

Monterey Bay Area Self Insurance Authority

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

**BAY ACTUARIAL CONSULTANTS
Moraga, California
February 26, 2021**

Bay Actuarial Consultants

February 26, 2021

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


Dear Mr. Boughey:

We are pleased to present Bay Actuarial's Actuarial Review of the Monterey Bay Area Self Insurance Authority's General and Auto Liability self-insurance program. We appreciate the opportunity to serve the Authority.

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 2021-22 Losses & Rate of Loss.** It includes a projection of the losses expected to be incurred during 2021-22, 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 12/31/20 and the projected 6/30/21 liability.
- 3) **Discounting.** The projected 2021-22 losses and the estimated liability are discounted to present value at 0.5% interest. Discounting takes the time value of money into account as an offset to future expenses.
- 4) **Quantification of Variability.** 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 insurance to the Authority must perform their own actuarial analysis and may not rely upon our work.

Risk Management Services and Alliant Insurance Services provided the loss, payroll, and excess insurance information. We did not audit this data and are not responsible for its accuracy. In any actuarial analysis the accuracy and relevance of the conclusions and the reasonableness of the recommendations depend upon the accuracy and relevance of the underlying data.

The term "losses" refers to all costs that can be associated with a specific claim. These include loss payments, attorney's fees, and other expenses linked to a specific claim.

The actuarial projections in this report are uncertain estimates. Uncertainty is inherent and unavoidable because many of the events that will determine future claims costs have not yet taken place. These events include, but are not limited to, future legislation that may affect the tort liability system, changes in the rate of inflation, and the outcomes of current and future litigation and settlement negotiations. Our projections are based upon the Authority's historical experience. We did not anticipate any extraordinary changes in the various factors that might affect the future cost of claims. We used actuarial methods that should produce reasonable results given current information. There is no guarantee, express or implied, that losses will develop as projected in this report.

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 of the analysis. The *Technical Approach* section explains and discusses the assumptions and details underlying the calculations. 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 2021-22 Losses and Rates of Loss

Tables I and II shows the projected 2021-22 losses and loss rates at various probability levels, discounted and undiscounted. The rates in Table I are gross of the \$10,000 per loss deductible, while those in Table II are net. The rates are discounted at **0.5%** 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 any general and auto liability losses above \$1,000,000 per loss, and the Employment Risk Management Authority (“ERMA”) is expected to cover any EPL losses above \$500,000.

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 70% probability that the actual 2021-22 losses, including the full amounts of the deductibles (Table I) will be less than **\$2,231,711**. There is a table on page 13 that allows one to discount the losses and loss rates at different interest rates.

| Table I: Projected 2021-22 Losses and Rates of Loss | | | | |
|---|-------------------------------|-----------------------------|----------------------------------|--------------------------------|
| \$1M SIR (\$500K EPL SIR), Gross of \$10K Deductible, 0.5% Interest Rate | | | | |
| Probability <u>Level</u> | Undiscounted <u>Losses</u> | Discounted <u>Losses</u> | Undiscounted <u>Loss Rate</u> | Discounted <u>Loss Rate</u> |
| Central Estimate | \$1,875,387 | \$1,847,256 | \$2.78 | \$2.74 |
| 70% | \$2,231,711 | 2,198,235 | 3.31 | 3.26 |
| 75% | 2,400,495 | 2,364,488 | 3.56 | 3.51 |
| 80% | 2,588,034 | 2,549,214 | 3.84 | 3.78 |
| 90% | 3,150,650 | 3,103,390 | 4.67 | 4.60 |
| 2020-21 C.E. | \$1,746,671 | \$1,723,964 | \$2.63 | \$2.60 |
| % Change from 20-21 | +7.4% | +7.2% | +5.7% | +5.4% |

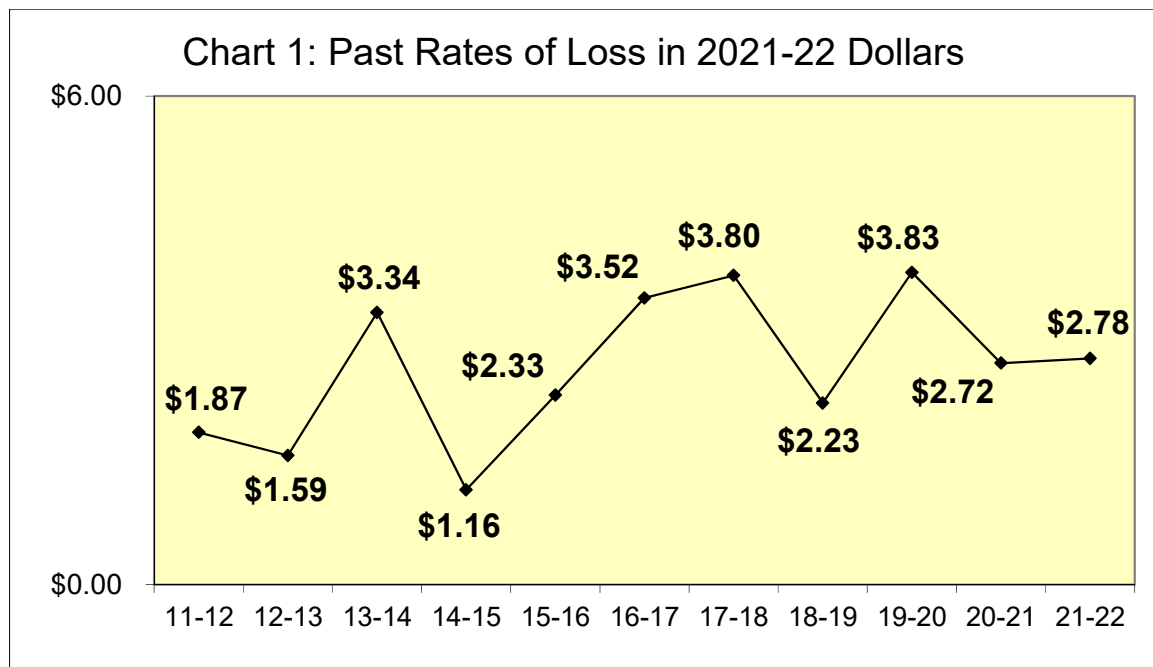
The change from last year in the projected total losses was +7.4%. The projected *rate of loss* increased less, by 5.7%.

| Table II: Projected 2021-22 Losses and Loss Rates | | | | |
|---|----------------------------|--------------------------|-------------------------------|-----------------------------|
| \$1M SIR (\$500K EPL SIR), NET of \$10K Deductible, 0.5% Interest Rate | | | | |
| <u>Probability Level</u> | <u>Undiscounted Losses</u> | <u>Discounted Losses</u> | <u>Undiscounted Loss Rate</u> | <u>Discounted Loss Rate</u> |
| Central Estimate | \$1,666,054 | \$1,639,397 | \$2.47 | \$2.43 |
| 70% | 2,015,926 | 1,983,671 | 2.99 | 2.94 |
| 75% | 2,182,531 | 2,147,611 | 3.24 | 3.18 |
| 80% | 2,382,458 | 2,344,338 | 3.53 | 3.47 |
| 90% | 2,965,577 | 2,918,127 | 4.40 | 4.33 |
| 2020-21 C.E. | \$1,574,770 | \$1,552,723 | \$2.37 | \$2.34 |
| % Change from 20-21 | +5.8% | +5.6% | +4.2% | +3.8% |

The credit for the \$10,000 deductible is about 11% of the gross of deductible rate.

The Authority's Past Rates of Loss

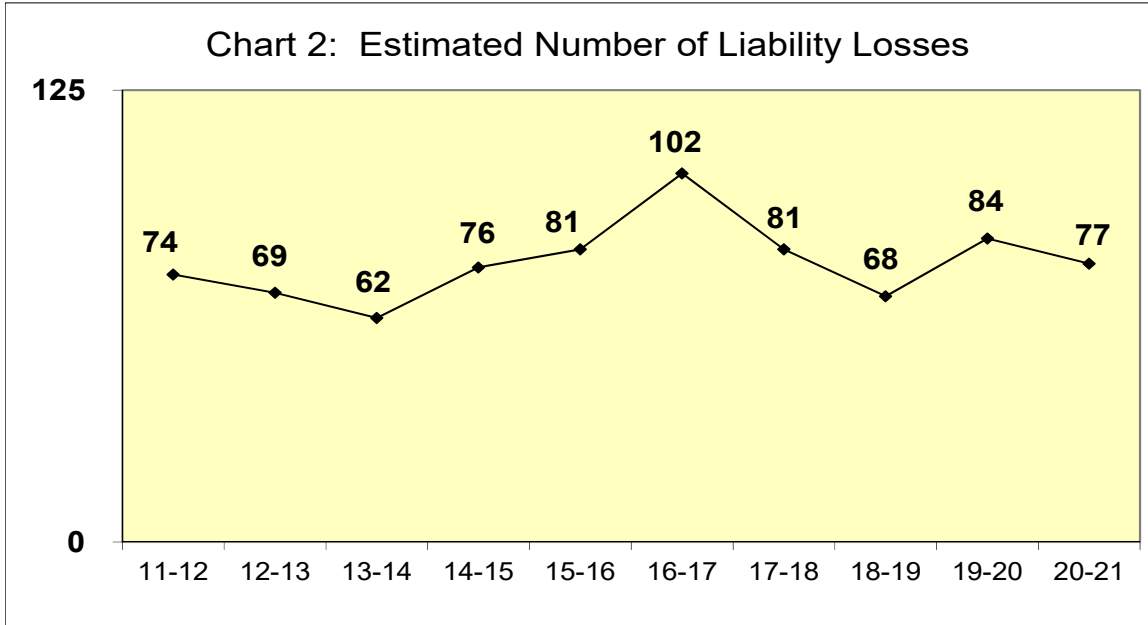
Chart 1 shows the Authority's estimated past rates of loss at the \$1M/\$500K (\$500K EPL) SIR. The older rates are equal to the estimated total losses divided by the total insured payroll. The **\$2.78** rate for 2021-22 is the projected undiscounted central estimate rate from Table I. These are undiscounted rates.



The average of the rates shown in this chart, excluding 2021-22's projected rate of **\$2.78**, is **\$2.64**.

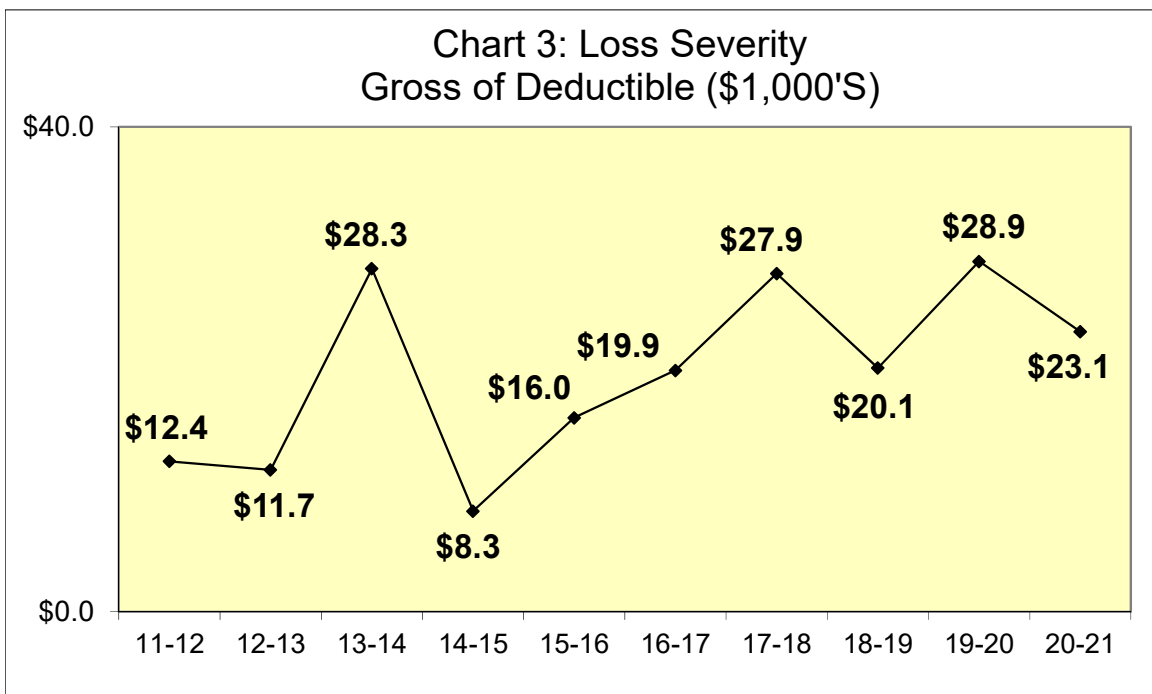
Estimated Number of Losses

Chart 2 shows the estimated number off losses by program year. The 2020-21 estimate of 77 is based on the 22 2020-21 losses that had actually been reported by 12/31/20.



Average Loss Amount

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



Liability for Unpaid Losses

We estimate that the Authority's liability for unpaid losses was **\$5,164,088** on 12/31/20. This is an undiscounted estimate and does not include the portion of the losses that the members will pay under their \$10,000 deductibles. Table III shows this central estimate plus the corresponding discounted amount. The Table also includes higher probability estimates for the liability.

| Table III: Estimated Liability for Unpaid Losses as of 12/31/20 – Net of Deductibles | | |
|---|------------------------|-----------------------|
| Probability Level | Undiscounted Losses | Discounted at 0.5% |
| Central Estimate | \$5,164,088 | \$5,117,479 |
| 60% | 5,267,370 | 5,219,829 |
| 70% | 5,628,856 | 5,578,052 |
| 75% | 5,835,420 | 5,782,751 |
| 80% | 6,041,983 | 5,987,450 |
| 90% | 6,764,956 | 6,703,897 |

Table IV shows the estimated liability gross of deductibles.

| Table IV: Estimated Liability for Unpaid Losses as of 12/31/20 – Gross of Deductibles | | |
|--|------------------------|-----------------------|
| Probability Level | Undiscounted Losses | Discounted at 0.5% |
| Central Estimate | \$5,353,899 | \$5,305,714 |
| 60% | 5,460,977 | 5,411,828 |
| 70% | 5,835,750 | 5,783,228 |
| 75% | 6,049,906 | 5,995,457 |
| 80% | 6,264,062 | 6,207,685 |
| 90% | 7,013,608 | 6,950,485 |

Table V shows the projection of the 6/30/21 liability.

| Table V: Projected 6/30/21 Liability Net of Deductibles | |
|--|--------------------|
| 12/31/20 Liability Central Estimate | \$5,164,088 |
| Projected Payments 1/1/21 to 6/30/21 | -982,695 |
| Projected New Losses 1/1/21 to 6/30/21 | +825,000 |
| Projected 6/30/21 Central Estimate | \$5,006,393 |

Table VI shows the projected probability levels for the projected 6/30/21 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 the projections in Table V exactly.

| Table VI: Projected Estimate of 6/30/21 Liability Net of Deductibles | | |
|---|--------------------------------|-------------------------------|
| Probability Level | Undiscounted Losses | Discounted at 0.5% |
| Central Estimate | \$5,006,393 | \$4,961,336 |
| 60% | 5,106,521 | 5,060,562 |
| 70% | 5,456,969 | 5,407,856 |
| 75% | 5,657,224 | 5,606,309 |
| 80% | 5,857,480 | 5,804,763 |
| 90% | 6,558,375 | 6,499,350 |

Capital Requirements

Subtracting the central estimate from the higher probability estimates produces estimates of the capital required to attain those higher probability levels. For example, the difference between the 70% level and the undiscounted central estimate is **\$450,030**, so that is the capital required to attain 70%. A similar calculation shows that a total of **\$650,831** would be required to attain 75%. Therefore the required *increase* to go from 70% to 75% is currently **\$200,801**.

These numbers change every year because the estimated liability is a moving target that is constantly rising and falling. Last year the projected capital required to go from 70% to 75% at 6/30/20 was only **\$288,967**. However last year the projected liability was only **\$3,209,915**, in comparison to **\$5,006,393** at 6/30/21.

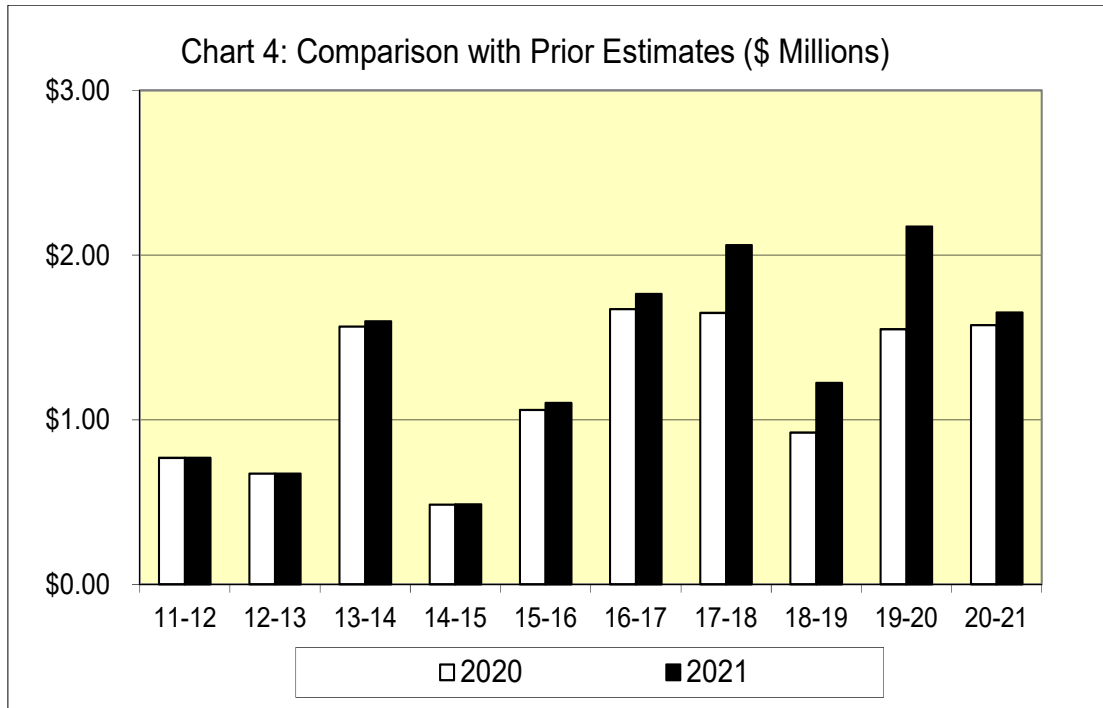
There is another version of Table VI (page 20) that shows the *current 12/31/20* estimates of these 6/30/21 probability levels taking into account all possible outcomes of claims expenditures and new losses over the next six months. Those probability levels are significantly higher than those that assume the projections in Table V are correct.

ULAE Liability

We estimate the liability for unpaid unallocated loss adjustment expenses (“ULAE”) at **\$284,031** on both 12/31/20 and 6/30/21. This is on page 23.

Comparison with 2020 Estimates

Chart 4 compares last year's estimates of the net of deductible losses with the new estimates. There was adverse loss development in program years 2017-18, 2018-19, and 2019-20. The 20-21 columns are the initial projections from one year ago and the new estimate based on the 12/31/20 data.



The overall increase in the estimates for all years through 2019-20 was **\$1,502,508**. This is an unusually large amount of adverse loss development so we did some investigation. Much of the increase in 2017-18 was due to an increase in the estimated value of a property damage case, from about \$400,000 to over \$800,000. In 2018-19 a closed claim having to do with auto liability reopened and now has a reserve of over \$300,000. The increase in 2019-20 is one of those unavoidable situations where the first six months of claims data (7/1/19 through 12/31/19) looks good but the full year's losses look very poor one year later.

This adverse loss development also affected the rate projection for 2021-22. The estimates of the program year ultimate losses in Chart 4 feed into the rate calculation, so increases here mean increases there.

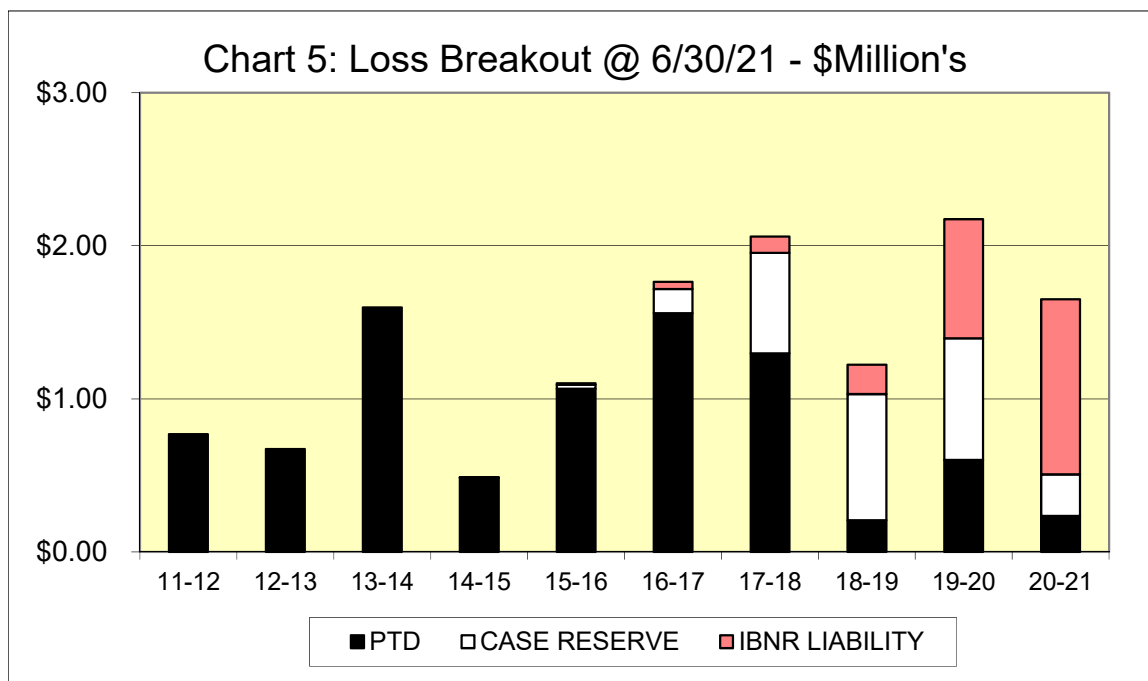
Reconciling the 12/31/19 & 12/31/20 Liabilities

In the 2020 report the estimated liability, net of deductibles, was **\$3,194,163** on 12/31/19. Table III shows the 12/31/20 central estimate of **\$5,164,088**. Table VII reconciles these two amounts.

| Table VI: Reconcile 12/31/19 & 12/31/20 Liabilities | |
|--|--------------------|
| Estimated 12/31/19 Liability | \$3,194,163 |
| Payments in Calendar 2020 | -1,132,583 |
| Change in Estimates for 12/31/19 and Prior | +1,191,008 |
| Estimated Losses Calendar 2020 | +1,911,500 |
| <hr/> | |
| 12/31/20 Liability | \$5,164,088 |

Loss Breakout as of 6/30/21

In Tables V and VI show the Authority's projected 6/30/21 liability of **\$5,006,393**, net of deductibles. This comprises projected case reserves for known claims of **\$2,731,602** and an IBNR liability of **\$2,274,792**. This is **\$0.83** of IBNR liability for every \$1.00 of case reserves. Chart 5 breaks out the projected losses into their components: losses paid, case reserves, and IBNR liability. The projected 6/30/21 dollar amounts are shown on page 25.



Short-Term Liability

Short-term liabilities are those expected to be discharged within twelve months. The total projected 6/30/21 liability of **\$5,006,393** comprises **\$1,531,891** of short-term and **\$3,474,502** of long-term liabilities.

Interest Rates

The discounted liabilities and rates in this report were discounted at **0.5%** interest. Here are the adjustments to make for different interest rate assumptions:

| Interest Rate | 0.0% | 0.21% | 0.4% | 0.50% | 0.6% |
|---------------|-------|-------|------|-------|-------|
| Gross Rates | +1.5% | +0.9% | 0.2% | -0.1% | -0.2% |
| Net Rates | +1.6% | +0.9% | 0.2% | 0.0% | -0.2% |
| Liabilities | +0.9% | +0.5% | 0.1% | 0.0% | -0.1% |

Given currently available market interest rates the Authority could fund the projected 6/30/21 liability by investing in US Treasuries and earn a yield to maturity of about **0.21%**.

Funding the projected 2021-22 losses with US Treasuries could yield **0.44%**. Using high quality corporate bonds instead of treasuries would increase the prospective yield on the 2021-22 loss investment to about **0.58%** per year. Therefore **0.5%** appeared to be a reasonable compromise for the interest rate used in this report.

COVID 19

We normally comment on the effect that COVID 19 is having on claims. In MBASIA's case we do not see any effect at all on the number of claims or their amounts. There were no adjustments for COVID 19 effects.

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, 2, and 3 show the liabilities for unpaid losses as of 12/31/20 and 6/30/21. There are two sets of 6/30/21 probability levels. The first one assumes that losses develop over the next six months as we currently project. The other takes all possible outcomes over the next six months into account. Summary Exhibit 4 shows the projected rate for the 2021-22 program year, which runs from 7/1/21 to 6/30/22. Summary Exhibit 5 shows the projected unpaid losses as of 6/30/21 by program year on both discounted and non-discounted bases. Summary Exhibit 6 shows the projected ULAE liability.

Fiscal Year End Exhibits

These exhibits show the calculation of the projected unpaid losses as of 6/30/21.

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 2021-22 loss rate.

Future Loss Exhibits

These exhibits show the projection of the expected rate for 2021-22.

Discounting Exhibits

These exhibits show the discounting of the remaining unpaid losses and the projected future loss rate. They also include the Program Information Exhibit.

Deductibles Exhibits

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

Claims Data

We included development triangles for reported losses 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 12/31/20
Losses Limited to SIR, NET of \$10K Deductible

| | <u>12/31/20</u> |
|---|-----------------|
| (1) Estimated Unpaid Losses: | \$5,164,088 |
| (2) Discounted Value of Unpaid Losses: (Assuming 0.5% Interest Rate) | \$5,117,479 |

Probability Levels for 12/31/20 Liabilities

| Probability Level <u>(3)</u> | Probability Factor <u>(4)</u> | Discounted * Liability <u>(5)</u> |
|------------------------------------|-------------------------------------|---|
| Central Estimate | 1.00 | \$5,117,479 |
| 60% | 1.02 | 5,219,828 |
| 70% | 1.09 | 5,578,052 |
| 75% | 1.13 | 5,782,751 |
| 80% | 1.17 | 5,987,450 |
| 90% | 1.31 | 6,703,897 |

* Multiply by 1.009 to obtain undiscounted values.

Notes:

- (1) Page 26, Column (6).
- (2) (1), discounted at 0.50% interest.
- (3) Estimated probability that funding will be adequate.
- (4) Estimated by BAC.
- (5) (2) x (4).

Monterey Bay Area Self Insurance Authority
Property & Liability Programs

Projected June 30, 2021 Estimate of Liability

| | Net of Deductibles |
|--|-----------------------|
| (1) Estimated Unpaid Losses: 12/31/20 | \$5,164,088 |
| (2) Projected payments over next six months: | \$982,695 |
| (3) Projected new losses over next six months: | \$825,000 |
| (4) Projected Unpaid Losses: 6/30/21 | \$5,006,393 |

| Probability Level (5) | Projected Estimated Probability Factor (6) | Undiscounted Net of Deductibles (7) | Discounted Net of Deductibles (8) |
|-----------------------------|--|--|--|
| Central Estimate | 1.00 | \$5,006,393 | \$4,961,336 |
| 60% | 1.02 | 5,106,521 | 5,060,562 |
| 70% | 1.09 | 5,456,969 | 5,407,856 |
| 75% | 1.13 | 5,657,224 | 5,606,309 |
| 80% | 1.17 | 5,857,480 | 5,804,763 |
| 90% | 1.31 | 6,558,375 | 6,499,350 |

Items (7) & (8) depend upon the accuracy of the projections in items (2) & (3).
The assumption is that actual expenditures and actual new losses will match items (2) & (3) exactly.

Notes:

- (1) Page 18, Item (1).
- (2) Projected by BAC.
- (3) Projected by BAC.
- (4) (1) - (2) + (3).
- (5) Projected Probability on 6/30/21.
- (6) Projected by BAC.
- (7) (4) x (6).
- (8) (7), discounted at 0.50% interest.

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Projected Unpaid Losses as of 6/30/21
Losses Limited to SIR, NET of \$10K Deductible

| | <u>06/30/21</u> |
|---|-----------------|
| (1) Projected Unpaid Losses: | \$5,006,393 |
| (2) Discounted Value of Unpaid Losses: (Assuming 0.5% Interest Rate) | \$4,961,207 |

Estimated Probability Levels for 6/30/21 Liabilities

| 12/31/20 Estimate of 6/30/21 Probability Level <u>(3)</u> | Probability Factor <u>(4)</u> | Discounted * Liability <u>(5)</u> |
|--|-------------------------------------|---|
| Central Estimate | 1.00 | \$4,961,207 |
| 60% | 1.01 | 5,010,819 |
| 70% | 1.12 | 5,556,552 |
| 75% | 1.19 | 5,903,836 |
| 80% | 1.27 | 6,300,733 |
| 90% | 1.51 | 7,491,423 |

* Multiply by 1.009 to obtain undiscounted values.

Notes:

- (1) Page 22, Column (1).
- (2) Page 22, Column (2).
- (3) Estimated probability that funding will be adequate.
- (4) Estimated by BAC.
- (5) (2) x (4).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Loss Funding Rate for 2021-22
Losses Limited to \$1,000,000, NET of \$10K Deductible

(1) Discounted Loss Rate: Loss Rates
\$2.43
(as of July 1, 2021, 0.5% interest rate)

| <u>Probability Levels</u> | | |
|------------------------------------|-------------------------------------|------------------------------------|
| Probability Level <u>(2)</u> | Probability Factor <u>(3)</u> | Discounted * Rate <u>(4)</u> |
| 50% | 0.89 | 2.16 |
| Central Estimate | 1.00 | \$2.43 |
| 60% | 1.03 | 2.50 |
| 70% | 1.21 | 2.94 |
| 75% | 1.31 | 3.18 |
| 80% | 1.43 | 3.47 |
| 90% | 1.78 | 4.33 |

* Multiply by 1.016 to obtain undiscounted values.

Notes:

- (1) [Page 55, Column] x [Page 61, Column (4)],
adjusted for \$10,000 deductible.
- (2) Estimated probability that funding will be adequate.
- (3) Estimated by BAC.
- (4) (1) x (3).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2021
Losses Limited to SIR, NET of \$10K Deductible

| Program Year | Undiscounted Value: Claims Liabilities as of 6/30/21 (1) | Discounted (0.5% Interest) Claims Liabilities as of 6/30/21 (2) | Estimated Ultimate Losses (3) |
|-----------------|--|---|--|
| 2011-12 | \$0 | \$0 | \$768,381 |
| 2012-13 | 0 | 0 | 672,565 |
| 2013-14 | 0 | 0 | 1,597,495 |
| 2014-15 | 1,128 | 1,126 | 485,837 |
| 2015-16 | 35,507 | 35,406 | 1,101,652 |
| 2016-17 | 204,806 | 203,994 | 1,764,000 |
| 2017-18 | 762,740 | 759,302 | 2,060,000 |
| 2018-19 | 1,015,798 | 1,008,474 | 1,223,000 |
| 2019-20 | 1,571,957 | 1,556,565 | 2,173,000 |
| 2020-21 | 1,414,458 | 1,396,340 | 1,650,000 |
| Total | \$5,006,393 | \$4,961,207 | \$13,495,930 |

Notes:

- (1) Page 25, Column (6).
- (2) Page 59, Column (3).
- (3) Page 25, 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 12/31/20: | \$4,124,752 | \$1,229,148 | \$5,353,899 |
| (4) Estimated Unpaid ULAE as of 12/31/20: | \$177,364 | \$106,667 | \$284,031 |
| (5) Discounted Unpaid ULAE as of 12/31/20: (0.5% interest rate) | | | \$281,475 |

We project that the 6/30/21 ULAE liability
will equal the 12/31/20 ULAE liability.

Notes:

- (1) Estimated by BAC.
- (2) "50-50 Rule."
- (3) Page 32, 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 June 30, 2021
Losses Limited to SIR, NET of \$10K Deductible

| Program Year | Estimated Ultimate Losses (1) | Projected Losses Paid as of 6/30/21 (2) | Projected Case Reserves 6/30/21 (3) | Projected Losses Reported as of 6/30/21 (4) | Projected IBNR as of 6/30/21 (5) | Projected Unpaid Losses as of 6/30/21 (6) |
|-----------------|--|---|---|---|--|---|
| 2011-12 | \$768,381 | \$768,381 | \$0 | \$768,381 | \$0 | \$0 |
| 2012-13 | 672,565 | 672,565 | 0 | 672,565 | 0 | 0 |
| 2013-14 | 1,597,495 | 1,597,495 | 0 | 1,597,495 | 0 | 0 |
| 2014-15 | 485,837 | 484,708 | 397 | 485,105 | 731 | 1,128 |
| 2015-16 | 1,101,652 | 1,066,145 | 26,417 | 1,092,563 | 9,089 | 35,507 |
| 2016-17 | 1,764,000 | 1,559,194 | 158,592 | 1,717,785 | 46,215 | 204,806 |
| 2017-18 | 2,060,000 | 1,297,260 | 655,827 | 1,953,087 | 106,913 | 762,740 |
| 2018-19 | 1,223,000 | 207,202 | 824,192 | 1,031,394 | 191,606 | 1,015,798 |
| 2019-20 | 2,173,000 | 601,043 | 794,662 | 1,395,705 | 777,295 | 1,571,957 |
| 2020-21 | 1,650,000 | 235,542 | 271,515 | 507,057 | 1,142,943 | 1,414,458 |
| Total | \$13,495,930 | \$8,489,536 | \$2,731,602 | \$11,221,138 | \$2,274,792 | \$5,006,393 |

Notes:

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

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Estimated Unpaid Losses as of December 31, 2020
Losses Limited to SIR, NET of \$10K Deductible

| Program Year | Estimated Ultimate Losses (1) | Losses Paid as of 12/31/20 (2) | Case Reserves 12/31/20 (3) | Losses Reported as of 12/31/20 (4) | Estimated IBNR as of 12/31/20 (5) | Estimated Unpaid Losses as of 12/31/20 (6) |
|-----------------|--|---|-------------------------------------|---|---|--|
| 2011-12 | \$768,381 | \$768,381 | \$0 | \$768,381 | \$0 | \$0 |
| 2012-13 | 672,565 | 672,565 | 0 | 672,565 | 0 | 0 |
| 2013-14 | 1,597,495 | 1,597,495 | 0 | 1,597,495 | 0 | 0 |
| 2014-15 | 485,837 | 483,578 | 796 | 484,373 | 1,463 | 2,259 |
| 2015-16 | 1,101,652 | 1,034,550 | 51,914 | 1,086,464 | 15,189 | 67,102 |
| 2016-17 | 1,764,000 | 1,453,929 | 241,097 | 1,695,026 | 68,974 | 310,071 |
| 2017-18 | 2,060,000 | 785,164 | 1,138,042 | 1,923,205 | 136,795 | 1,274,836 |
| 2018-19 | 1,223,000 | 149,943 | 763,073 | 913,015 | 309,985 | 1,073,057 |
| 2019-20 | 2,173,000 | 561,237 | 580,915 | 1,142,152 | 1,030,848 | 1,611,763 |
| 2020-21 | 825,000 | 0 | 15,500 | 15,500 | 809,500 | 825,000 |
| Total | \$12,670,930 | \$7,506,841 | \$2,791,336 | \$10,298,178 | \$2,372,752 | \$5,164,088 |

Notes:

(1) through (6) Page 29 entries minus Page 32 entries.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Losses as of June 30, 2021
Losses Limited to SIR, Gross of \$10K Deductible

| Program Year | Estimated Ultimate Losses (1) | Projected Losses Paid as of 6/30/21 (2) | Projected Case Reserves 6/30/21 (3) | Projected Losses Reported as of 6/30/21 (4) | Projected IBNR as of 6/30/21 (5) | Projected Unpaid Losses as of 6/30/21 (6) |
|-----------------|--|---|---|---|--|---|
| 2011-12 | \$921,236 | \$921,236 | \$0 | \$921,236 | \$0 | \$0 |
| 2012-13 | 805,895 | 805,895 | 0 | 805,895 | 0 | 0 |
| 2013-14 | 1,754,364 | 1,754,364 | 0 | 1,754,364 | 0 | 0 |
| 2014-15 | 630,000 | 628,872 | 397 | 629,269 | 731 | 1,128 |
| 2015-16 | 1,300,000 | 1,264,493 | 26,417 | 1,290,911 | 9,089 | 35,507 |
| 2016-17 | 2,030,000 | 1,824,651 | 158,669 | 1,983,320 | 46,680 | 205,349 |
| 2017-18 | 2,260,000 | 1,496,202 | 656,352 | 2,152,553 | 107,447 | 763,798 |
| 2018-19 | 1,370,000 | 347,070 | 829,533 | 1,176,602 | 193,398 | 1,022,930 |
| 2019-20 | 2,430,000 | 791,693 | 838,433 | 1,630,126 | 799,874 | 1,638,307 |
| 2020-21 | 1,780,000 | 278,799 | 302,152 | 580,951 | 1,199,049 | 1,501,201 |
| Total | \$15,281,495 | \$10,113,276 | \$2,811,953 | \$12,925,229 | \$2,356,266 | \$5,168,219 |

Notes:

- (1) Page 34, Column (6).
- (2) Page 28, Column (3).
- (3) (4) - (2).
- (4) Page 28, 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 1/1/21 and 6/30/21
Losses Limited to SIR, Gross of \$10K Deductible

| Program Year | Losses Paid as of 12/31/20 (1) | Projected Losses Paid 1/1/21 - 6/30/21 (2) | Projected Losses Paid as of 6/30/21 (3) | Losses Reported as of 12/31/20 (4) | Projected Losses Reported 1/1/21 - 6/30/21 (5) | Projected Losses Reported as of 6/30/21 (6) |
|-----------------|--|---|--|--|---|--|
| 2011-12 | \$921,236 | \$0 | \$921,236 | \$921,236 | \$0 | \$921,236 |
| 2012-13 | 805,895 | 0 | 805,895 | 805,895 | 0 | 805,895 |
| 2013-14 | 1,754,364 | 0 | 1,754,364 | 1,754,364 | 0 | 1,754,364 |
| 2014-15 | 627,741 | 1,130 | 628,872 | 628,537 | 732 | 629,269 |
| 2015-16 | 1,232,898 | 31,596 | 1,264,493 | 1,284,811 | 6,099 | 1,290,911 |
| 2016-17 | 1,718,843 | 105,809 | 1,824,651 | 1,960,095 | 23,225 | 1,983,320 |
| 2017-18 | 983,864 | 512,338 | 1,496,202 | 2,122,538 | 30,015 | 2,152,553 |
| 2018-19 | 283,363 | 63,707 | 347,070 | 1,056,912 | 119,691 | 1,176,602 |
| 2019-20 | 700,781 | 90,912 | 791,693 | 1,358,192 | 271,934 | 1,630,126 |
| 2020-21 | 8,610 | 270,189 | 278,799 | 40,618 | 540,334 | 580,951 |
| Total | \$9,037,596 | \$1,075,680 | \$10,113,276 | \$11,933,199 | \$992,029 | \$12,925,229 |

Notes:

- (1) Page 36, Column (1).
- (2) Projected by BAC.
- (3) (1) + (2).
- (4) Page 35, Column (1).
- (5) Projected by BAC.
- (6) (4) + (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Estimated Unpaid Losses as of December 31, 2020
Losses Limited to SIR, Gross of \$10K Deductible

| Program Year | Estimated Ultimate Losses (1) | Losses Paid as of 12/31/20 (2) | Case Reserves 12/31/20 (3) | Losses Reported as of 12/31/20 (4) | Estimated IBNR as of 12/31/20 (5) | Estimated Unpaid Losses as of 12/31/20 (6) |
|-----------------|--|---|-------------------------------------|---|---|--|
| 2011-12 | \$921,236 | \$921,236 | \$0 | \$921,236 | \$0 | \$0 |
| 2012-13 | 805,895 | 805,895 | 0 | 805,895 | 0 | 0 |
| 2013-14 | 1,754,364 | 1,754,364 | 0 | 1,754,364 | 0 | 0 |
| 2014-15 | 630,000 | 627,741 | 796 | 628,537 | 1,463 | 2,259 |
| 2015-16 | 1,300,000 | 1,232,898 | 51,914 | 1,284,811 | 15,189 | 67,102 |
| 2016-17 | 2,030,000 | 1,718,843 | 241,253 | 1,960,095 | 69,905 | 311,157 |
| 2017-18 | 2,260,000 | 983,864 | 1,138,674 | 2,122,538 | 137,462 | 1,276,136 |
| 2018-19 | 1,370,000 | 283,363 | 773,549 | 1,056,912 | 313,088 | 1,086,637 |
| 2019-20 | 2,430,000 | 700,781 | 657,411 | 1,358,192 | 1,071,808 | 1,729,219 |
| 2020-21 | 890,000 | 8,610 | 32,008 | 40,618 | 849,382 | 881,390 |
| Total | \$14,391,495 | \$9,037,596 | \$2,895,604 | \$11,933,199 | \$2,458,296 | \$5,353,899 |

Notes:

- (1) Page 34, Column (6).
2020-21 entry adjusted for incomplete year through 12/31/20.
- (2) Page 36, Column (1).
- (3) (4) - (2).
- (4) Page 35, Column (1).
- (5) (1) - (4).
- (6) (1) - (2).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Projected Unpaid Deductibles as of June 30, 2021
Losses Limited to \$10K Deductible

| Program Year | Estimated Ultimate Deductibles (1) | Projected Ded Paid as of 6/30/21 (2) | Projected Case Reserves 6/30/21 (3) | Projected Ded Reported as of 6/30/21 (4) | Projected Deductible IBNR as of 6/30/21 (5) | Projected Deductible Losses as of 6/30/21 (6) |
|-----------------|---|--|---|--|---|---|
| 2011-12 | \$152,855 | \$152,855 | \$0 | \$152,855 | \$0 | \$0 |
| 2012-13 | 133,330 | 133,330 | 0 | 133,330 | 0 | 0 |
| 2013-14 | 156,869 | 156,869 | 0 | 156,869 | 0 | 0 |
| 2014-15 | 144,164 | 144,164 | 0 | 144,164 | 0 | 0 |
| 2015-16 | 198,348 | 198,348 | 0 | 198,348 | 0 | 0 |
| 2016-17 | 266,000 | 265,458 | 77 | 265,535 | 465 | 542 |
| 2017-18 | 200,000 | 198,942 | 525 | 199,466 | 534 | 1,058 |
| 2018-19 | 147,000 | 139,868 | 5,341 | 145,209 | 1,791 | 7,132 |
| 2019-20 | 257,000 | 190,650 | 43,771 | 234,421 | 22,579 | 66,350 |
| 2020-21 | 130,000 | 43,257 | 30,637 | 73,895 | 56,105 | 86,743 |
| Total | \$1,785,565 | \$1,623,740 | \$80,351 | \$1,704,091 | \$81,475 | \$161,826 |

Notes:

- (1) Page 63, Column (3).
- (2) Page 31, Column (3).
- (3) (4) - (2).
- (4) Page 31, 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 1/1/21 and 6/30/21
Losses Limited to \$10K Deductible

| Program Year | Ded Paid as of 12/31/20 (1) | Projected Losses Paid 1/1/21 - 6/30/21 (2) | Projected Losses Paid as of 6/30/21 (3) | Losses Reported as of 12/31/20 (4) | Projected Losses Reported 1/1/21 - 6/30/21 (5) | Projected Losses Reported as of 6/30/21 (6) |
|-----------------|---|---|--|--|---|--|
| 2011-12 | \$152,855 | \$0 | \$152,855 | \$152,855 | \$0 | \$152,855 |
| 2012-13 | 133,330 | 0 | 133,330 | 133,330 | 0 | 133,330 |
| 2013-14 | 156,869 | 0 | 156,869 | 156,869 | 0 | 156,869 |
| 2014-15 | 144,164 | 0 | 144,164 | 144,164 | 0 | 144,164 |
| 2015-16 | 198,348 | 0 | 198,348 | 198,348 | 0 | 198,348 |
| 2016-17 | 264,914 | 543 | 265,458 | 265,070 | 465 | 265,535 |
| 2017-18 | 198,700 | 242 | 198,942 | 199,333 | 134 | 199,466 |
| 2018-19 | 133,420 | 6,447 | 139,868 | 143,896 | 1,312 | 145,209 |
| 2019-20 | 139,544 | 51,105 | 190,650 | 216,040 | 18,381 | 234,421 |
| 2020-21 | 8,610 | 34,647 | 43,257 | 25,118 | 48,777 | 73,895 |
| Total | \$1,530,754 | \$92,985 | \$1,623,740 | \$1,635,022 | \$69,069 | \$1,704,091 |

Notes:

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

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Estimated Unpaid Deductibles as of December 31, 2020
Losses Limited to \$10K Deductible

| Program Year | Estimated Ultimate Deductibles (1) | Ded Paid as of 12/31/20 (2) | Case Reserves 12/31/20 (3) | Ded Reported as of 12/31/20 (4) | Estimated Deductible IBNR as of 12/31/20 (5) | Estimated Deductible Losses as of 12/31/20 (6) |
|-----------------|---|--------------------------------------|-------------------------------------|--|--|--|
| 2011-12 | \$152,855 | \$152,855 | \$0 | \$152,855 | \$0 | \$0 |
| 2012-13 | 133,330 | 133,330 | 0 | 133,330 | 0 | 0 |
| 2013-14 | 156,869 | 156,869 | 0 | 156,869 | 0 | 0 |
| 2014-15 | 144,164 | 144,164 | 0 | 144,164 | 0 | 0 |
| 2015-16 | 198,348 | 198,348 | 0 | 198,348 | 0 | 0 |
| 2016-17 | 266,000 | 264,914 | 156 | 265,070 | 930 | 1,086 |
| 2017-18 | 200,000 | 198,700 | 633 | 199,333 | 667 | 1,300 |
| 2018-19 | 147,000 | 133,420 | 10,476 | 143,896 | 3,104 | 13,580 |
| 2019-20 | 257,000 | 139,544 | 76,495 | 216,040 | 40,960 | 117,456 |
| 2020-21 | 65,000 | 8,610 | 16,508 | 25,118 | 39,882 | 56,390 |
| Total | \$1,720,565 | \$1,530,754 | \$104,267 | \$1,635,022 | \$85,544 | \$189,811 |

Notes:

- (1) Page 63, Column (3).
2020-21 adjusted for partial year through 12/31/20.
- (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 \$10K 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 | \$921,236 | \$921,236 | \$921,236 | \$921,236 | \$1,259,572 | \$921,236 |
| 2012-13 | 805,895 | 805,895 | 805,895 | 805,895 | 1,212,048 | 805,895 |
| 2013-14 | 1,754,364 | 1,754,364 | 1,754,364 | 1,754,364 | 1,123,938 | 1,754,364 |
| 2014-15 | 628,537 | 627,741 | 628,537 | 628,537 | 1,421,817 | 630,000 |
| 2015-16 | 1,293,334 | 1,249,632 | 1,335,116 | 1,295,308 | 1,563,850 | 1,300,000 |
| 2016-17 | 2,034,986 | 1,792,912 | 3,928,475 | 2,017,400 | 2,032,309 | 2,030,000 |
| 2017-18 | 2,281,900 | 1,190,334 | 2,890,005 | 2,234,394 | 1,665,537 | 2,260,000 |
| 2018-19 | 1,291,245 | 610,876 | 1,452,969 | 1,355,357 | 1,442,972 | 1,370,000 |
| 2019-20 | 2,766,155 | 5,315,628 | 2,289,743 | 2,224,278 | 1,839,535 | 2,430,000 |
| 2020-21 | 3,234,377 | 2,320,973 | 3,612,527 | 1,773,770 | 1,740,200 | 1,780,000 |
| Total | \$17,012,029 | \$16,589,591 | \$19,618,868 | \$15,010,540 | \$15,301,778 | \$15,281,495 |

Notes:

- (1) Page 35, Column (3).
- (2) Page 36, Column (3).
- (3) Page 37, Column (6).
- (4) Page 38, Column (6).
- (5) Page 42, Column (4).
- (6) Selected on the basis of (1) - (5).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Cumulative Reported Losses as of 12/31/20 (1) | Reported Development Factor as of 12/31/20 (2) | Projected Ultimate Losses (3) |
|-----------------|---|---|--|
| 2011-12 | \$921,236 | 1.000 | \$921,236 |
| 2012-13 | 805,895 | 1.000 | 805,895 |
| 2013-14 | 1,754,364 | 1.000 | 1,754,364 |
| 2014-15 | 628,537 | 1.000 | 628,537 |
| 2015-16 | 1,284,811 | 1.007 | 1,293,334 |
| 2016-17 | 1,960,095 | 1.038 | 2,034,986 |
| 2017-18 | 2,122,538 | 1.075 | 2,281,900 |
| 2018-19 | 1,056,912 | 1.222 | 1,291,245 |
| 2019-20 | 1,358,192 | 2.037 | 2,766,155 |
| 2020-21 | 40,618 | 79.630 | 3,234,377 |
| Total | \$11,933,199 | | \$17,012,029 |

Notes:

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

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Cumulative Paid Losses as of 12/31/20 <u>(1)</u> | Paid Development Factor as of 12/31/20 <u>(2)</u> | Projected Ultimate Losses <u>(3)</u> |
|-----------------|--|--|---|
| 2011-12 | \$921,236 | 1.000 | \$921,236 |
| 2012-13 | 805,895 | 1.000 | 805,895 |
| 2013-14 | 1,754,364 | 1.000 | 1,754,364 |
| 2014-15 | 627,741 | 1.000 | 627,741 |
| 2015-16 | 1,232,898 | 1.014 | 1,249,632 |
| 2016-17 | 1,718,843 | 1.043 | 1,792,912 |
| 2017-18 | 983,864 | 1.210 | 1,190,334 |
| 2018-19 | 283,363 | 2.156 | 610,876 |
| 2019-20 | 700,781 | 7.585 | 5,315,628 |
| 2020-21 | 8,610 | 269.558 | 2,320,973 |
| Total | \$9,037,596 | | \$16,589,591 |

Notes:

- (1) Provided by Risk Management Services.
- (2) Page 68.
- (3) (1) x (2), rounded.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Reported Development Factor as of 12/31/20 (1) | Paid Development Factor as of 12/31/20 (2) | IBNR to Case Reserves Ratio (3) | Case Reserves 12/31/20 (4) | Estimated IBNR as of 12/31/20 (5) | Estimated Ultimate Losses (6) |
|-----------------|---|---|---|-------------------------------------|---|--|
| 2011-12 | 1.000 | 1.000 | 0.000 | \$0 | \$0 | \$921,236 |
| 2012-13 | 1.000 | 1.000 | 0.000 | 0 | 0 | 805,895 |
| 2013-14 | 1.000 | 1.000 | 0.000 | 0 | 0 | 1,754,364 |
| 2014-15 | 1.000 | 1.000 | 0.000 | 796 | 0 | 628,537 |
| 2015-16 | 1.007 | 1.014 | 0.969 | 51,914 | 50,305 | 1,335,116 |
| 2016-17 | 1.038 | 1.043 | 8.159 | 241,253 | 1,968,380 | 3,928,475 |
| 2017-18 | 1.075 | 1.210 | 0.674 | 1,138,674 | 767,467 | 2,890,005 |
| 2018-19 | 1.222 | 2.156 | 0.512 | 773,549 | 396,057 | 1,452,969 |
| 2019-20 | 2.037 | 7.585 | 1.417 | 657,411 | 931,551 | 2,289,743 |
| 2020-21 | 79.630 | 269.558 | 111.596 | 32,008 | 3,571,909 | 3,612,527 |
| Total | | | | \$2,895,604 | \$7,685,669 | \$19,618,868 |

Notes:

- (1) Page 35, Column (2).
- (2) Page 36, Column (2).
- (3) $[(1) - 1.000] \times (2) / [(2) - (1)]$.
- (4) Page 35, Column (1) - Page 36, Column (1).
- (5) (3) x (4), rounded.
- (6) (5) + Page 35, Column (1).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program 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 12/31/20 (5) | Estimated Ultimate Losses (6) |
|-----------------|--|--|---|---|--|--|
| 2011-12 | \$1,322,253 | 1.000 | 0.0% | \$0 | \$921,236 | \$921,236 |
| 2012-13 | 1,364,397 | 1.000 | 0.0% | 0 | 805,895 | 805,895 |
| 2013-14 | 1,408,296 | 1.000 | 0.0% | 0 | 1,754,364 | 1,754,364 |
| 2014-15 | 1,453,952 | 1.000 | 0.0% | 0 | 628,537 | 628,537 |
| 2015-16 | 1,499,607 | 1.007 | 0.7% | 10,497 | 1,284,811 | 1,295,308 |
| 2016-17 | 1,548,775 | 1.038 | 3.7% | 57,305 | 1,960,095 | 2,017,400 |
| 2017-18 | 1,597,942 | 1.075 | 7.0% | 111,856 | 2,122,538 | 2,234,394 |
| 2018-19 | 1,648,866 | 1.222 | 18.1% | 298,445 | 1,056,912 | 1,355,357 |
| 2019-20 | 1,701,545 | 2.037 | 50.9% | 866,086 | 1,358,192 | 2,224,278 |
| 2020-21 | 1,755,980 | 79.630 | 98.7% | 1,733,152 | 40,618 | 1,773,770 |
| | \$15,301,613 | | | \$3,077,341 | \$11,933,199 | \$15,010,540 |

Notes:

- (1) Page 39, Column (3).
- (2) Page 35, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 35, Column (1).
- (6) $(4) + (5)$.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | <i>A Priori</i> 2020-21 Loss (1) | Factor to Remove Trend (2) | <i>A Priori</i> Ultimate Losses (3) |
|-----------------|---|-------------------------------------|--|
| 2011-12 | \$1,755,980 | 0.753 | \$1,322,253 |
| 2012-13 | 1,755,980 | 0.777 | 1,364,397 |
| 2013-14 | 1,755,980 | 0.802 | 1,408,296 |
| 2014-15 | 1,755,980 | 0.828 | 1,453,952 |
| 2015-16 | 1,755,980 | 0.854 | 1,499,607 |
| 2016-17 | 1,755,980 | 0.882 | 1,548,775 |
| 2017-18 | 1,755,980 | 0.910 | 1,597,942 |
| 2018-19 | 1,755,980 | 0.939 | 1,648,866 |
| 2019-20 | 1,755,980 | 0.969 | 1,701,545 |
| 2020-21 | 1,755,980 | 1.000 | 1,755,980 |
| Total | | | \$15,301,613 |

Notes:

- (1) Page 40, Average of Column (3).
- (2) 1.000 / [Page 40, Column (2)].
- (3) (1) x (2).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | <i>A Priori</i> Ultimate Losses (1) | Estimated Pure Premium Trend (2) | Constant Dollar Ultimate Losses (3) |
|-----------------|--|--|---|
| 2011-12 | \$921,236 | 1.328 | \$1,223,174 |
| 2012-13 | 805,895 | 1.287 | 1,036,851 |
| 2013-14 | 1,754,364 | 1.247 | 2,187,145 |
| 2014-15 | 628,537 | 1.208 | 759,292 |
| 2015-16 | 1,284,811 | 1.171 | 1,503,965 |
| 2016-17 | 1,960,095 | 1.134 | 2,223,289 |
| 2017-18 | 2,122,538 | 1.099 | 2,332,892 |
| 2018-19 | 1,056,912 | 1.065 | 1,125,637 |
| 2019-20 | 3,305,794 | 1.032 | 3,411,579 |
| 2020-21 | 3,026,082 | 1.000 | 3,026,082 |
| Average | | | \$1,882,991 |
| 11/12-19/20 | | | \$1,755,980 |
| | | (4) A Priori 2020-21 Losses: | \$1,755,980 |

Notes:

- (1) Page 41, Column (3).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Average of (3) excluding 2020-21.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Reported Loss Projection (1) | Paid Loss Projection (2) | <i>A Priori</i> Selection (3) |
|-----------------|---------------------------------------|-----------------------------------|-------------------------------------|
| 2011-12 | \$921,236 | \$921,236 | \$921,236 |
| 2012-13 | 805,895 | 805,895 | 805,895 |
| 2013-14 | 1,754,364 | 1,754,364 | 1,754,364 |
| 2014-15 | 628,537 | 627,741 | 628,537 |
| 2015-16 | 1,293,334 | 1,249,632 | 1,284,811 |
| 2016-17 | 2,034,986 | 1,792,912 | 1,960,095 |
| 2017-18 | 2,281,900 | 1,190,334 | 2,122,538 |
| 2018-19 | 1,291,245 | 610,876 | 1,056,912 |
| 2019-20 | 2,766,155 | 5,315,628 | 3,305,794 |
| 2020-21 | 3,234,377 | 2,320,973 | 3,026,082 |
| Total | \$17,012,029 | \$16,589,591 | \$16,866,265 |

Notes:

- (1) Page 35, Column (3).
- (2) Page 36, Column (3).
- (3) Selected on the basis of (1) and (2).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Selected Claim Severity (1) | Factor to Remove Trend (2) | Selected Ultimate Claims (3) | Estimated Ultimate Losses (4) |
|-----------------|--------------------------------------|-------------------------------------|---------------------------------------|--|
| 2011-12 | \$22,600 | 0.753 | 74 | \$1,259,572 |
| 2012-13 | 22,600 | 0.777 | 69 | 1,212,048 |
| 2013-14 | 22,600 | 0.802 | 62 | 1,123,938 |
| 2014-15 | 22,600 | 0.828 | 76 | 1,421,817 |
| 2015-16 | 22,600 | 0.854 | 81 | 1,563,850 |
| 2016-17 | 22,600 | 0.882 | 102 | 2,032,309 |
| 2017-18 | 22,600 | 0.910 | 81 | 1,665,537 |
| 2018-19 | 22,600 | 0.939 | 68 | 1,442,972 |
| 2019-20 | 22,600 | 0.969 | 84 | 1,839,535 |
| 2020-21 | 22,600 | 1.000 | 77 | 1,740,200 |
| Total | | | | \$15,301,778 |

Notes:

- (1) Page 43, Item (5).
- (2) $1.000 / [\text{Page 43, Column (2)}]$.
- (3) Page 44, Column (3).
- (4) $(1) \times (2) \times (3)$.

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | <i>A Priori</i> Ultimate Losses (1) | Estimated Severity Trend (2) | Selected Claim Count (3) | Trended Claim Severity (4) |
|-----------------|--|---------------------------------------|-----------------------------------|-------------------------------------|
| 2011-12 | \$921,236 | 1.328 | 74 | \$16,529 |
| 2012-13 | 805,895 | 1.287 | 69 | 15,027 |
| 2013-14 | 1,754,364 | 1.247 | 62 | 35,277 |
| 2014-15 | 628,537 | 1.208 | 76 | 9,991 |
| 2015-16 | 1,284,811 | 1.171 | 81 | 18,567 |
| 2016-17 | 1,960,095 | 1.134 | 102 | 21,797 |
| 2017-18 | 2,122,538 | 1.099 | 81 | 28,801 |
| 2018-19 | 1,056,912 | 1.065 | 68 | 16,553 |
| 2019-20 | 3,305,794 | 1.032 | 84 | 40,614 |
| 2020-21 | 3,026,082 | 1.000 | 77 | 39,300 |
| Total | \$16,866,265 | | 774 | \$24,246 |
| 11/12-19/20 | \$13,840,183 | | 697 | \$22,573 |
| | | | (5) Selected Severity: | \$22,600 |

Notes:

- (1) Page 41, Column (3).
- (2) Estimated by BAC.
- (3) Page 44, Column (3).
- (4) $(1) \times (2) / (3)$.
- (5) Selected on the basis of (4).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Selected Claim Counts

| Program Year | Reported Claim Count Projection (1) | Bornhuetter- Ferguson Method (2) | Selected Claim Count (3) |
|-----------------|--|---|-----------------------------------|
| 2011-12 | 74 | | 74 |
| 2012-13 | 69 | | 69 |
| 2013-14 | 62 | | 62 |
| 2014-15 | 76 | | 76 |
| 2015-16 | 81 | | 81 |
| 2016-17 | 102 | | 102 |
| 2017-18 | 81 | | 81 |
| 2018-19 | 68 | | 68 |
| 2019-20 | 84 | | 84 |
| 2020-21 | 76 | 77 | 77 |
| Total | 773 | | 774 |

Notes:

- (1) Page 45, Column (3).
- (2) Page 46, 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 12/31/20 (1) | Development Factors as of 12/31/20 (2) | Projected Ultimate Claims (3) |
|------------------------|--|--|--|
| 2011-12 | 74 | 1.000 | 74 |
| 2012-13 | 69 | 1.000 | 69 |
| 2013-14 | 62 | 1.000 | 62 |
| 2014-15 | 76 | 1.000 | 76 |
| 2015-16 | 81 | 1.000 | 81 |
| 2016-17 | 102 | 1.000 | 102 |
| 2017-18 | 81 | 1.000 | 81 |
| 2018-19 | 68 | 0.998 | 68 |
| 2019-20 | 82 | 1.029 | 84 |
| 2020-21 | 22 | 3.457 | 76 |
| Average | | | 77 |
| 11/12-19/20 Average | | | 77 |

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 12/31/20 (5) | Projected Ultimate Claims (6) |
|-----------------|-----------------------------------|---------------------------------------|---|--|--|--|
| 2020-21 | 77 | 3.457 | 71.1% | 55 | 22 | 77 |

Notes:

- (1) Page 45, Column (3), average 2011-12 to 2019-20.
- (2) Page 45, Column (2).
- (3) $100\% - [1.000 / (2)]$.
- (4) $(1) \times (3)$.
- (5) Page 45, Column (1).
- (6) $(4) + (5)$.

Monterey Bay Area Self Insurance Authority

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

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

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program 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 | \$619,475 | \$619,475 | \$619,475 | \$619,475 | \$619,475 | \$619,475 |
| 2012-13 | 734,087 | 734,087 | 734,087 | 734,087 | 734,087 | 734,087 |
| 2013-14 | 1,004,364 | 1,004,364 | 1,004,364 | 1,004,364 | 1,004,364 | 1,004,364 |
| 2014-15 | 483,674 | 482,879 | 483,674 | 483,674 | 482,879 | 490,000 |
| 2015-16 | 1,181,622 | 1,137,051 | 1,181,622 | 1,181,622 | 1,133,642 | 1,190,000 |
| 2016-17 | 1,584,944 | 1,408,817 | 1,599,072 | 1,583,551 | 1,392,057 | 1,590,000 |
| 2017-18 | 1,540,857 | 1,116,504 | 1,561,112 | 1,535,463 | 1,061,716 | 1,550,000 |
| 2018-19 | 869,592 | 518,887 | 878,187 | 865,640 | 579,985 | 880,000 |
| 2019-20 | 1,615,683 | 2,794,225 | 1,493,007 | 1,313,089 | 1,018,303 | 1,480,000 |
| 2020-21 | 2,235,024 | 1,616,081 | 2,487,079 | 680,640 | 657,105 | 690,000 |
| Total | \$11,869,322 | \$11,432,370 | \$12,041,680 | \$10,001,606 | \$8,683,613 | \$10,227,926 |

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 \$10K Deductible

| Program Year | Cumulative Reported Losses as of 12/31/20 <u>(1)</u> | Reported Development Factor as of 12/31/20 <u>(2)</u> | Projected Ultimate Losses <u>(3)</u> |
|-----------------|--|--|---|
| 2011-12 | \$619,475 | 1.000 | \$619,475 |
| 2012-13 | 734,087 | 1.000 | 734,087 |
| 2013-14 | 1,004,364 | 1.000 | 1,004,364 |
| 2014-15 | 483,674 | 1.000 | 483,674 |
| 2015-16 | 1,181,622 | 1.000 | 1,181,622 |
| 2016-17 | 1,582,241 | 1.002 | 1,584,944 |
| 2017-18 | 1,531,538 | 1.006 | 1,540,857 |
| 2018-19 | 852,573 | 1.020 | 869,592 |
| 2019-20 | 1,108,192 | 1.458 | 1,615,683 |
| 2020-21 | 40,618 | 55.026 | 2,235,024 |
| Total | \$9,138,385 | | \$11,869,322 |

Notes:

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

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Cumulative Paid Losses as of 12/31/20 (1) | Paid Development Factor as of 12/31/20 (2) | Projected Ultimate Losses (3) |
|-----------------|---|---|--|
| 2011-12 | \$619,475 | 1.000 | \$619,475 |
| 2012-13 | 734,087 | 1.000 | 734,087 |
| 2013-14 | 1,004,364 | 1.000 | 1,004,364 |
| 2014-15 | 482,879 | 1.000 | 482,879 |
| 2015-16 | 1,129,709 | 1.006 | 1,137,051 |
| 2016-17 | 1,376,988 | 1.023 | 1,408,817 |
| 2017-18 | 983,864 | 1.135 | 1,116,504 |
| 2018-19 | 283,363 | 1.831 | 518,887 |
| 2019-20 | 477,348 | 5.854 | 2,794,225 |
| 2020-21 | 8,610 | 187.692 | 1,616,081 |
| Total | \$7,100,687 | | \$11,432,370 |

Notes:

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

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Reported LDF (1) | Paid LDF (2) | IBNR to Case Reserves Ratio (3) | Case Reserves as of 12/31/20 (4) | Estimated IBNR as of as of 12/31/20 (5) | Estimated Ultimate Losses (6) |
|-----------------|------------------------|--------------------|---|---|---|--|
| 2011-12 | 1.000 | 1.000 | 0.000 | \$0 | \$0 | \$619,475 |
| 2012-13 | 1.000 | 1.000 | 0.000 | 0 | 0 | 734,087 |
| 2013-14 | 1.000 | 1.000 | 0.000 | 0 | 0 | 1,004,364 |
| 2014-15 | 1.000 | 1.000 | 0.000 | 796 | 0 | 483,674 |
| 2015-16 | 1.000 | 1.006 | 0.000 | 51,914 | 0 | 1,181,622 |
| 2016-17 | 1.002 | 1.023 | 0.082 | 205,253 | 16,831 | 1,599,072 |
| 2017-18 | 1.006 | 1.135 | 0.054 | 547,674 | 29,574 | 1,561,112 |
| 2018-19 | 1.020 | 1.831 | 0.045 | 569,210 | 25,614 | 878,187 |
| 2019-20 | 1.458 | 5.854 | 0.610 | 630,844 | 384,815 | 1,493,007 |
| 2020-21 | 55.026 | 187.692 | 76.434 | 32,008 | 2,446,461 | 2,487,079 |
| Total | | | | \$2,037,698 | \$2,903,295 | \$12,041,680 |

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 \$10K 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 12/31/20 (5) | Estimated Ultimate Losses (6) |
|-----------------|--|--|---|---|--|--|
| 2011-12 | \$658,677 | 1.000 | 0.0% | \$0 | \$619,475 | \$619,475 |
| 2012-13 | 657,808 | 1.000 | 0.0% | 0 | 734,087 | 734,087 |
| 2013-14 | 657,133 | 1.000 | 0.0% | 0 | 1,004,364 | 1,004,364 |
| 2014-15 | 656,614 | 1.000 | 0.0% | 0 | 483,674 | 483,674 |
| 2015-16 | 655,448 | 1.000 | 0.0% | 0 | 1,181,622 | 1,181,622 |
| 2016-17 | 655,163 | 1.002 | 0.2% | 1,310 | 1,582,241 | 1,583,551 |
| 2017-18 | 654,219 | 1.006 | 0.6% | 3,925 | 1,531,538 | 1,535,463 |
| 2018-19 | 653,353 | 1.020 | 2.0% | 13,067 | 852,573 | 865,640 |
| 2019-20 | 652,539 | 1.458 | 31.4% | 204,897 | 1,108,192 | 1,313,089 |
| 2020-21 | 651,754 | 55.026 | 98.2% | 640,022 | 40,618 | 680,640 |
| Total | \$6,552,708 | | | \$863,221 | \$9,138,385 | \$10,001,606 |

Notes:

- (1) Page 34, 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 \$10K 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 12/31/20 (5) | Estimated Ultimate Losses (6) |
|-----------------|--|--|---|-------------------------------------|--|--|
| 2011-12 | \$658,677 | 1.000 | 0.0% | \$0 | \$619,475 | \$619,475 |
| 2012-13 | 657,808 | 1.000 | 0.0% | 0 | 734,087 | 734,087 |
| 2013-14 | 657,133 | 1.000 | 0.0% | 0 | 1,004,364 | 1,004,364 |
| 2014-15 | 656,614 | 1.000 | 0.0% | 0 | 482,879 | 482,879 |
| 2015-16 | 655,448 | 1.006 | 0.6% | 3,933 | 1,129,709 | 1,133,642 |
| 2016-17 | 655,163 | 1.023 | 2.3% | 15,069 | 1,376,988 | 1,392,057 |
| 2017-18 | 654,219 | 1.135 | 11.9% | 77,852 | 983,864 | 1,061,716 |
| 2018-19 | 653,353 | 1.831 | 45.4% | 296,622 | 283,363 | 579,985 |
| 2019-20 | 652,539 | 5.854 | 82.9% | 540,955 | 477,348 | 1,018,303 |
| 2020-21 | 651,754 | 187.692 | 99.5% | 648,495 | 8,610 | 657,105 |
| Total | \$6,552,708 | | | \$1,582,926 | \$7,100,687 | \$8,683,613 |

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 2021-22 *
All Gross of \$10K 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) |
|--------------|-----------------------------|-------------------------------|--|
| 2021-22 | \$1.78 | 1.647 | \$2.93 |

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) |
|--------------|------------------------------|-------------------------------|--|
| 2021-22 | \$2.63 | 1.000 | \$2.63 |

| Program Year | Selected 2021-22 1M/500K SIR Loss Rate (7) | Projected 2021-22 Payroll (\$00's) (8) | Projected Ultimate Losses (9) |
|--------------|---|---|----------------------------------|
| 2021-22 | \$2.78 | \$675,086 | \$1,875,387 |

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

Notes:

- | | |
|-------------------------|--------------------------|
| (1) Page 56, Item (5). | (5) Estimated by BAC. |
| (2) Estimated by BAC. | (6) (4) x (5), rounded. |
| (3) (1) x (2), rounded. | (7) Selected by BAC. |
| (4) Page 57, Item (5). | (8) Page 69, Column (2). |
| | (9) (7) x (8), rounded. |

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

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

| Program Year | Estimated Ultimate Losses (1) | Trend Factor (2) | Losses Trended to 2021-22 (3) |
|--------------|----------------------------------|---------------------|----------------------------------|
| 2011-12 | \$619,475 | 1.255 | \$777,643 |
| 2012-13 | 734,087 | 1.227 | 900,800 |
| 2013-14 | 1,004,364 | 1.200 | 1,204,748 |
| 2014-15 | 490,000 | 1.173 | 574,547 |
| 2015-16 | 1,190,000 | 1.146 | 1,363,957 |
| 2016-17 | 1,590,000 | 1.120 | 1,781,457 |
| 2017-18 | 1,550,000 | 1.095 | 1,697,596 |
| 2018-19 | 880,000 | 1.071 | 942,127 |
| 2019-20 | 1,480,000 | 1.047 | 1,548,863 |
| 2020-21 | 690,000 | 1.023 | 705,870 |

Average 11-12 through 19-20: \$1,199,082

(4) Projected 2021-22 Payroll (\$00's): \$675,086

(5) Projected 2021-22 \$250K Limit Rate: \$1.78

Notes:

- (1) Page 48, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 69, Column (2).
- (5) Average (3) / (4).

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Estimated Ultimate Losses (1) | Trend Factor (2) | Losses Trended to 2021-22 (3) |
|-----------------|--|---|--|
| 2011-12 | \$921,236 | 1.370 | \$1,262,315 |
| 2012-13 | 805,895 | 1.328 | 1,070,029 |
| 2013-14 | 1,754,364 | 1.287 | 2,257,134 |
| 2014-15 | 630,000 | 1.247 | 785,414 |
| 2015-16 | 1,300,000 | 1.208 | 1,570,441 |
| 2016-17 | 2,030,000 | 1.171 | 2,376,263 |
| 2017-18 | 2,260,000 | 1.134 | 2,563,464 |
| 2018-19 | 1,370,000 | 1.099 | 1,505,774 |
| 2019-20 | 2,430,000 | 1.065 | 2,588,008 |
| 2020-21 | 1,780,000 | 1.032 | 1,836,960 |
| | | Average 11-12 through 19-20: | \$1,775,427 |
| | | (4) Projected 2021-22 Payroll (\$00's): | \$675,086 |
| | | (5) Projected 2021-22 \$1M Limit Rate: | \$2.63 |

Notes:

- (1) Page 34, Column (6).
- (2) Estimated by BAC.
- (3) (1) x (2).
- (4) Page 69, Column (2).
- (5) (3) / (4).

Monterey Bay Area Self Insurance Authority

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

Discounting Exhibits

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Discounted Value of Unpaid Losses as of June 30, 2021
Assuming a 0.5% Interest Rate

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

| Program Year | Projected Unpaid Losses (1) | Discount Factor (2) | Discounted Unpaid Losses (3) |
|-----------------|--------------------------------------|---------------------------|---------------------------------------|
| 2011-12 | \$0 | 1.000 | \$0 |
| 2012-13 | 0 | 1.000 | 0 |
| 2013-14 | 0 | 1.000 | 0 |
| 2014-15 | 1,128 | 0.998 | 1,126 |
| 2015-16 | 35,507 | 0.997 | 35,406 |
| 2016-17 | 204,806 | 0.996 | 203,994 |
| 2017-18 | 762,740 | 0.995 | 759,302 |
| 2018-19 | 1,015,798 | 0.993 | 1,008,474 |
| 2019-20 | 1,571,957 | 0.990 | 1,556,565 |
| 2020-21 | 1,414,458 | 0.987 | 1,396,340 |
| Total | \$5,006,393 | | \$4,961,207 |

(4) Indicated Discount Factor: 0.991

Notes:

- (1) Page 25, Column (6).
- (2) (3) / (1).
- (3) Based upon a 0.5% interest rate.
- (4) [Sum of Column (3)] / [Sum of Column (1)].

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Discounted Value of 2021-22 Losses as of July 1, 2021
Assuming a 0.5% Interest Rate

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

| Program Year | Projected Loss Payments (1) | Discounted Value Factor (2) | Discounted Value of Payments (3) |
|-----------------|--------------------------------------|--------------------------------------|---|
| 2021-22 | \$293,740 | 0.998 | \$293,008 |
| 2022-23 | 317,261 | 0.993 | 314,896 |
| 2023-24 | 315,287 | 0.988 | 311,380 |
| 2024-25 | 315,287 | 0.983 | 309,831 |
| 2025-26 | 444,104 | 0.978 | 434,248 |
| 2026-27 | 138,486 | 0.973 | 134,739 |
| 2027-28 | 47,864 | 0.968 | 46,337 |
| 2028-29 | 3,359 | 0.963 | 3,236 |
| 2029-30 | 0 | 0.958 | 0 |
| 2030-31 | 0 | 0.954 | 0 |
| 2031-32 | 0 | 0.949 | 0 |
| Total | \$1,875,387 | | \$1,847,675 |

(4) Indicated Discount Factor: 0.985

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 0.5% interest rate.
- (3) (1) x (2).
- (4) [Sum of Column (3)] / [Sum of Column (1)].

Monterey Bay Area Self Insurance Authority
 General and Auto Liability Program

Discounted Value of 2021-22 Losses as of July 1, 2021
 Assuming a 0.5% Interest Rate

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

| Program Year | Projected Loss Payments (1) | Discount Factor (2) | Discounted Value of Payments (3) |
|--------------|--------------------------------|------------------------|-------------------------------------|
| 2021-22 | \$237,834 | 0.998 | \$237,241 |
| 2022-23 | 222,990 | 0.993 | 221,328 |
| 2023-24 | 294,177 | 0.988 | 290,531 |
| 2024-25 | 294,177 | 0.983 | 289,086 |
| 2025-26 | 423,442 | 0.978 | 414,045 |
| 2026-27 | 139,737 | 0.973 | 135,956 |
| 2027-28 | 49,828 | 0.968 | 48,239 |
| 2028-29 | 3,869 | 0.963 | 3,727 |
| 2029-30 | 0 | 0.958 | 0 |
| 2030-31 | 0 | 0.954 | 0 |
| 2031-32 | 0 | 0.949 | 0 |
| Total | \$1,666,054 | | \$1,640,153 |

(4) Indicated Discount Factor: 0.984

Notes:

- (1) Based upon the observed payment pattern.
- (2) Based upon a 0.5% interest rate.
- (3) (1) x (2).
- (4) [Sum of Column (3)] / [Sum of Column (1)].

Monterey Bay Area Self Insurance Authority

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

Deductibles

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

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

| Program Year | Reported Projection (1) | B-F Method Using Reported (2) | Selected Ultimate Losses (3) |
|-----------------|-------------------------------|---|---------------------------------------|
| 2011-12 | \$152,855 | \$152,855 | \$152,855 |
| 2012-13 | 133,330 | 133,330 | 133,330 |
| 2013-14 | 156,869 | 156,869 | 156,869 |
| 2014-15 | 144,164 | 144,164 | 144,164 |
| 2015-16 | 198,352 | 198,348 | 198,348 |
| 2016-17 | 265,295 | 265,329 | 266,000 |
| 2017-18 | 199,616 | 199,580 | 200,000 |
| 2018-19 | 146,082 | 145,957 | 147,000 |
| 2019-20 | 258,756 | 253,387 | 257,000 |
| 2020-21 | 781,828 | 125,170 | 130,000 |
| Total | \$2,437,147 | \$1,774,988 | \$1,785,565 |

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 12/31/20 (1) | Reported Development Factor as of 12/31/20 (2) | Projected Ultimate Losses (3) |
|-----------------|---|---|--|
| 2011-12 | \$152,855 | 1.000 | \$152,855 |
| 2012-13 | 133,330 | 1.000 | 133,330 |
| 2013-14 | 156,869 | 1.000 | 156,869 |
| 2014-15 | 144,164 | 1.000 | 144,164 |
| 2015-16 | 198,348 | 1.000 | 198,352 |
| 2016-17 | 265,070 | 1.001 | 265,295 |
| 2017-18 | 199,333 | 1.001 | 199,616 |
| 2018-19 | 143,896 | 1.015 | 146,082 |
| 2019-20 | 216,040 | 1.198 | 258,756 |
| 2020-21 | 25,118 | 31.126 | 781,828 |
| Total | \$1,635,022 | | \$2,437,147 |

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 12/31/20 (5) | Estimated Ultimate Deductible Losses (6) |
|-----------------|--|--|---|---|---|--|
| 2011-12 | \$111,840 | 1.000 | 0.0% | \$0 | \$152,855 | \$152,855 |
| 2012-13 | 129,812 | 1.000 | 0.0% | 0 | 133,330 | 133,330 |
| 2013-14 | 173,960 | 1.000 | 0.0% | 0 | 156,869 | 156,869 |
| 2014-15 | 83,128 | 1.000 | 0.0% | 0 | 144,164 | 144,164 |
| 2015-16 | 197,738 | 1.000 | 0.0% | 0 | 198,348 | 198,348 |
| 2016-17 | 258,781 | 1.001 | 0.1% | 259 | 265,070 | 265,329 |
| 2017-18 | 247,092 | 1.001 | 0.1% | 247 | 199,333 | 199,580 |
| 2018-19 | 137,405 | 1.015 | 1.5% | 2,061 | 143,896 | 145,957 |
| 2019-20 | 226,346 | 1.198 | 16.5% | 37,347 | 216,040 | 253,387 |
| 2020-21 | 103,360 | 31.126 | 96.8% | 100,052 | 25,118 | 125,170 |
| Total | \$1,669,461 | | | \$139,966 | \$1,635,022 | \$1,774,988 |

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

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

Claims Data Exhibits

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Cumulative Reported Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/20

| 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 | |
| 2013 | 55 | 343 | 454 | 777 | 703 | 934 | 796 | 796 | 806 | | |
| 2014 | 7 | 1,443 | 1,714 | 2,384 | 2,359 | 2,359 | 1,684 | 2,402 | | | |
| 2015 | 13 | 534 | 685 | 589 | 589 | 589 | 629 | | | | |
| 2016 | 55 | 828 | 1,339 | 1,160 | 1,185 | 1,285 | | | | | |
| 2017 | 13 | 1,619 | 2,544 | 1,764 | 1,960 | | | | | | |
| 2018 | 277 | 1,500 | 1,522 | 2,123 | | | | | | | |
| 2019 | 102 | 380 | 1,057 | | | | | | | | |
| 2020 | 232 | 1,381 | | | | | | | | | |
| 2021 | 41 | | | | | | | | | | |
| | <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 | 9.688 | 1.552 | 1.064 | 0.961 | 1.040 | 0.903 | 1.087 | 1.002 | 1.003 | 1.000 | |
| AVG | 39.098 | 1.667 | 1.136 | 0.959 | 1.046 | 0.951 | 1.047 | 1.002 | 1.003 | 1.000 | |
| REFERENCE | 3.515 | 1.496 | 1.092 | 1.036 | 1.017 | 1.007 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| SELECT | 39.098 | 1.667 | 1.136 | 1.036 | 1.031 | 1.007 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| CUMULATIVE | 79.630 | 2.037 | 1.222 | 1.075 | 1.038 | 1.007 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Cumulative Paid Losses (\$000's) - Limited to \$1M per Loss - Includes ALAE - 12/31/20

| 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 | |
| 2013 | 3 | 124 | 373 | 702 | 703 | 716 | 796 | 796 | 806 | | |
| 2014 | 4 | 478 | 935 | 2,311 | 2,324 | 2,329 | 1,684 | 2,402 | | | |
| 2015 | 10 | 56 | 510 | 589 | 589 | 589 | 628 | | | | |
| 2016 | 13 | 142 | 575 | 1,072 | 1,134 | 1,233 | | | | | |
| 2017 | 7 | 309 | 966 | 1,608 | 1,719 | | | | | | |
| 2018 | 21 | 243 | 679 | 984 | | | | | | | |
| 2019 | 15 | 75 | 283 | | | | | | | | |
| 2020 | 7 | 701 | | | | | | | | | |
| 2021 | 9 | | | | | | | | | | |
| | <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 | 22.547 | 2.950 | 1.855 | 1.097 | 1.019 | 0.955 | 1.087 | 1.002 | 1.003 | 1.000 | |
| AVG | 35.537 | 3.519 | 1.782 | 1.160 | 1.029 | 1.014 | 1.047 | 1.002 | 1.003 | 1.000 | |
| REFERENCE | 9.585 | 2.802 | 1.515 | 1.172 | 1.037 | 1.040 | 1.036 | 1.019 | 1.004 | 1.000 | 1.000 |
| SELECT | 35.537 | 3.519 | 1.782 | 1.160 | 1.029 | 1.014 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| CUMULATIVE | 269.558 | 7.585 | 2.156 | 1.210 | 1.043 | 1.014 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Monterey Bay Area Self Insurance Authority
General and Auto Liability Program

Program Information
Program Years run July 1 to June 30

| Program Year | Self-Insured Retention (SIR) * (1) | Payroll (\$00's) (2) | Exposure Index (3) | Deductible (4) |
|-----------------|---|----------------------------|--------------------------|-------------------|
| 2011-12 | \$1,000,000 | \$454,479 | 1.000 | \$10,000 |
| 2012-13 | 1,000,000 | 422,491 | 1.000 | 10,000 |
| 2013-14 | 1,000,000 | 436,959 | 1.000 | 10,000 |
| 2014-15 | 1,000,000 | 455,957 | 1.000 | 10,000 |
| 2015-16 | 1,000,000 | 472,388 | 1.000 | 10,000 |
| 2016-17 | 1,000,000 | 518,291 | 1.000 | 10,000 |
| 2017-18 | 1,000,000 | 545,055 | 1.000 | 10,000 |
| 2018-19 | 1,000,000 | 590,304 | 1.000 | 10,000 |
| 2019-20 | 1,000,000 | 622,825 | 1.000 | 10,000 |
| 2020-21 | 1,000,000 | 648,429 | 1.000 | 10,000 |
| 2021-22 | ? | 675,086 | 1.000 | 10,000 |

Notes:

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