

Monterey Bay Area Self Insurance Authority

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

**BAY ACTUARIAL CONSULTANTS
Moraga, California
April 4, 2023**

Bay Actuarial Consultants

April 4, 2023

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 2023-24 Losses & Rate of Loss.** It includes a projection of the losses expected to be incurred during 2023-24, 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 12/31/22 and the projected 6/30/23 liability.
- 3) **Discounting.** The projected 2023-24 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 23-24 Losses and Rates of Loss

Tables I and II shows the projected 23-24 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 those in Table II have had the deductibles 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 23-24.

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 23-24 losses, including the full amounts of the deductibles (Table I) will be less than **\$3,544,743**. There is a table on page 12 that shows the adjustments to make to discount at interest rates other than **3.0%**. The discounted 22-23 C.E values are based on last year’s **1.5%** interest rate.

Table I: Projected 23-24 Losses and Rates of Loss per \$100 Payroll \$1M SIR (\$500K EPL SIR), Gross of \$25K Deductible, 3.0% Interest Rate				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
Central Estimate	\$2,550,175	\$2,310,459	\$3.22	\$2.92
70%	3,034,708	2,749,446	3.83	3.47
75%	3,264,224	2,957,387	4.12	3.74
80%	\$3,544,743	3,211,537	4.48	4.06
90%	4,284,294	3,881,570	5.41	4.91
2022-23 C.E.	\$2,176,253	\$2,087,027	\$3.13	\$3.00
% Change from 22-23	+17.2%	+10.7%	+2.9%	-2.7%

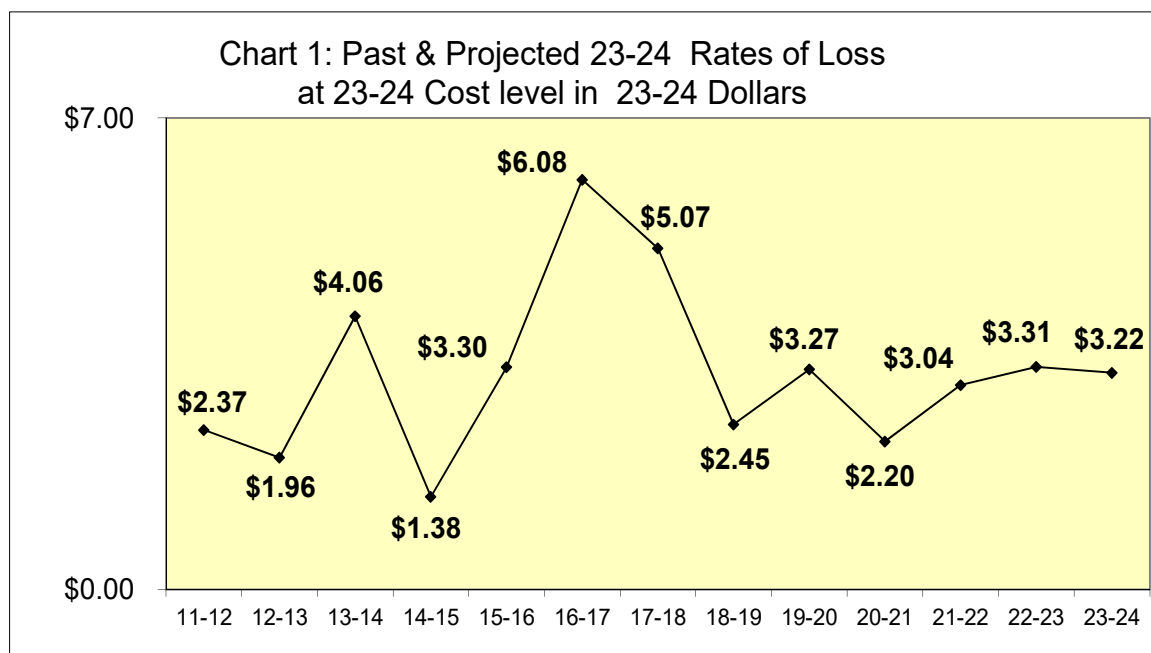
The change from last year in the projected total losses was +17.2%. The projected *rate of loss* increased by only 2.9%. This is because the projected payroll is up 13.9% from last year’s projected payroll, reducing the new loss rate.

Table II: Projected 23-24 Losses and Loss Rates \$1M SIR (\$500K EPL SIR), NET of \$25K Deductible, 3.0% Interest Rate				
Probability Level	Undiscounted Losses	Discounted Losses	Undiscounted Loss Rate	Discounted Loss Rate
Central Estimate	\$2,136,191	\$1,914,027	\$2.70	\$2.42
70%	2,584,791	2,315,973	3.27	2.93
75%	2,798,411	2,507,376	3.54	3.17
80%	\$3,054,754	2,737,059	3.86	3.46
90%	3,802,421	3,406,969	4.81	4.31
2022-23 C.E.	\$1,769,760	\$1,690,120	\$2.55	\$2.44
% Change from 20-21	+20.7%	+13.2%	+5.9%	-0.8%

The reduction in MBASIA's retained losses once the \$25,000 deductible is taken out is about 17%.

The Authority's Past Rates of Loss

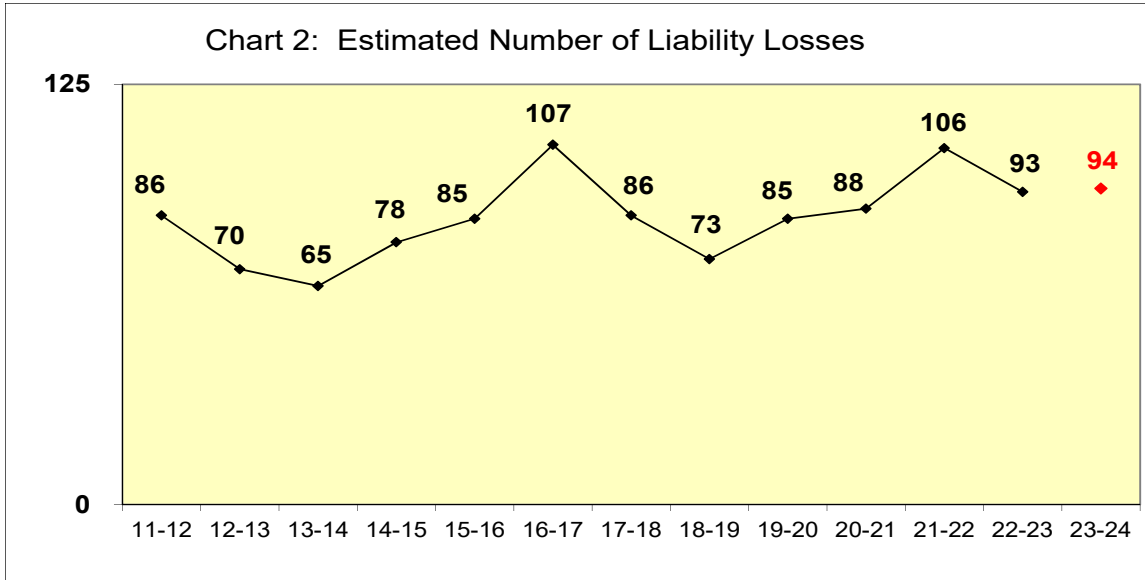
Chart 1 shows the Authority's estimated past rates of loss at the \$1M/\$500K (\$500K EPL) SIR in 23-24 dollars. The rates for the older years equal the estimated total losses for the year divided by the year's payroll, all in 23-24 dollars. The **\$3.22** rate for 23-24 is the projected undiscounted central estimate rate from Table I.



Six of the twelve older rates in chart are above the projected 23-24 rate of **\$3.22** and six are below. So the 23-24 central estimate is exactly in the center, where it is expected to be.

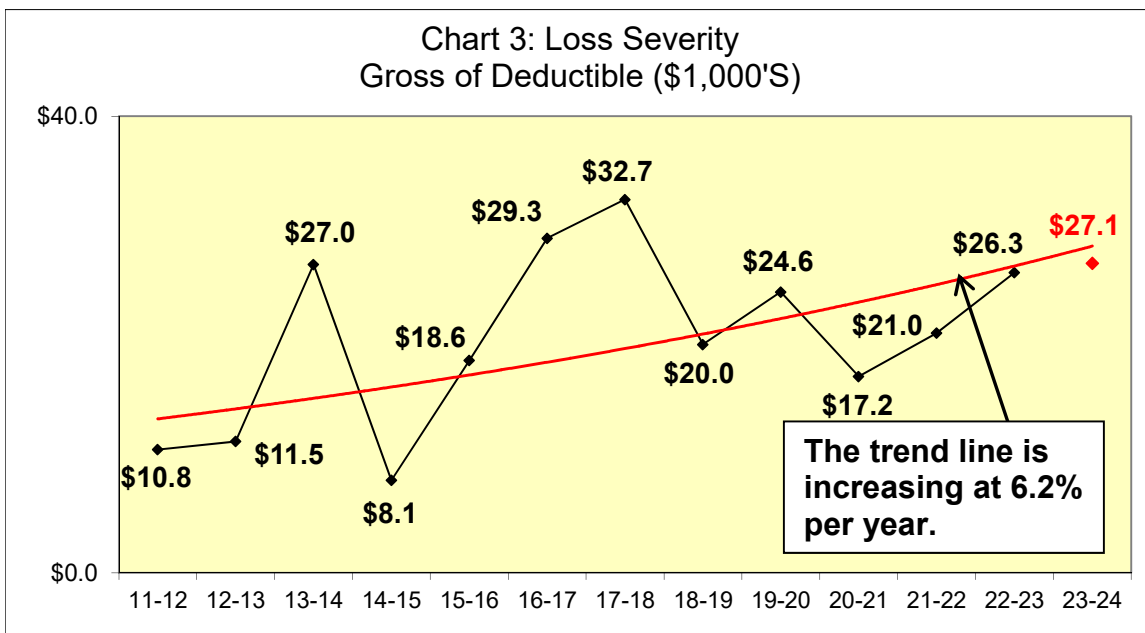
Cost Drivers: Frequency & Severity

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 **23-24**.



The 22-23 estimate of **93** is an actuarial projection based on the **27** claims reported through 12/31/22. That 22-23 estimate is of course currently very uncertain. The projection of **94** claims for 23-24 is even more uncertain since the year won't begin until 7/1/23. The chart does not appear to show any particular trend.

Chart 3 shows average claim amounts by program year. This trend, the severity trend, is what is driving MBASIA's costs higher.



The projected severity of **\$27.1 thousand** for 23-24 is simply the projected losses of **\$2,550,175** from Table I divided by the **94** claims projected in Chart 2. The red trend line in Chart 3 is increasing at **6.2%** per year. This is consistent with our common sense awareness of the big increase in inflation occurring economy-wide. This generic inflation arose very quickly during 2021 and 2022. The inflation-driven severity trend is an important actuarial assumption. In last year's analysis of the 12/31/21 data the severity trend assumption was **4.1%** per year. So the severity trend assumption jumped by **50%** in only one year. This jump in the severity trend has a leveraged effect on the new projection of the 23-24 losses. The leveraged impact of the 50% increase in the severity trend assumption generated the 17% increase in the loss projection for 23-24 in Table I.

Liability at 12/31/22

We estimate that the Authority's liability for unpaid losses was **\$6,180,892** on 12/31/22. 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.

Table III: Estimated Liability for Unpaid Losses as of 12/31/22 – Net of Deductibles		
Probability Level	Undiscounted Losses	Discounted at 3.0%
Central Estimate	\$6,180,892	\$5,853,304
60%	6,304,509	5,970,370
70%	6,675,363	6,321,569
75%	6,922,599	6,555,701
80%	7,231,643	6,848,366
90%	8,096,968	7,667,829
85%	8,900,484	8,428,758
98%	9,889,427	9,365,287

Reconciling the 12/31/21 & 12/31/22 Liability Estimates

Table IV reconciles last year's estimate of the 12/31/21 liability with the new estimate of the 12/31/22 liability.

Table IV: Reconcile 12/31/21 & 12/31/22 Liabilities	
Estimated 12/31/21 Net Liability	\$4,878,245
Payments in Calendar 2022	-1,448,196
Change in Estimates for 12/31/21 and Prior Estimated Losses Calendar 2022	+765,843
	+1,985,000
Estimated 12/31/22 Net Liability	\$6,180,892

Projected 6/30/23 Liability

Table V shows the projection of the 6/30/23 liability.

Table V: Projected 6/30/23 Liability Net of Deductibles	
12/31/22 Liability Central Estimate	\$6,180,892
Projected Payments 1/1/23 to 6/30/23	-1,014,020
Projected New Losses 1/1/23 to 6/30/23	+1,180,000
Projected 6/30/23 Central Estimate	\$6,346,872

Table VI shows the projected probability levels for the projected 6/30/23 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.

Table VI: Projected Estimate of 6/30/23 Liability Net of Deductibles		
Probability Level	Undiscounted Losses	Discounted at 3.0%
Central Estimate	\$6,346,872	\$6,010,487
60%	6,473,809	6,130,697
70%	6,918,090	6,551,431
75%	7,171,965	6,791,851
80%	7,425,840	7,032,270
90%	8,314,402	7,873,739
95%	9,139,495	8,655,102
98%	10,154,995	9,616,780

Short-Term Liability

Short-term liabilities are those expected to be discharged over the next twelve months. The total projected 6/30/23 liability of **\$6,346,872** comprises **\$2,089,424** of short-term and **\$4,257,448** of long-term liabilities.

Capital Requirements

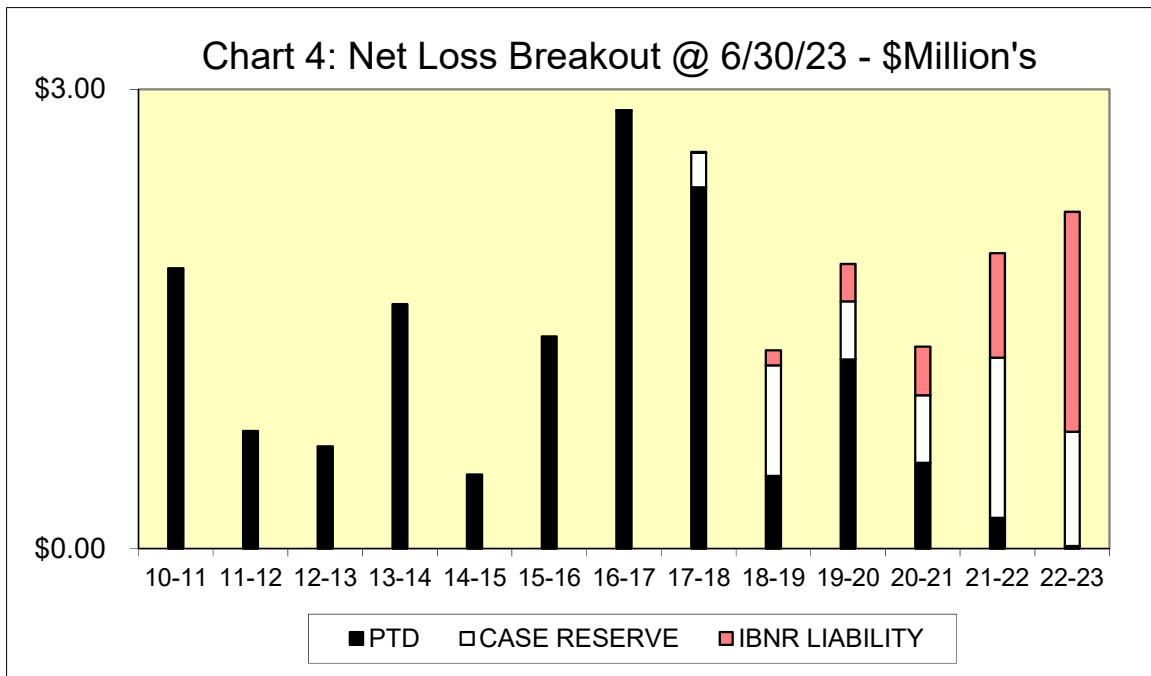
Subtracting the central estimate from a higher probability estimate produces an estimate of the capital required to attain that higher probability level. For example, in Table III the difference between the 75% level and the undiscounted central estimate is **\$741,707**, so that was the capital required to attain 75% at 12/31/22. A similar calculation based on Table VI shows that a total of **\$825,093** will be required to attain 75% at 6/30/23 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 **\$342,827** on both 12/31/22 and 6/30/23. This is on page 21.

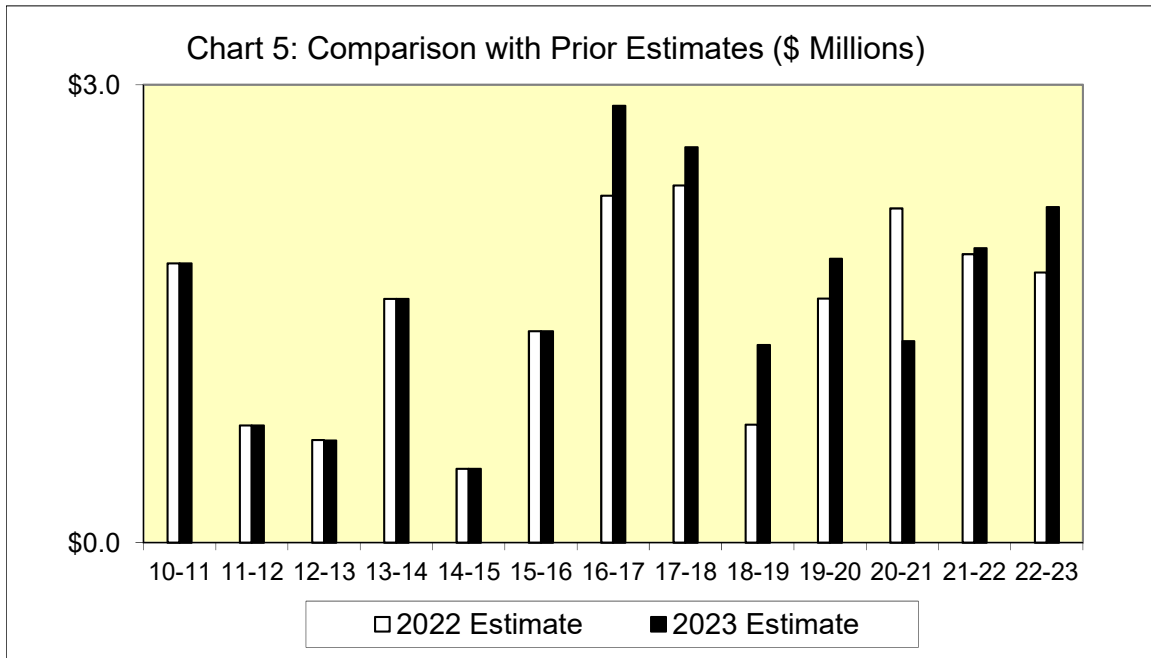
Projected Loss Breakout as of 6/30/23

In Tables V and VI show the Authority’s projected 6/30/23 liability of **\$6,346,872**, net of deductibles. This total comprises projected case reserves for known claims of **\$3,460,080** and an IBNR liability of **\$2,787,792**. This is **\$0.78** 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 6/30/23 dollar amounts are shown on page 24.



Comparison with 2022 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 2021-22 was **\$785,843**. The initial estimate for 22-23 is up **\$389,347** from last year's initial projection of the 22-23 losses. That increase in 22-23 is almost entirely due to the increase in the severity trend assumption from 4.1% to 6.2%.



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%	3.75%	4.27%
Net Contribution Rates	+10.4%	+0.0%	-1.5%	-2.3%	-4.0%
6/30/23 Liability	+11.6%	+0.0%	-1.8%	-2.7%	-4.4%

Given the interest rates available on 4/3/23 MBASIA could fund the 2023-24 program losses using US Treasuries alone and lock in an estimated yield to maturity of 3.75%. Funding the 6/30/23 liability by using just US Treasuries might generate a yield to maturity of 4.27%. Therefore **3.0%** is currently a conservative interest rate.

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 12/31/22 and the projected 6/30/23 liability. The 6/30/23 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 23-24 program year, which runs from 7/1/23 to 6/30/24. Summary Exhibit 4 shows the projected unpaid losses as of 6/30/23 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 12/31/22 and the projected unpaid losses as of 6/30/23.

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 23-24 loss rate.

Future Loss Exhibits

These exhibits show the projection of the expected rate for 23-24.

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 12/31/22
Losses Limited to SIR, NET of Deductible

	<u>12/31/22</u>
(1) Estimated Unpaid Losses:	\$6,180,892
(2) Discounted Value of Unpaid Losses: (Assuming 3.0% Interest Rate)	\$5,853,304

Probability Levels for 12/31/22 Liabilities			
Probability Level <u>(3)</u>	Probability Factor <u>(4)</u>	Undiscounted <u>(5)</u>	Discounted at 3.00% <u>(6)</u>
Central Estimate	1.00	\$6,180,892	\$5,853,304
60%	1.02	6,304,509	5,970,370
70%	1.08	6,675,363	6,321,569
75%	1.12	6,922,599	6,555,701
80%	1.17	7,231,643	6,848,366
90%	1.31	8,096,968	7,667,829
95%	1.44	8,900,484	8,428,758
98%	1.60	9,889,427	9,365,287

Notes:

- (1) Page 24, 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 6/30/23 Estimate of Liability

	<u>Net of Deductibles</u>
(1) Estimated Unpaid Losses: 12/31/22	\$6,180,892
(2) Projected payments over next six months:	\$1,014,020
(3) Projected new losses over next six months:	\$1,180,000
(4) Projected Unpaid Losses: 6/30/23	\$6,346,872

Probability Level <u>(5)</u>	Projected Estimated Probability Factor <u>(6)</u>	Undiscounted Net of Deductibles <u>(7)</u>	Discounted Net of Deductibles <u>(8)</u>
Central Estimate	1.00	\$6,346,872	\$6,010,487
60%	1.02	6,473,809	6,130,697
70%	1.09	6,918,090	6,551,431
75%	1.13	7,171,965	6,791,851
80%	1.17	7,425,840	7,032,270
90%	1.31	8,314,402	7,873,739
95%	1.44	9,139,495	8,655,102
98%	1.60	10,154,995	9,616,780

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 17, Item (1).
- (2) Projected by BAC.
- (3) Projected by BAC.
- (4) (1) - (2) + (3).
- (5) Projected Probability on 6/30/23.
- (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 2023-24
Losses Limited to \$1,000,000, NET of \$25K Deductible

(1) Discounted Loss Rate: (as of 7/1/23, 3.0% interest rate)	<u>Loss Rates</u> \$2.42
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Probability Levels		
Probability Level (2)	Probability Factor (3)	Discounted * Rate (4)
50%	0.88	2.13
Central Estimate	1.00	\$2.42
60%	1.03	2.49
70%	1.21	2.93
75%	1.32	3.19
80%	1.44	3.48
90%	1.81	4.38

* Multiply by 1.116 to obtain undiscounted values.

Notes:

- (1) [Page 54, Column (7)] x [Page 60, 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 6/30/23
Losses Limited to SIR, NET of Deductible

Program Year	Undiscounted Value: Claims Liabilities as of 6/30/23 (1)	Discounted (3.0% Interest) Claims Liabilities as of 6/30/23 (2)	Estimated Ultimate Losses (3)
2011-12	\$338	\$338	\$768,000
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	1,716	1,691	2,863,000
2017-18	230,306	226,882	2,590,734
2018-19	820,266	798,319	1,295,174
2019-20	625,081	599,931	1,860,000
2020-21	759,256	724,376	1,320,000
2021-22	1,727,926	1,637,016	1,930,000
2022-23	2,181,983	2,020,889	2,200,000
Total	\$6,346,872	\$6,009,442	\$18,963,896

Notes:

- (1) Page 23, Column (6).
- (2) Page 58, Column (3).
- (3) Page 23, 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 12/31/22:	\$5,206,430	\$1,370,693	\$6,577,123
(4) Estimated Unpaid ULAE as of 12/31/22:	\$223,876	\$118,951	\$342,827
(5) Discounted Unpaid ULAE as of 12/31/22: (3.0% interest rate)			\$324,657

We project that the 6/30/23 ULAE liability
will equal the 12/31/22 ULAE liability.

Notes:

- (1) Estimated by BAC.
- (2) "50-50 Rule."
- (3) Page 30, 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 6/30/23
Losses Limited to SIR, NET of Deductible

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/23 (2)	Projected Case Reserves 6/30/23 (3)	Projected Losses Reported as of 6/30/23 (4)	Projected IBNR as of 6/30/23 (5)	Projected Unpaid Losses as of 6/30/23 (6)
2011-12	\$768,000	\$767,662	\$0	\$767,662	\$338	\$338
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	2,863,000	2,861,284	1,716	2,863,000	0	1,716
2017-18	2,590,734	2,360,428	223,852	2,584,280	6,454	230,306
2018-19	1,295,174	474,908	721,649	1,196,556	98,618	820,266
2019-20	1,860,000	1,234,919	379,672	1,614,591	245,409	625,081
2020-21	1,320,000	560,744	441,090	1,001,834	318,166	759,256
2021-22	1,930,000	202,074	1,045,262	1,247,336	682,664	1,727,926
2022-23	2,200,000	18,017	745,839	763,856	1,436,144	2,181,983
Total	\$18,963,896	\$12,617,025	\$3,559,080	\$16,176,104	\$2,787,792	\$6,346,872

Notes:

(1) through (6) Page 25 entries minus Page 28 entries.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Estimated Unpaid Losses as of 12/31/22
Losses Limited to SIR, NET of Deductible

Program Year	Estimated Ultimate Losses (1)	Losses Paid as of 12/31/22 (2)	Case Reserves 12/31/22 (3)	Losses Reported as of 12/31/22 (4)	Estimated IBNR as of 12/31/22 (5)	Estimated Unpaid Losses as of 12/31/22 (6)
2011-12	\$768,000	\$767,662	\$0	\$767,662	\$338	\$338
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	2,863,000	2,860,689	0	2,860,689	2,311	2,311
2017-18	2,590,734	2,113,201	468,926	2,582,128	8,606	477,533
2018-19	1,295,174	303,511	792,407	1,095,918	199,256	991,663
2019-20	1,860,000	1,142,219	433,743	1,575,962	284,038	717,781
2020-21	1,320,000	269,801	694,729	964,530	355,470	1,050,199
2021-22	1,930,000	8,933	1,067,737	1,076,669	853,331	1,921,067
2022-23	1,020,000	0	125,000	125,000	895,000	1,020,000
Total	\$17,783,896	\$11,603,005	\$3,582,542	\$15,185,547	\$2,598,349	\$6,180,892

Notes:

(1) through (6) Page 27 entries minus Page 30 entries.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Losses as of 6/30/23
Losses Limited to SIR, Gross of Deductible

Program Year	Estimated Ultimate Losses (1)	Projected Losses Paid as of 6/30/23 (2)	Projected Case Reserves 6/30/23 (3)	Projected Losses Reported as of 6/30/23 (4)	Projected IBNR as of 6/30/23 (5)	Projected Unpaid Losses as of 6/30/23 (6)
2011-12	\$926,000	\$924,297	\$1,073	\$925,370	\$630	\$1,703
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	3,130,000	3,128,284	1,716	3,130,000	0	1,716
2017-18	2,810,000	2,579,694	223,852	2,803,546	6,454	230,306
2018-19	1,460,000	639,734	721,649	1,361,382	98,618	820,266
2019-20	2,090,000	1,464,383	380,065	1,844,448	245,552	625,617
2020-21	1,510,000	739,011	451,436	1,190,447	319,553	770,989
2021-22	2,230,000	405,304	1,133,482	1,538,786	691,214	1,824,696
2022-23	2,450,000	79,921	855,448	935,369	1,514,631	2,370,079
Total	\$21,380,923	\$14,735,551	\$3,768,720	\$18,504,272	\$2,876,651	\$6,645,372

Notes:

- (1) Page 32, Column (6).
- (2) Page 26, Column (3).
- (3) (4) - (2).
- (4) Page 26, 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 1/1/23 and 6/30/23
Losses Limited to SIR, Gross of Deductible

Program Year	Losses Paid as of 12/31/22 (1)	Projected Losses Paid 1/1/23 - 6/30/23 (2)	Projected Losses Paid as of 6/30/23 (3)	Losses Reported as of 12/31/22 (4)	Projected Losses Reported 1/1/23 - 6/30/23 (5)	Projected Losses Reported as of 6/30/23 (6)
2011-12	\$924,297	\$0	\$924,297	\$925,370	\$0	\$925,370
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	3,126,567	1,717	3,128,284	3,127,219	2,781	3,130,000
2017-18	2,332,467	247,227	2,579,694	2,801,394	2,152	2,803,546
2018-19	468,337	171,397	639,734	1,260,744	100,638	1,361,382
2019-20	1,371,606	92,776	1,464,383	1,805,676	38,772	1,844,448
2020-21	436,421	302,590	739,011	1,151,986	38,461	1,190,447
2021-22	137,314	267,990	405,304	1,363,517	175,268	1,538,786
2022-23	6,867	73,055	79,921	203,708	731,661	935,369
Total	\$13,578,800	\$1,156,751	\$14,735,551	\$17,414,537	\$1,089,735	\$18,504,272

Notes:

- (1) Page 34, Column (1).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 33, 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 12/31/22
Losses Limited to SIR, Gross of Deductible

Program Year	Estimated Ultimate Losses (1)	Losses Paid as of 12/31/22 (2)	Case Reserves 12/31/22 (3)	Losses Reported as of 12/31/22 (4)	Estimated IBNR as of 12/31/22 (5)	Estimated Unpaid Losses as of 12/31/22 (6)
2011-12	\$926,000	\$924,297	\$1,073	\$925,370	\$630	\$1,703
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	3,130,000	3,126,567	652	3,127,219	2,781	3,433
2017-18	2,810,000	2,332,467	468,926	2,801,394	8,606	477,533
2018-19	1,460,000	468,337	792,407	1,260,744	199,256	991,663
2019-20	2,090,000	1,371,606	434,069	1,805,676	284,324	718,394
2020-21	1,510,000	436,421	715,565	1,151,986	358,014	1,073,579
2021-22	2,230,000	137,314	1,226,204	1,363,517	866,483	2,092,686
2022-23	1,225,000	6,867	196,841	203,708	1,021,292	1,218,133
Total	\$20,155,923	\$13,578,800	\$3,835,737	\$17,414,537	\$2,741,386	\$6,577,123

Notes:

- (1) Page 32, Column (6).
2022-23 entry adjusted for incomplete year through 12/31/22.
- (2) Page 34, Column (1).
- (3) (4) - (2).
- (4) Page 33, Column (1).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Deductibles as of 6/30/23
Losses Limited to \$10K or \$25K Deductible

Program Year	Estimated Ultimate Deductibles (1)	Projected Ded Paid as of 6/30/23 (2)	Projected Case Reserves 6/30/23 (3)	Projected Ded Reported as of 6/30/23 (4)	Projected Deductible IBNR as of 6/30/23 (5)	Projected Deductible Losses as of 6/30/23 (6)
2011-12	\$158,000	\$156,636	\$1,073	\$157,709	\$291	\$1,364
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	267,000	0	267,000	0	0
2017-18	219,266	219,266	0	219,266	0	0
2018-19	164,826	164,826	0	164,826	0	0
2019-20	230,000	229,464	393	229,857	143	536
2020-21	190,000	178,266	10,346	188,613	1,387	11,734
2021-22	300,000	203,230	88,220	291,450	8,550	96,770
2022-23	250,000	61,904	109,609	171,513	78,487	188,096
Total	\$2,417,027	\$2,118,527	\$209,641	\$2,328,168	\$88,859	\$298,500

Notes:

- (1) Page 62, Column (3).
- (2) Page 29, Column (3).
- (3) (4) - (2).
- (4) Page 29, 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 1/1/23 and 6/30/23
Losses Limited to \$10K or \$25K Deductible

Program Year	Ded Paid as of 12/31/22 (1)	Projected Losses Paid 1/1/23 - 6/30/23 (2)	Projected Losses Paid as of 6/30/23 (3)	Losses Reported as of 12/31/22 (4)	Projected Losses Reported 1/1/23 - 6/30/23 (5)	Projected Losses Reported as of 6/30/23 (6)
2011-12	\$156,636	\$0	\$156,636	\$157,709	\$0	\$157,709
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	1,122	267,000	266,530	470	267,000
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	229,387	77	229,464	229,713	143	229,857
2020-21	166,620	11,647	178,266	187,455	1,158	188,613
2021-22	128,381	74,849	203,230	286,848	4,602	291,450
2022-23	6,867	55,038	61,904	78,708	92,805	171,513
Total	\$1,975,795	\$142,731	\$2,118,527	\$2,228,990	\$99,178	\$2,328,168

Notes:

- (1) Page 30, Column (2).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 30, 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 12/31/22
Losses Limited to Deductible Amount

Program Year	Estimated Ultimate Deductibles (1)	Ded Paid as of 12/31/22 (2)	Case Reserves 12/31/22 (3)	Ded Reported as of 12/31/22 (4)	Estimated Deductible IBNR as of 12/31/22 (5)	Estimated Deductible Losses as of 12/31/22 (6)
2011-12	\$158,000	\$156,636	\$1,073	\$157,709	\$291	\$1,364
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	230,000	229,387	326	229,713	287	613
2020-21	190,000	166,620	20,836	187,455	2,545	23,380
2021-22	300,000	128,381	158,467	286,848	13,152	171,619
2022-23	205,000	6,867	71,841	78,708	126,292	198,133
Total	\$2,372,027	\$1,975,795	\$253,195	\$2,228,990	\$143,037	\$396,231

Notes:

- (1) Page 62, Column (3).
2022-23 from Page 65, Column (3).
2022-23 adjusted for incomplete year through 12/31/22.
- (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 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)
2011-12	\$925,370	\$924,297	\$925,370	\$925,370	\$1,309,910	\$926,000
2012-13	805,895	805,895	805,895	805,895	1,095,808	805,895
2013-14	1,756,276	1,756,973	1,756,276	1,756,276	1,061,525	1,756,276
2014-15	631,512	629,846	628,110	635,451	1,328,665	628,110
2015-16	1,610,529	1,591,497	1,584,642	1,609,392	1,510,649	1,584,642
2016-17	3,230,227	3,261,440	3,129,414	3,179,279	1,984,572	3,130,000
2017-18	2,956,869	2,574,324	3,397,400	2,893,951	1,695,335	2,810,000
2018-19	1,429,077	549,746	4,341,622	1,482,852	1,537,297	1,460,000
2019-20	2,145,981	2,003,593	2,244,520	2,126,934	1,904,545	2,090,000
2020-21	1,432,932	1,093,963	1,498,319	1,577,470	2,098,853	1,510,000
2021-22	2,388,244	1,126,952	2,534,541	2,363,572	2,690,418	2,230,000
2022-23	2,041,630	1,885,690	2,046,932	2,446,185	2,501,700	2,450,000
Total	\$21,354,542	\$18,204,216	\$24,893,041	\$21,802,627	\$20,719,277	\$21,380,923

Notes:

- (1) Page 33, Column (3).
- (2) Page 34, Column (3).
- (3) Page 35, Column (6).
- (4) Page 36, Column (6).
- (5) Page 40, 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 12/31/22 (1)	Reported Development Factor as of 12/31/22 (2)	Projected Ultimate Losses (3)
2011-12	\$925,370	1.000	\$925,370
2012-13	805,895	1.000	805,895
2013-14	1,756,276	1.000	1,756,276
2014-15	628,110	1.005	631,512
2015-16	1,584,642	1.016	1,610,529
2016-17	3,127,219	1.033	3,230,227
2017-18	2,801,394	1.055	2,956,869
2018-19	1,260,744	1.134	1,429,077
2019-20	1,805,676	1.188	2,145,981
2020-21	1,151,986	1.244	1,432,932
2021-22	1,363,517	1.752	2,388,244
2022-23	203,708	10.022	2,041,630
Total	\$17,414,537		\$21,354,542

Notes:

- (1) Provided by Risk Management Services.
- (2) Page 69.
- (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 12/31/22 (1)	Paid Development Factor as of 12/31/22 (2)	Projected Ultimate Losses (3)
2011-12	\$924,297	1.000	\$924,297
2012-13	805,895	1.000	805,895
2013-14	1,756,276	1.000	1,756,973
2014-15	628,110	1.003	629,846
2015-16	1,584,642	1.004	1,591,497
2016-17	3,126,567	1.043	3,261,440
2017-18	2,332,467	1.104	2,574,324
2018-19	468,337	1.174	549,746
2019-20	1,371,606	1.461	2,003,593
2020-21	436,421	2.507	1,093,963
2021-22	137,314	8.207	1,126,952
2022-23	6,867	274.620	1,885,690
Total	\$13,578,800		\$18,204,216

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

IBNR to Case Reserves Ratio Method
Losses Limited to SIR, Gross of Deductible

Program Year	Reported Development Factor as of 12/31/22 (1)	Paid Development Factor as of 12/31/22 (2)	IBNR to Case Reserves Ratio (3)	Case Reserves 12/31/22 (4)	Estimated IBNR as of 12/31/22 (5)	Estimated Ultimate Losses (6)
2011-12	1.000	1.000	0.000	\$1,073	\$0	\$925,370
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	1.005	1.003	-2.048	0	0	628,110
2015-16	1.016	1.004	-1.366	0	0	1,584,642
2016-17	1.033	1.043	3.369	652	2,195	3,129,414
2017-18	1.055	1.104	1.271	468,926	596,006	3,397,400
2018-19	1.134	1.174	3.888	792,407	3,080,878	4,341,622
2019-20	1.188	1.461	1.011	434,069	438,844	2,244,520
2020-21	1.244	2.507	0.484	715,565	346,333	1,498,319
2021-22	1.752	8.207	0.955	1,226,204	1,171,024	2,534,541
2022-23	10.022	274.620	9.364	196,841	1,843,224	2,046,932
Total				\$3,835,737	\$7,478,504	\$24,893,041

Notes:

- (1) Page 33, Column (2).
- (2) Page 34, Column (2).
- (3) $[(1) - 1.000] \times (2) / [(2) - (1)]$.
- (4) Page 33, Column (1) - Page 34, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 33, 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 12/31/22 (5)	Estimated Ultimate Losses (6)
2011-12	\$1,277,907	1.000	0.0%	\$0	\$925,370	\$925,370
2012-13	1,325,858	1.000	0.0%	\$0	805,895	805,895
2013-14	1,395,256	1.000	0.0%	0	1,756,276	1,756,276
2014-15	1,468,115	1.005	0.5%	7,341	628,110	635,451
2015-16	1,546,852	1.016	1.6%	24,750	1,584,642	1,609,392
2016-17	1,626,889	1.033	3.2%	52,060	3,127,219	3,179,279
2017-18	1,746,360	1.055	5.3%	92,557	2,801,394	2,893,951
2018-19	1,882,273	1.134	11.8%	222,108	1,260,744	1,482,852
2019-20	2,020,492	1.188	15.9%	321,258	1,805,676	2,126,934
2020-21	2,170,835	1.244	19.6%	425,484	1,151,986	1,577,470
2021-22	2,331,130	1.752	42.9%	1,000,055	1,363,517	2,363,572
2022-23	2,491,642	10.022	90.0%	2,242,477	203,708	2,446,185

Notes:

- (1) Page 37, Column (4).
- (2) Page 33, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 33, 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> 2022-23 Loss (1)	Factor to Remove Trend (2)	Payroll Trended to 2022-23 (\$100's) (3)	<i>A Priori</i> Ultimate Losses (4)
2011-12	\$3.30	0.566	\$683,474	\$1,277,907
2012-13	3.30	0.582	689,625	1,325,858
2013-14	3.30	0.607	695,832	1,395,256
2014-15	3.30	0.633	702,094	1,468,115
2015-16	3.30	0.661	708,413	1,546,852
2016-17	3.30	0.689	714,789	1,626,889
2017-18	3.30	0.733	721,222	1,746,360
2018-19	3.30	0.783	727,713	1,882,273
2019-20	3.30	0.833	734,262	2,020,492
2020-21	3.30	0.887	740,871	2,170,835
2021-22	3.30	0.944	747,539	2,331,130
2022-23	3.30	1.000	754,267	2,491,642

Notes:

- (1) Page 38, Average of Column (3).
- (2) $1.000 / [\text{Page 38, Column (2)}]$.
- (3) Page 71, 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 \$10K Deductible

Program Year	<i>A Priori</i> Ultimate Losses (1)	Estimated Pure Premium Trend (2)	Constant Dollar Ultimate Losses (3)	Payroll Trended to 2022-23 (\$100's) (4)	Rate at 2022-23 Cost Level (5)	Selected Weights (6)
2011-12	\$925,370	1.766	\$1,634,273	\$683,474	\$2.39	1.00
2012-13	805,895	1.718	1,384,824	689,625	2.01	1.00
2013-14	1,756,276	1.647	2,892,864	695,832	4.16	1.00
2014-15	628,110	1.579	991,898	702,094	1.41	0.99
2015-16	1,584,642	1.514	2,398,495	708,413	3.39	0.98
2016-17	3,245,757	1.450	4,707,443	714,789	6.59	0.97
2017-18	2,801,394	1.365	3,822,693	721,222	5.30	0.95
2018-19	1,260,744	1.277	1,610,439	727,713	2.21	0.88
2019-20	2,082,104	1.201	2,499,668	734,262	3.40	0.84
2020-21	1,320,512	1.128	1,489,345	740,871	2.01	0.80
2021-22	2,166,408	1.060	2,296,035	747,539	3.07	0.57
Weighted Average All years					\$3.29	
Weighted Average 11/12-20/21					\$3.30	
(7) Selected A Priori 2022-23 Loss Rate:					\$3.30	

Notes:

- (1) Page 39, Column (3).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 71, Column (3).
- (7) (3) / (4).
- (6) Inverse of LDF on Page 33.
- (7) Weighted Average 2011-12 to 2020-21.

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)
2011-12	\$925,370	\$924,297	\$925,370
2012-13	805,895	805,895	805,895
2013-14	1,756,276	1,756,973	1,756,276
2014-15	631,512	629,846	628,110
2015-16	1,610,529	1,591,497	1,584,642
2016-17	3,230,227	3,261,440	3,245,757
2017-18	2,956,869	2,574,324	2,801,394
2018-19	1,429,077	549,746	1,260,744
2019-20	2,145,981	2,003,593	2,082,104
2020-21	1,432,932	1,093,963	1,320,512
2021-22	2,388,244	1,126,952	2,166,408
2022-23	2,041,630	1,885,690	2,036,139
Total	\$21,354,542	\$18,204,216	\$20,613,351

Notes:

- (1) Page 33, Column (3).
- (2) Page 34, 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)
2011-12	\$26,900	0.566	86	\$1,309,910
2012-13	26,900	0.582	70	1,095,808
2013-14	26,900	0.607	65	1,061,525
2014-15	26,900	0.633	78	1,328,665
2015-16	26,900	0.661	85	1,510,649
2016-17	26,900	0.689	107	1,984,572
2017-18	26,900	0.733	86	1,695,335
2018-19	26,900	0.783	73	1,537,297
2019-20	26,900	0.833	85	1,904,545
2020-21	26,900	0.887	88	2,098,853
2021-22	26,900	0.944	106	2,690,418
2022-23	26,900	1.000	93	2,501,700

Notes:

- (1) Page 41, Item (5).
- (2) $1.000 / [\text{Page 41, Column (2)}]$.
- (3) Page 42, 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)
2011-12	\$925,370	1.766	86	\$19,003
2012-13	805,895	1.718	70	19,783
2013-14	1,756,276	1.647	65	44,506
2014-15	628,110	1.579	78	12,717
2015-16	1,584,642	1.514	85	28,218
2016-17	3,245,757	1.450	107	43,995
2017-18	2,801,394	1.365	86	44,450
2018-19	1,260,744	1.277	73	22,061
2019-20	2,082,104	1.201	85	29,408
2020-21	1,320,512	1.128	88	16,924
2021-22	2,166,408	1.060	106	21,661
2022-23	2,036,139	1.000	93	21,894
Average				\$27,052
17/18-21/22				\$26,901
			(5) Selected Severity:	\$26,900

Notes:

- (1) Page 39, Column (3).
- (2) Estimated by BAC.
- (3) Page 42, 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)
2011-12	86		86
2012-13	70		70
2013-14	65		65
2014-15	78		78
2015-16	85		85
2016-17	107		107
2017-18	86		86
2018-19	73		73
2019-20	85		85
2020-21	88		88
2021-22	106		106
2022-23	93	93	93

Notes:

- (1) Page 43, Column (3).
- (2) Page 44, 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 12/31/22 <u>(1)</u>	Development Factors as of 12/31/22 <u>(2)</u>	Projected Ultimate Claims <u>(3)</u>
2011-12	86	1.000	86
2012-13	70	1.000	70
2013-14	65	1.000	65
2014-15	78	1.000	78
2015-16	85	1.000	85
2016-17	107	1.000	107
2017-18	86	1.000	86
2018-19	73	1.000	73
2019-20	85	1.000	85
2020-21	87	1.011	88
2021-22	102	1.044	106
2022-23	27	3.458	93

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

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 12/31/22 (5)	Projected Ultimate Claims (6)
2022-23	93	3.458	71.1%	66	27	93

Notes:

- (1) Page 45, Item (6).
- (2) Page 43, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 43, 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 2022-23 (\$Millions) (2)	Indicated Indemnity Claim Frequency (3)
2011-12	86	\$68.3	1.26
2012-13	70	69.0	1.02
2013-14	65	69.6	0.93
2014-15	78	70.2	1.11
2015-16	85	70.8	1.20
2016-17	107	71.5	1.50
2017-18	86	72.1	1.19
2018-19	73	72.8	1.00
2019-20	85	73.4	1.16
2020-21	88	74.1	1.19
2021-22	106	74.8	1.42
2022-23	93	75.4	1.23
Average			1.18
11/12-21/22			1.18
		(4) Selected Claim Frequency:	1.24
		(5) 2022-23 Trended Payroll (\$Millions):	\$75.4
		(6) 2022-23 A Priori Indemnity Claims:	93

Notes:

- (1) Page 43, Column (3).
- (2) Page 71, 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)
2011-12	\$624,329	\$623,256	\$624,329	\$624,329	\$623,256	\$630,000
2012-13	734,087	734,087	734,087	734,087	734,087	735,000
2013-14	1,006,276	1,006,564	1,006,276	1,006,276	1,006,276	1,006,276
2014-15	484,179	484,179	483,248	485,382	485,382	483,248
2015-16	1,289,185	1,289,185	1,273,122	1,286,418	1,286,418	1,273,122
2016-17	1,979,427	1,992,999	1,952,082	1,966,817	1,975,351	1,970,000
2017-18	1,569,518	1,618,275	1,528,190	1,559,528	1,595,687	1,528,190
2018-19	1,015,511	526,970	2,057,988	1,035,784	608,900	1,030,000
2019-20	1,777,313	1,593,979	1,876,867	1,723,015	1,519,541	1,750,000
2020-21	1,379,203	1,029,353	1,439,940	1,381,244	1,238,689	1,410,000
2021-22	1,688,069	1,126,952	1,738,121	1,603,816	1,420,589	1,620,000
2022-23	1,675,521	1,407,758	1,685,334	1,549,468	1,531,960	1,550,000
Total	\$15,222,618	\$13,433,557	\$16,399,585	\$14,956,165	\$14,026,137	\$14,985,836

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 Deductible

Program Year	Cumulative Reported Losses as of 12/31/22 <u>(1)</u>	Reported Development Factor as of 12/31/22 <u>(2)</u>	Projected Ultimate Losses <u>(3)</u>
2011-12	\$624,329	1.000	\$624,329
2012-13	734,087	1.000	734,087
2013-14	1,006,276	1.000	1,006,276
2014-15	483,248	1.002	484,179
2015-16	1,273,122	1.013	1,289,185
2016-17	1,950,741	1.015	1,979,427
2017-18	1,528,190	1.027	1,569,518
2018-19	935,744	1.085	1,015,511
2019-20	1,563,778	1.137	1,777,313
2020-21	1,148,642	1.201	1,379,203
2021-22	1,061,567	1.590	1,688,069
2022-23	203,708	8.225	1,675,521

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 12/31/22 (1)	Paid Development Factor as of 12/31/22 (2)	Projected Ultimate Losses (3)
2011-12	\$623,256	1.000	\$623,256
2012-13	734,087	1.000	734,087
2013-14	1,006,276	1.000	1,006,564
2014-15	483,248	1.002	484,179
2015-16	1,273,122	1.013	1,289,185
2016-17	1,950,089	1.022	1,992,999
2017-18	1,528,190	1.059	1,618,275
2018-19	468,337	1.125	526,970
2019-20	1,147,989	1.388	1,593,979
2020-21	436,421	2.359	1,029,353
2021-22	137,314	8.207	1,126,952
2022-23	6,867	205.017	1,407,758

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 12/31/22 (4)	Estimated IBNR as of as of 12/31/22 (5)	Estimated Ultimate Losses (6)
2011-12	1.000	1.000	0.000	\$1,073	\$0	\$624,329
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	1.002	1.002	0.000	0	0	483,248
2015-16	1.013	1.013	0.000	0	0	1,273,122
2016-17	1.015	1.022	2.059	652	1,341	1,952,082
2017-18	1.027	1.059	0.898	0	0	1,528,190
2018-19	1.085	1.125	2.401	467,407	1,122,244	2,057,988
2019-20	1.137	1.388	0.753	415,789	313,089	1,876,867
2020-21	1.201	2.359	0.409	712,221	291,298	1,439,940
2021-22	1.590	8.207	0.732	924,254	676,554	1,738,121
2022-23	8.225	205.017	7.527	196,841	1,481,626	1,685,334

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 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 12/31/22 (5)	Estimated Ultimate Losses (6)
2011-12	\$962,707	1.000	0.0%	\$0	\$624,329	\$624,329
2012-13	989,464	1.000	0.0%	0	734,087	734,087
2013-14	1,028,609	1.000	0.0%	0	1,006,276	1,006,276
2014-15	1,067,066	1.002	0.2%	2,134	483,248	485,382
2015-16	1,108,007	1.013	1.2%	13,296	1,273,122	1,286,418
2016-17	1,148,251	1.015	1.4%	16,076	1,950,741	1,966,817
2017-18	1,205,299	1.027	2.6%	31,338	1,528,190	1,559,528
2018-19	1,266,329	1.085	7.9%	100,040	935,744	1,035,784
2019-20	1,326,972	1.137	12.0%	159,237	1,563,778	1,723,015
2020-21	1,392,826	1.201	16.7%	232,602	1,148,642	1,381,244
2021-22	1,461,588	1.590	37.1%	542,249	1,061,567	1,603,816
2022-23	1,532,756	8.225	87.8%	1,345,760	203,708	1,549,468

Notes:

- (1) Page 32, 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 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 12/31/22 (5)	Estimated Ultimate Losses (6)
2011-12	\$962,707	1.000	0.0%	\$0	\$623,256	\$623,256
2012-13	989,464	1.000	0.0%	0	734,087	734,087
2013-14	1,028,609	1.000	0.0%	0	1,006,276	1,006,276
2014-15	1,067,066	1.002	0.2%	2,134	483,248	485,382
2015-16	1,108,007	1.013	1.2%	13,296	1,273,122	1,286,418
2016-17	1,148,251	1.022	2.2%	25,262	1,950,089	1,975,351
2017-18	1,205,299	1.059	5.6%	67,497	1,528,190	1,595,687
2018-19	1,266,329	1.125	11.1%	140,563	468,337	608,900
2019-20	1,326,972	1.388	28.0%	371,552	1,147,989	1,519,541
2020-21	1,392,826	2.359	57.6%	802,268	436,421	1,238,689
2021-22	1,461,588	8.207	87.8%	1,283,275	137,314	1,420,589
2022-23	1,532,756	205.017	99.5%	1,525,093	6,867	1,531,960

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 2023-24 *
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)
2023-24	\$1.98	1.601	\$3.17

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)
2023-24	\$3.22	1.000	\$3.22

Program Year	Selected 2023-24 1M/500K SIR Loss Rate (7)	Projected 2023-24 Payroll (\$00's) (8)	Projected Ultimate Losses (9)
2023-24	\$3.22	\$791,980	\$2,550,175
25K Deductible:	\$0.52		\$413,984
Net of 25K Deductible:	\$2.70		\$2,136,191

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

Notes:

- (1) Page 55, Item (7).
 - (2) Estimated by BAC.
 - (3) (1) x (2), rounded.
 - (4) Page 56, Item (7).
 - (5) Estimated by BAC.
 - (6) (4) x (5), rounded.
 - (7) Selected by BAC.
 - (8) Page 71, 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 2023-24 (2)	Losses Trended to 2023-24 (3)	Payroll Trended to 2023-24 (\$100's) (4)	Rate at 2023-24 Cost Level (5)	Selected Weights (6)
2011-12	\$630,000	1.470	\$925,904	\$711,246	\$1.30	1.00
2012-13	735,000	1.426	1,048,187	717,648	1.46	1.00
2013-14	1,006,276	1.387	1,395,499	724,107	1.93	1.00
2014-15	483,248	1.349	651,774	730,623	0.89	1.00
2015-16	1,273,122	1.312	1,669,831	737,199	2.27	0.99
2016-17	1,970,000	1.262	2,486,066	743,834	3.34	0.99
2017-18	1,528,190	1.212	1,852,010	750,528	2.47	0.97
2018-19	1,030,000	1.167	1,201,780	757,283	1.59	0.92
2019-20	1,750,000	1.122	1,963,511	764,099	2.57	0.88
2020-21	1,410,000	1.079	1,521,287	770,976	1.97	0.83
2021-22	1,620,000	1.038	1,680,893	777,914	2.16	0.63
Weighted Average 11-12 through 21-22:					\$1.98	
Weighted Average 11-12 through 20-21:					\$1.97	
(7) Projected 2023-24 \$250K Limit Rate:					\$1.98	
(8) Projected 2023-24 \$250K Limit Losses:					\$1,568,120	

Notes:

- (1) Page 47, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 71, Column (4).
- (5) (4) / (3).
- (6) Inverse of LDF on Page 49.
- (7) Based on (5).
- (8) (7) x 2023-24 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 2023-24 (2)	Losses Trended to 2023-24 (3)	Payroll Trended to 2023-24 (\$100's) (4)	Rate at 2023-24 Cost Level (5)	Selected Weights (6)
2011-12	\$926,000	1.821	\$1,686,066	\$711,246	\$2.37	1.00
2012-13	805,895	1.745	1,406,570	717,648	1.96	1.00
2013-14	1,756,276	1.673	2,938,811	724,107	4.06	1.00
2014-15	628,110	1.604	1,007,375	730,623	1.38	0.99
2015-16	1,584,642	1.537	2,435,274	737,199	3.30	0.98
2016-17	3,130,000	1.446	4,525,715	743,834	6.08	0.97
2017-18	2,810,000	1.354	3,803,393	750,528	5.07	0.95
2018-19	1,460,000	1.272	1,857,293	757,283	2.45	0.88
2019-20	2,090,000	1.195	2,497,738	764,099	3.27	0.84
2020-21	1,510,000	1.123	1,695,754	770,976	2.20	0.80
2021-22	2,230,000	1.060	2,362,939	777,914	3.04	0.57
Weighted Average 11-12 through 21-22:					\$3.21	
Weighted Average 11-12 through 20-21:					\$3.22	
(7) Projected 2023-24 \$1M/\$500k Limit Rate:					\$3.22	

Notes:

- (1) Page 32, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 71, Column (4).
- (5) (4) / (3).
- (6) Inverse of LDF on Page 33.
- (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 6/30/23
 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)
2011-12	\$338	1.000	\$338
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	1,716	0.985	1,691
2017-18	230,306	0.985	226,882
2018-19	820,266	0.973	798,319
2019-20	625,081	0.960	599,931
2020-21	759,256	0.954	724,376
2021-22	1,727,926	0.947	1,637,016
2022-23	2,181,983	0.926	2,020,889
Total	\$6,346,872		\$6,009,442
	(4) Indicated Discount Factor:		0.947

Notes:

- (1) Page 23, 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 2023-24 Losses as of 7/1/23
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)
2023-24	\$83,189	0.985	\$81,969
2024-25	380,307	0.957	363,813
2025-26	784,588	0.929	728,700
2026-27	538,726	0.902	485,778
2027-28	277,177	0.875	242,655
2028-29	277,177	0.850	235,588
2029-30	207,612	0.825	171,321
2030-31	1,398	0.801	1,120
2031-32	0	0.778	0
2032-33	0	0.755	0
2033-34	0	0.733	0
Total	\$2,550,175		\$2,310,944

(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
 General and Auto Liability Program

Discounted Value of 2023-24 Losses as of 7/1/23
 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)
2023-24	\$19,641	0.985	\$19,353
2024-25	129,256	0.957	123,650
2025-26	697,688	0.929	647,990
2026-27	468,284	0.902	422,259
2027-28	308,300	0.875	269,902
2028-29	308,300	0.850	262,041
2029-30	204,722	0.825	168,936
2030-31	0	0.801	0
2031-32	0	0.778	0
2032-33	0	0.755	0
2033-34	0	0.733	0
Total	\$2,136,191		\$1,914,131

(4) Indicated Discount Factor: 0.896

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)
2011-12	\$157,709	\$157,709	\$158,000
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	229,713	229,713	230,000
2020-21	188,890	189,215	190,000
2021-22	301,633	299,085	300,000
2022-23	271,988	244,248	250,000
Total	\$2,438,490	\$2,408,527	\$2,417,027

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 Year	Cumulative Reported Losses as of 12/31/22 (1)	Reported Development Factor as of 12/31/22 (2)	Projected Ultimate Losses (3)
2011-12	\$157,709	1.000	\$157,709
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	229,713	1.000	229,713
2020-21	187,455	1.008	188,890
2021-22	286,848	1.052	301,633
2022-23	62,208	4.372	271,988
Total	\$2,212,490		\$2,438,490

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 12/31/22 (5)	Estimated Ultimate Deductible Losses (6)
2011-12	\$107,245	1.000	0.0%	\$0	\$157,709	\$157,709
2012-13	124,285	1.000	0.0%	0	136,719	136,719
2013-14	168,289	1.000	0.0%	0	158,781	158,781
2014-15	80,129	1.000	0.0%	0	143,737	143,737
2015-16	209,325	1.000	0.0%	0	198,698	198,698
2016-17	321,085	1.000	0.0%	0	266,530	266,530
2017-18	246,369	1.000	0.0%	0	219,266	219,266
2018-19	164,317	1.000	0.0%	0	164,826	164,826
2019-20	276,280	1.000	0.0%	0	229,713	229,713
2020-21	219,952	1.008	0.8%	1,760	187,455	189,215
2021-22	249,729	1.052	4.9%	12,237	286,848	299,085
2022-23	236,109	4.372	77.1%	182,040	62,208	244,248
Total	\$2,403,113			\$196,037	\$2,212,490	\$2,408,527

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
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)
2011-12	\$265,803	\$265,803	\$266,000
2012-13	230,904	230,904	231,000
2013-14	288,623	288,623	288,623
2014-15	202,656	202,656	202,656
2015-16	371,708	371,860	371,484
2016-17	468,243	468,496	469,000
2017-18	406,877	406,857	406,857
2018-19	294,305	294,213	295,000
2019-20	471,934	472,215	473,000
2020-21	339,643	340,415	341,000
2021-22	522,821	515,029	516,000
2022-23	379,393	407,719	410,000
Total	\$4,242,910	\$4,264,790	\$4,270,620

Notes:

- (1) Page 66, Column (3).
- (2) Page 67, 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 12/31/22 (1)	Reported Development Factor as of 12/31/22 (2)	Projected Ultimate Losses (3)
2011-12	265,803	1.000	\$265,803
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	1.001	371,708
2016-17	467,921	1.001	468,243
2017-18	406,857	1.000	406,877
2018-19	293,921	1.001	294,305
2019-20	469,769	1.005	471,934
2020-21	334,589	1.015	339,643
2021-22	474,126	1.103	522,821
2022-23	78,708	4.820	379,393
Total	\$3,885,361		\$4,242,910

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 12/31/22 (5)	Estimated Ultimate Deductible Losses (6)
2011-12	193,675	1.000	0.0%	\$0	\$265,803	\$265,803
2011-12	224,305	1.000	0.0%	0	230,904	230,904
2011-12	303,311	1.000	0.0%	0	288,623	288,623
2011-12	144,106	1.000	0.0%	0	202,656	202,656
2011-12	375,718	1.001	0.1%	376	371,484	371,860
2011-12	575,301	1.001	0.1%	575	467,921	468,496
2011-12	439,711	1.000	0.0%	0	406,857	406,857
2011-12	291,917	1.001	0.1%	292	293,921	294,213
action modify:	489,133	1.005	0.5%	2,446	469,769	472,215
action modify:	388,380	1.015	1.5%	5,826	334,589	340,415
action modify:	439,822	1.103	9.3%	40,903	474,126	515,029
action modify:	414,894	4.820	79.3%	329,011	78,708	407,719
Total	\$4,280,274			\$379,429	\$3,885,361	\$4,264,790

Notes:

- (1) Page 47, Column (6), adjusted for \$25K limit.
- (2) Page 66, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 66, 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 - 12/31/22

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	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	
2015	13	534	685	589	589	589	629	628	628		
2016	55	828	1,339	1,160	1,185	1,285	1,585	1,585			
2017	13	1,619	2,544	1,764	1,960	2,495	3,127				
2018	277	1,500	1,522	2,123	2,332	2,933					
2019	102	380	1,057	751	1,261						
2020	232	1,381	1,606	1,806							
2021	41	1,484	1,152								
2022	235	1,364									
2023	204										
	<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	9.828	1.408	1.047	1.015	1.104	0.998	1.068	0.934	1.080	1.001	
AVG	36.341	1.560	1.103	1.026	1.080	1.000	1.038	0.975	1.043	1.000	
REFERENCE	3.732	1.398	1.063	1.048	1.042	0.996	0.994	1.010	1.012	1.013	1.005
SELECT	5.722	1.408	1.047	1.048	1.074	1.022	1.016	1.011	1.005	1.000	1.000
CUMULATIVE	10.022	1.752	1.244	1.188	1.134	1.055	1.033	1.016	1.005	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 - 12/31/22

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	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	
2015	10	56	510	589	589	589	628	628	628		
2016	13	142	575	1,072	1,134	1,233	1,585	1,585			
2017	7	309	966	1,608	1,719	2,451	3,127				
2018	21	243	679	984	2,160	2,332					
2019	15	75	283	383	468						
2020	7	701	1,011	1,372							
2021	9	181	436								
2022	6	137									
2023	7										
	<u>6 - 18</u>	<u>18 - 30</u>	<u>30 - 42</u>	<u>42 - 54</u>	<u>54 - 66</u>	<u>66 - 78</u>	<u>78 - 90</u>	<u>90 - 102</u>	<u>102 - 114</u>	<u>114 - 126</u>	<u>126 - Ult.</u>
VOL AVG	22.468	2.551	1.766	1.192	1.078	1.047	1.068	1.001	1.002	1.000	
AVG	33.461	3.274	1.716	1.244	1.064	1.058	1.039	1.002	1.002	1.000	
REFERENCE	13.960	2.155	1.804	1.491	1.192	1.076	1.067	1.072	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

Program Information
Program Years run July 1 to June 30

Program Year	Self-Insured Retention (SIR) * (1)	Payroll (\$00's) (2)	Payroll Trended to 2022-23 (\$00's) (3)	Payroll Trended to 2023-24 (\$00's) (4)	Deductible (5)
2011-12	\$1,000,000	\$454,479	\$683,474	\$711,246	\$10,000
2012-13	1,000,000	422,491	689,625	717,648	10,000
2013-14	1,000,000	436,959	695,832	724,107	10,000
2014-15	1,000,000	455,957	702,094	730,623	10,000
2015-16	1,000,000	472,388	708,413	737,199	10,000
2016-17	1,000,000	518,291	714,789	743,834	10,000
2017-18	1,000,000	545,055	721,222	750,528	10,000
2018-19	1,000,000	590,304	727,713	757,283	10,000
2019-20	1,000,000	622,825	734,262	764,099	10,000
2020-21	1,000,000	628,497	740,871	770,976	10,000
2021-22	1,000,000	692,817	747,539	777,914	10,000
2022-23	1,000,000	754,267	754,267	784,916	25,000
2023-24	?	791,980	761,055	791,980	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).