484
2016-17	467,921	1.000	467,921
2017-18	406,857	1.000	406,857
2018-19	293,921	1.000	293,921
2019-20	470,462	1.001	470,867
2020-21	407,137	1.010	411,061
2021-22	513,738	1.014	520,724
2022-23	769,238	1.072	824,700
2023-24	247,566	5.052	1,250,761
<b>Total</b>	<b>\$4,670,507</b>		<b>\$5,740,479</b>

Notes:

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

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Bornhuetter-Ferguson Using Reported Losses  
Deductible Losses Limited to \$25,000

Program Year	<i>A Priori</i> Ultimate Losses (1)	Cumulative Reported Loss Development Factors (2)	Percentage of Losses Not Yet Reported (3)	Expected Unreported Losses (4)	Limited Losses Reported as of 12/31/23 (5)	Estimated Ultimate Deductible Losses (6)
2012-13	231,930	1.000	0.0%	\$0	\$230,904	\$230,904
2013-14	313,811	1.000	0.0%	0	288,623	288,623
2014-15	148,928	1.000	0.0%	0	202,656	202,656
2015-16	387,496	1.000	0.0%	0	371,484	371,484
2016-17	588,959	1.000	0.0%	0	467,921	467,921
2017-18	453,128	1.000	0.0%	0	406,857	406,857
2018-19	240,169	1.000	0.0%	0	293,921	293,921
2019-20	446,336	1.001	0.1%	446	470,462	470,908
2020-21	439,400	1.010	1.0%	4,394	407,137	411,531
2021-22	561,937	1.014	1.3%	7,305	513,738	521,043
2022-23	741,334	1.072	6.7%	49,669	769,238	818,907
2023-24	544,613	5.052	80.2%	436,780	247,566	684,346
Total	\$5,098,040			\$498,594	\$4,670,507	\$5,169,101

Notes:

- (1) Page 48, Column (6), adjusted for \$25K limit.
- (2) Page 67, Column (2).
- (3)  $100\% - [ 1.000 / (2) ]$ .
- (4)  $(1) \times (3)$ .
- (5) Page 67, 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 - Includes EPL

Cumulative Reported Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/23

Program	Months of Development										
	<u>6</u>	<u>18</u>	<u>30</u>	<u>42</u>	<u>54</u>	<u>66</u>	<u>78</u>	<u>90</u>	<u>102</u>	<u>114</u>	<u>126</u>
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	729
2011	76	819	2,507	2,500	2,304	2,334	2,240	2,240	2,240	2,240	2,240
2012	19	278	593	856	896	996	903	902	902	921	925
2013	55	343	454	777	703	934	796	796	806	806	806
2014	7	1,443	1,714	2,384	2,359	2,359	1,684	2,402	1,754	2,402	1,756
2015	13	534	685	589	589	589	629	628	628	628	
2016	55	828	1,339	1,160	1,185	1,285	1,585	1,585	1,585		
2017	13	1,619	2,544	1,764	1,960	2,495	3,127	3,137			
2018	277	1,500	1,522	2,123	2,332	2,933	2,800				
2019	102	380	1,057	751	1,261	1,090					
2020	232	1,381	1,606	1,806	1,819						
2021	41	1,484	1,152	1,468							
2022	235	1,364	2,117								
2023	204	2,557									
2024	421										
	<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	10.203	1.423	1.062	1.014	1.086	0.991	1.053	0.943	1.074	0.929	
AVG	36.341	1.560	1.103	1.026	1.080	1.000	1.038	0.975	1.043	1.000	
REFERENCE	3.292	1.541	1.147	1.011	1.017	1.039	1.004	0.982	1.034	1.013	1.026
SELECT	6.697	1.423	1.062	1.014	1.059	1.022	1.016	1.000	1.003	1.000	1.000
CUMULATIVE	11.329	1.692	1.189	1.119	1.104	1.042	1.019	1.003	1.003	1.000	1.000

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program - Includes EPL

Cumulative Paid Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/23

Program	Months of Development										
	<u>6</u>	<u>18</u>	<u>30</u>	<u>42</u>	<u>54</u>	<u>66</u>	<u>78</u>	<u>90</u>	<u>102</u>	<u>114</u>	<u>126</u>
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	2,240
2012	13	113	177	387	897	899	902	902	902	921	924
2013	3	124	373	702	703	716	796	796	806	806	806
2014	4	478	935	2,311	2,324	2,329	1,684	2,402	2,402	2,402	1,756
2015	10	56	510	589	589	589	628	628	628	628	
2016	13	142	575	1,072	1,134	1,233	1,585	1,585	1,585		
2017	7	309	966	1,608	1,719	2,451	3,127	3,136			
2018	21	243	679	984	2,160	2,332	2,715				
2019	15	75	283	383	468	931					
2020	7	701	1,011	1,372	1,757						
2021	9	181	436	1,023							
2022	6	137	1,179								
2023	7	122									
2024	13										
	<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	22.227	2.825	1.799	1.201	1.107	1.064	1.053	1.001	1.002	0.929	
AVG	33.461	3.274	1.716	1.244	1.064	1.058	1.039	1.002	1.002	1.000	
REFERENCE	7.668	5.428	1.656	1.403	1.255	1.105	1.063	1.000	1.020	1.010	1.000
SELECT	33.461	3.274	1.716	1.244	1.064	1.058	1.039	1.002	1.002	1.000	1.000
CUMULATIVE	274.620	8.207	2.507	1.461	1.174	1.104	1.043	1.004	1.003	1.000	1.000

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Cumulative # of Reported Losses - 12/31/23

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>
2007										
2008										
2009										
2010										
2011										70
2012									75	74
2013								69	69	69
2014							64	62	62	65
2015						74	76	76	78	78
2016					81	81	80	85	85	
2017				103	102	100	107	107		
2018			81	81	81	86	86			
2019		64	68	71	73	73				
2020	26	82	84	85	86					
2021	22	85	87	91						
2022	29	102	108							
2023	27	96								
2024	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	3.510	1.042	1.025	1.006	1.009	1.023	1.009	1.007	1.007	
ALL YR AVG	3.523	1.042	1.025	1.008	1.011	1.021	1.008	1.007	1.009	
SELECT	3.523	1.042	1.025	1.008	1.011	1.021	1.009	1.007	1.007	1.000
CUMULATIVE	4.004	1.137	1.090	1.064	1.056	1.045	1.023	1.014	1.007	1.000

Monterey Bay Area Self Insurance Authority  
General and Auto Liability Program

Program Information  
Program Years run July 1 to June 30

Program Year	Self-Insured Retention (SIR) * (1)	Payroll (\$00's) (2)	Payroll Trended to 2023-24 (\$00's) (3)	Payroll Trended to 2024-25 (\$00's) (4)	Deductible (5)
2012-13	\$1,000,000	\$422,491	\$751,935	\$782,489	\$10,000
2013-14	1,000,000	436,959	758,702	789,531	10,000
2014-15	1,000,000	455,957	765,530	796,637	10,000
2015-16	1,000,000	472,388	772,420	803,807	10,000
2016-17	1,000,000	518,291	779,372	811,041	10,000
2017-18	1,000,000	545,055	786,386	818,340	10,000
2018-19	1,000,000	590,304	793,464	825,705	10,000
2019-20	1,000,000	622,825	800,605	833,137	10,000
2020-21	1,000,000	628,497	807,810	840,635	10,000
2021-22	1,000,000	692,817	815,081	848,201	10,000
2022-23	1,000,000	755,191	822,416	855,835	25,000
2023-24	1,000,000	829,818	829,818	863,537	25,000
2024-25	?	871,309	837,286	871,309	25,000

## Notes:

- (1) Provided by MBASIA.  
\* EPL SIR is \$500,000 claims made starting 2011-12.
- (2) Provided by MBASIA.
- (3) Trending parallels 0.90% per year growth in population.
- (4) Trending parallels 0.90% per year growth in population.
- (5) Provided by MBASIA.  
Deductible assumed to apply to combined loss & ALAE.  
(Unconfirmed).