



Bickmore

Actuarial

Actuarial Review of the Self-Insured Workers' Compensation Program

Outstanding Liabilities as of June 30, 2019

Presented to
Novato Fire Protection District

July 10, 2019





Wednesday, July 10, 2019

Joe Valenti
Finance Director
Novato Fire Protection District
95 Rowland Way
Novato, California 94945

Re: Actuarial Review of the Self-Insured Workers' Compensation Program

Dear Mr. Valenti:

As you requested, we have completed our review of Novato Fire Protection District's self-insured workers' compensation program. It is our understanding that, effective July 1, 2014, Novato Fire Protection District joined the Fire Agencies Self Insurance System. The report that follows is an estimate of the program's liability for outstanding claims with dates of loss prior to July 1, 2014. We estimate the program's liability for outstanding claims as of June 30, 2019 to be \$1,193,000, which includes allocated loss adjustment expenses (ALAE), unallocated loss adjustment expenses (ULAE) and a discount for anticipated investment income. ALAE is the direct cost associated with the defense of individual claims (e.g. legal fees, investigation fees, court charges). ULAE is the cost to administer all claims to final settlement, which may be years into the future (e.g. claims adjusters' salaries, taxes). The discount for investment income is calculated based on the likely payout pattern of the District's claims, assuming a 2.5% return on investments per year.

The \$1,193,000 estimate is the minimum liability to be booked by the District at June 30, 2019 for its workers' compensation program, in accordance with Governmental Accounting Standards Board (GASB) Statement #10. GASB #10 requires the District to accrue a liability on its financial statements for the ultimate cost of claims and expenses associated with all reported and unreported claims, including ALAE and ULAE. GASB #10 does not prohibit the discounting of losses to recognize investment income.

Our conclusions regarding the District's liability for unpaid loss and loss adjustment expenses (LAE) at June 30, 2019 are summarized in the table below.

Novato Fire Protection District
 Self-Insured Workers' Compensation Program
 Estimated Liability for Unpaid Loss and LAE
 at June 30, 2019
 Claims with Dates of Loss Prior to July 1, 2014

	Expected	Marginally Acceptable 70% CL	Recommended Range			Conservative 90% CL
			Low 75% CL	Target 80% CL	High 85% CL	
Loss and ALAE	\$1,302,000					
ULAE	102,000					
Investment Income Offset	(211,000)					
Discounted Loss and LAE	\$1,193,000	\$1,386,000	\$1,477,000	\$1,585,000	\$1,720,000	\$1,899,000

GASB #10 does not address an actual asset requirement for the program, but only speaks to the liability to be recorded on the District's financial statements.

Because actuarial estimates of claims costs are subject to some uncertainty, we recommend that an amount in addition to the discounted expected loss costs be set aside as a risk margin for contingencies. Generally, the amount should be sufficient to fund assets to the 75% to 85% confidence level for primary programs. We consider funding assets to the 70% confidence level to be marginally acceptable and funding assets to the 90% confidence level to be conservative.

The loss projections in this report reflect the estimated impact of benefit legislation contained in AB749, AB227, SB228, SB899, SB863, and recent WCAB court decisions based upon information provided by the WCIRB.

The ultimate impact on loss costs of legislated benefit adjustments are generally difficult to forecast in advance because the changes typically take place over a period of several years following enactment. Furthermore, actuarially derived benefit level evaluations often underestimate actual future cost levels. The shortfalls result from a variety of circumstances, including: increases in utilization levels, unanticipated changes in administrative procedures, and cost shifting among benefit categories. Thus, actual cost increases could differ, perhaps substantially, from the WCIRB's estimates.

The report that follows outlines the scope of our study, its background, and our conclusions, recommendations, and assumptions. Judgments regarding the appropriateness of our conclusions and recommendations should be made only after studying the report in its entirety, including the graphs, attachments, exhibits and appendices. Our report has been developed for the District's internal use. It is not intended for general circulation.

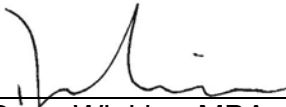
We appreciate the opportunity to be of service to Novato Fire Protection District in preparing this report. Please feel free to call Becky Richard at (916) 244-1183 or Dana Winkler at (503) 419-0455 with any questions you may have concerning this report.

Sincerely,

Bickmore Actuarial



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I. BACKGROUND

Novato Fire Protection District began its self-insured workers' compensation program on July 1, 1987. It is our understanding that, effective July 1, 2014, the District joined the Fire Agencies Self Insurance System and the self-insured workers' compensation program is now in run-off. Claims administration services are provided by Athens. Additional background on the program is given in Appendix K.

The purpose of this review is to provide a guide to the District to determine reasonable funding levels for its self-insurance program according to the funding policy the District has adopted and to comply with Governmental Accounting Standards Board Statements #10 and #30. The specific objectives of the study are to estimate the District's liability for outstanding claims as of June 30, 2019.

II. CONCLUSIONS AND RECOMMENDATIONS

A. LIABILITY FOR OUTSTANDING CLAIMS

Graph 1 on the following page summarizes our assessment of the District's funding position as of June 30, 2019. The dark-colored bars indicate our estimates of the program's liability for outstanding claims before recognition of the investment income that can be earned on the assets held before the claim payments come due.

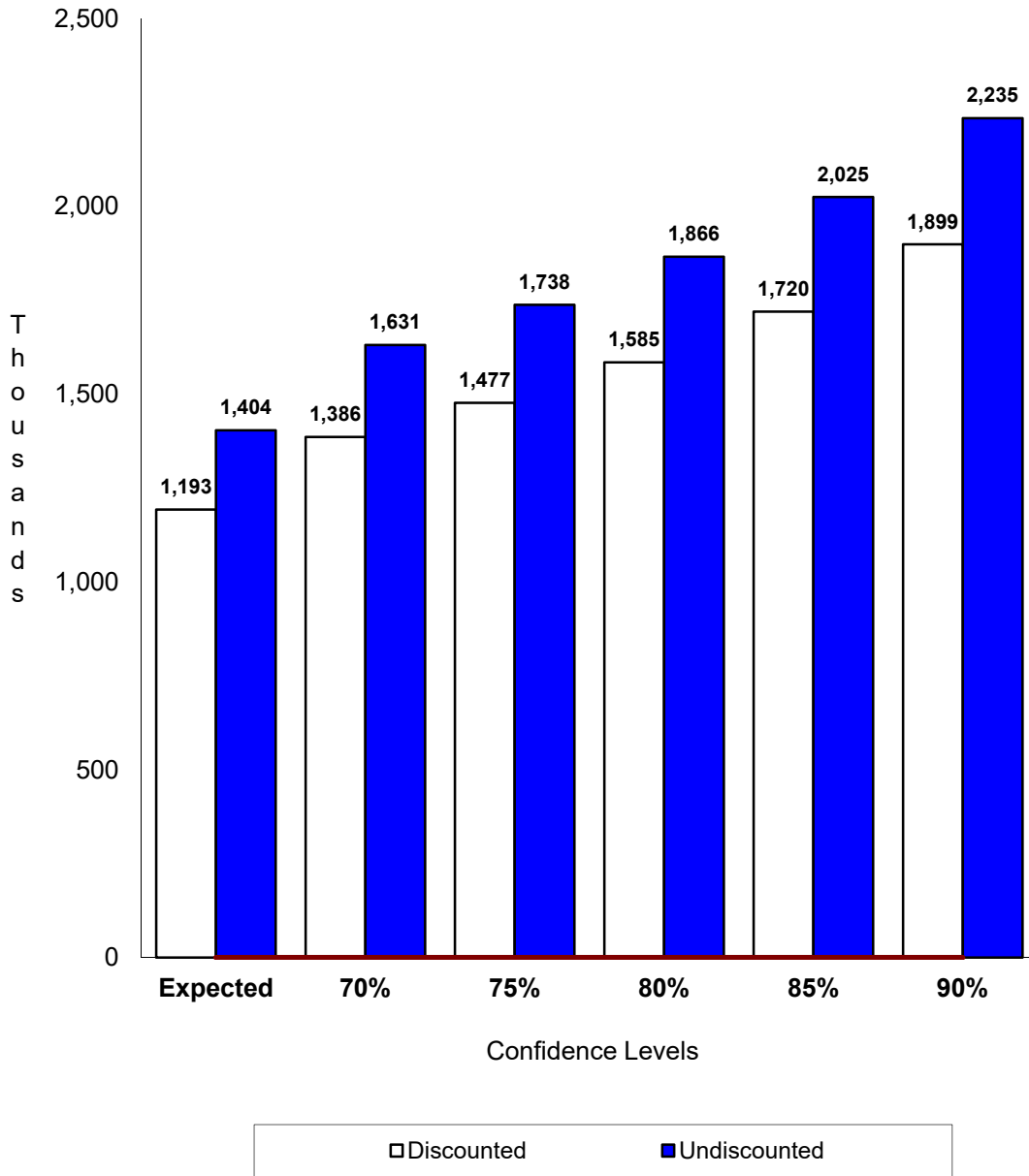
Our best estimate of the full value of the District's liability for outstanding claims within its self-insured retention (SIR) for the losses with the occurrence date prior to July 1, 2014 is \$1,404,000 as of June 30, 2019. This amount includes losses, allocated loss adjustment expenses (ALAE), and unallocated loss adjustment expenses (ULAE). ALAE is the direct cost associated with the defense of individual claims (e.g. legal fees, investigation fees, court charges). ULAE is the cost to administer claims to final settlement, which may be years in the future (e.g. claims adjusters' salaries, taxes).

There is some measure of uncertainty associated with our best estimate because of the random nature of much of the process that determines ultimate claims costs. For this reason, we generally recommend that a program such as this include some funding margin for the possibility that actual loss costs will be greater than the best estimate. We generally measure the amount of this margin by thinking in terms of the probability distribution of actual possible results around our best estimate. As the margin grows, the probability that the corresponding funding amount will be sufficient to meet actual claim liabilities increases. We typically refer to this probability as the "confidence level" of funding. Graph 1 shows the liabilities for outstanding claims at several confidence levels that are typically of interest to risk managers in formulating funding policies for self-insurance programs.

The District can earn investment income on the assets it holds until claims payments come due. Assuming a long-term average annual return on investments of 2.5%, we estimate the impact of investment income earnings to be about 15% if the program is funded within the range indicated in the graphs, resulting in a discounted liability for outstanding claims of \$1,193,000 as of June 30, 2019.

Investment income earnings will be less than this when the program does not maintain sufficient funding, and more when there is excess funding. Thus, thinking in terms of liabilities discounted for investment income can actually mask funding deficiencies and redundancies that might otherwise be obvious. However, the discounted liabilities do represent legitimate funding targets. The light-colored bars on Graph 1 shows our estimates of the District's discounted liability for outstanding claims.

Novato Fire Protection District -
Workers' Compensation
Outstanding Liability (\$000's)
at June 30, 2019



The table below displays a breakdown of the program's outstanding loss and LAE liabilities into case reserves and incurred but not reported (IBNR) reserves at June 30, 2019, before recognition of investment income.

Novato Fire Protection District
Self-Insured Workers' Compensation Program
Estimated Liability for Unpaid Loss and LAE at June 30, 2019

Year	Case Reserves	IBNR Reserves	Total Outstanding
Prior	\$69,874	\$9,701	\$79,575
1999-00	24,755	3,705	28,460
2000-01	7,985	1,645	9,630
2001-02	6,399	1,213	7,612
2002-03	14,696	3,909	18,605
2003-04	0	0	0
2004-05	42,456	18,068	60,524
2005-06	9,793	5,467	15,260
2006-07	0	0	0
2007-08	0	0	0
2008-09	133,553	67,935	201,488
2009-10	35,318	86,824	122,142
2010-11	61,509	91,994	153,503
2011-12	42,802	142,247	185,049
2012-13	82,912	86,058	168,970
2013-14	24,996	226,092	251,088
Loss and ALAE	\$557,048	\$744,858	\$1,301,906
ULAE		101,583	101,583
Total	\$557,048	\$846,441	\$1,403,489

B. PROGRAM FUNDING: GOALS AND OBJECTIVES

As self-insurance programs have proliferated among public entities, it has become apparent that there is a large measure of inconsistency in the way in which these programs recognize and account for their claims costs. This is the result of the fact that there have been several different sources of guidance available, none of which has been completely relevant to public entity self-insurance programs.

According to the Governmental Accounting Standards Board (GASB), the most relevant source of guidance on the subject is Financial Accounting Standards Board Statement #60. A liability for unpaid claim costs, including all loss adjustment expenses, should be accrued at the time the self-insured events occur. This liability should include an allowance for incurred but not reported claims. It may be discounted for investment income at an appropriate rate of return, provided the discounting is disclosed. The regulations detailing the way in which this must be done are outlined in GASB's statements #10 and #30. These regulations are required to be applied by the District.

GASB #10 and #30 do not address asset requirements. They do, however, allow a range of amounts to be recognized for accounting purposes; specifically, GASB #10 and #30 allow recognition of a risk margin for unexpectedly adverse loss experience. Thus, for accounting purposes, it is possible to formulate a funding policy from a range of alternatives. The uncertainty in any estimate of the program's liability for outstanding claims should be taken into consideration in determining funding policy, but it may be offset by recognizing anticipated investment income earnings. This usually means developing a funding program based on discounted claims costs with some risk margin for unexpected adverse loss experience.

The amount of the risk margin should be a question of long-term funding policy. We recommend that the risk margin be determined by thinking in terms of the probability that a given level of assets will prove to be adequate. For example, a reasonable goal might be to maintain assets at the 85% confidence level.

A key factor to consider in determining funding policy is the degree to which stability is required in the level of contributions to the program from year to year. If you elect to maintain assets at a low confidence level, the chances are much greater that future events will prove that additional contributions should have been made for old claims. The additional contributions for old claims may be required at the same time that costs are increasing dramatically on new claims. The burden of funding for increases on past years as well as on current years, may well be prohibitive.

We generally recommend maintaining program assets at the 80% confidence level, after recognition of investment income, with a recommended range of the 75% to 85% confidence levels. We tend to think of the 70% confidence level as marginally acceptable and of the 90% confidence level as conservative. We recommend the 75% to 85% confidence level range because the probabilities are reasonably high that resulting assets will be sufficient to meet claim liabilities, yet the required risk margins are not so large that they will cause most self-insured entities to experience undue financial hardship. In addition, within this range, anticipated investment income generally offsets the required risk margin for the most part, which means that assets are likely sufficient on an undiscounted basis.

We also strongly believe, however, that the confidence level to which any future year is funded should be evaluated in light of the relative certainty of the assumptions underlying the actuarial analysis, the District's other budgetary constraints, and the relative level of risk it is believed appropriate to assume. This means formulating both short and long-term funding goals, which may be the same in some years, but different in others.

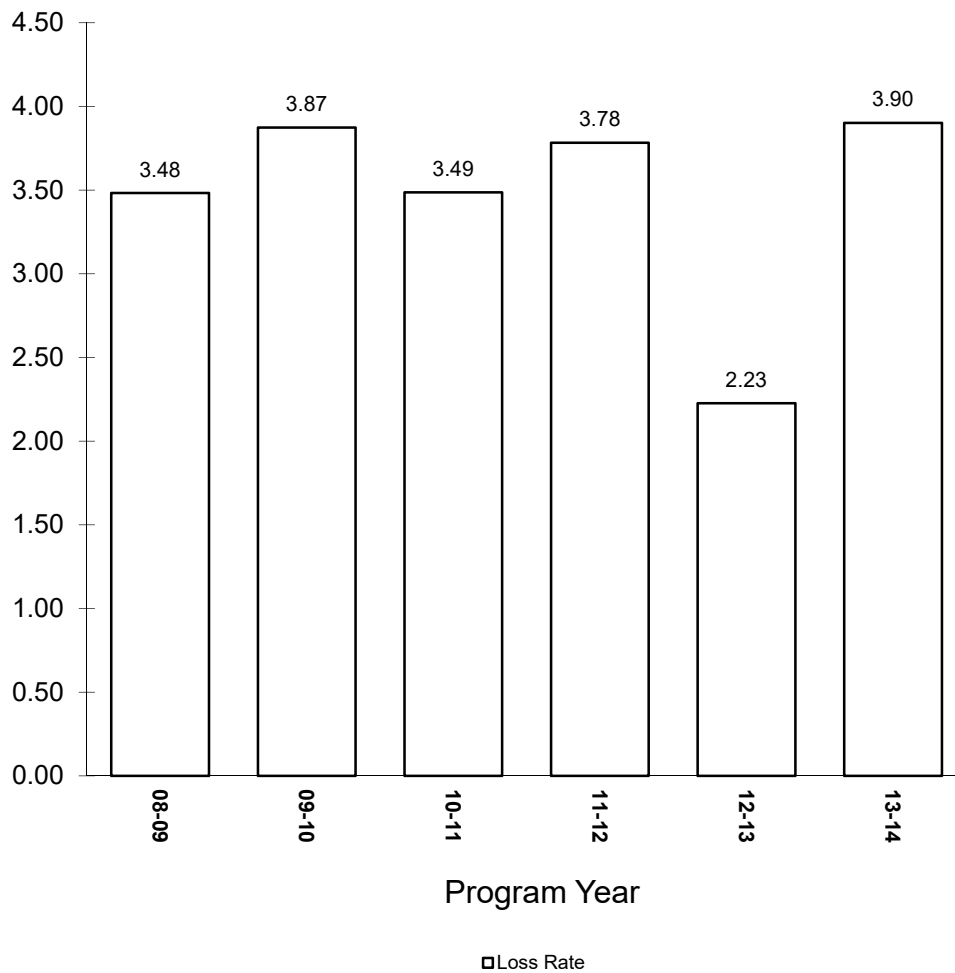
In general, we recommend that you fund each year's claims costs in that year. When surpluses or deficits have developed on outstanding liabilities and funding adjustments are necessary, they should be clearly identified as such so that the habit of funding each year's claims costs that year is maintained. We also recommend that you reduce a surplus more slowly than you would accumulate funding to reduce a deficit.

C. HISTORICAL TRENDS IN THE SELF-INSURANCE PROGRAM

The loss rate (based on losses limited to \$100,000 per occurrence) has remained stable during the 2008-09 through 2011-12 years, decreased in the 2012-13 year, and increased again in the 2013-14 year. See graph below.

Graph 2

Novato Fire Protection District -
Workers' Compensation
Dollars of Loss per
\$100 of Payroll



D. COMPARISON WITH PREVIOUS RESULTS

The prior report for Novato Fire Protection District was dated July 24, 2018. In the table below we display actual versus expected development of incurred losses and ALAE by accident year between the 6/30/18 evaluation date of the prior report and the 6/30/19 evaluation date of the current report.

Actual Versus Expected Incurred Loss and ALAE Development

Accident Year	Expected Incurred Development	Actual Incurred Development	Actual Minus Expected
Prior	\$2,000	(\$1,000)	(\$3,000)
1999-00	1,000	0	(1,000)
2000-01	1,000	3,000	2,000
2001-02	1,000	0	(1,000)
2002-03	2,000	0	(2,000)
2003-04	4,000	22,000	18,000
2004-05	4,000	0	(4,000)
2005-06	1,000	0	(1,000)
2006-07	0	0	0
2007-08	0	0	0
2008-09	15,000	(2,000)	(17,000)
2009-10	21,000	(22,000)	(43,000)
2010-11	21,000	0	(21,000)
2011-12	33,000	10,000	(23,000)
2012-13	18,000	16,000	(2,000)
2013-14	45,000	(44,000)	(89,000)
Total	\$169,000	(\$18,000)	(\$187,000)

As shown, actual incurred development was less than anticipated since the prior report. Based on the assumptions from the prior report, it was expected that incurred losses would increase by \$169,000 between the two evaluation dates. However, actual development was approximately (\$18,000); or about \$187,000 less than expected. All years developed less than expected.

In the table below we display actual versus expected development of paid losses and ALAE by accident year between the 6/30/18 evaluation date of the prior report and the 6/30/19 evaluation date of the current report.

Actual Versus Expected Paid Loss and ALAE Development

Accident Year	Expected Paid Development	Actual Paid Development	Actual Minus Expected
Prior	\$14,000	\$3,000	(\$11,000)
1999-00	4,000	1,000	(3,000)
2000-01	1,000	4,000	3,000
2001-02	1,000	2,000	1,000
2002-03	6,000	0	(6,000)
2003-04	4,000	55,000	51,000
2004-05	6,000	2,000	(4,000)
2005-06	1,000	0	(1,000)
2006-07	0	0	0
2007-08	0	0	0
2008-09	21,000	4,000	(17,000)
2009-10	19,000	3,000	(16,000)
2010-11	26,000	7,000	(19,000)
2011-12	40,000	15,000	(25,000)
2012-13	25,000	2,000	(23,000)
2013-14	48,000	0	(48,000)
Total	\$216,000	\$98,000	(\$118,000)

As shown, actual paid development was less than anticipated since the prior report. Based on the assumptions from the prior report, it was expected that paid losses would increase by \$216,000 between the two evaluation dates. However, actual development was approximately \$98,000; or about \$118,000 less than expected.

In the table below we display the change in our estimates of the program's ultimate losses and ALAE by accident year since our prior report.

Change in Ultimate Loss and ALAE

Accident Year	Prior Report	Current Report	Change In Ultimate
Prior	\$4,325,000	\$4,323,000	(\$2,000)
1999-00	440,000	439,000	(1,000)
2000-01	559,000	562,000	3,000
2001-02	1,065,000	1,064,000	(1,000)
2002-03	182,000	181,000	(1,000)
2003-04	1,997,000	2,004,000	7,000
2004-05	222,000	217,000	(5,000)
2005-06	264,000	263,000	(1,000)
2006-07	493,000	493,000	0
2007-08	92,000	92,000	0
2008-09	689,000	668,000	(21,000)
2009-10	788,000	710,000	(78,000)
2010-11	678,000	632,000	(46,000)
2011-12	771,000	712,000	(59,000)
2012-13	397,000	376,000	(21,000)
2013-14	763,000	662,000	(101,000)
Total	\$13,725,000	\$13,398,000	(\$327,000)

As shown, overall we have decreased our estimated ultimates by \$327,000 since our prior report. These changes track well with the changes in the tables above.

At the time of the prior report, we estimated the liability for outstanding claims as of June 30, 2018 to be \$1,574,000 at the discounted, expected level. Our current estimate as of June 30, 2019, is \$1,193,000, a decrease in our assessment of the District's outstanding liabilities, as shown below:

Outstanding Claim Liabilities for Loss and LAE

	Prior Report at June 30, 2018	Current Report at June 30, 2019	Change
(A) Case Reserves:	\$672,000	\$557,000	(\$115,000)
(B) IBNR Reserves:	1,055,000	745,000	(310,000)
(C) Claims Administration Reserves:	136,000	102,000	(34,000)
(D) Total Reserves:	\$1,863,000	\$1,404,000	(\$459,000)
(E) Offset for Investment Income:	(289,000)	(211,000)	78,000
(F) Total Outstanding Claim Liabilities:	\$1,574,000	\$1,193,000	(\$381,000)

As shown, our estimate of outstanding claims liabilities at the discounted, expected level has decreased between June 30, 2018 and June 30, 2019 as reflected in our prior and current reports respectively.

The decrease in claim reserves (case and IBNR) is driven primarily by the paying down of claims that are in runoff. Reserves for future claims administration expenses have decreased, resulting in a \$459,000 decrease in total claim reserves. This decrease in reserves leads to a smaller offset for investment income. The net change due to the above factors is an overall decrease of \$381,000 in our estimate of outstanding claim liabilities for loss and LAE.

E. DATA PROVIDED FOR THE ANALYSIS

Overall, the data utilized in preparing this report appears to be accurate.

Comments and issues regarding the data are as follows:

- We estimated ULAE at 7.5% of outstanding loss as of June 30, 2019.
- We received loss data evaluated as of 6/30/19 (See Appendix L). We also utilized the data from the District's most recent actuarial study for our assessment of loss development.

The data provided for the analysis appears to be reasonable for use in this actuarial valuation of liabilities and projection of loss costs.

III. ASSUMPTIONS AND LIMITATIONS

Any quantitative analysis is developed within a very specific framework of assumptions about conditions in the outside world, and actuarial analysis is no exception. We believe that it is important to review the assumptions we have made in developing the estimates presented in this report. By doing so, we hope you will gain additional perspective on the nature of the uncertainties involved in maintaining a self-insurance program. Our assumptions, and some observations about them, are as follows:

- Our analysis is based on loss experience, exposure data, and other general and specific information provided to us by the District. We have accepted all of this information without audit.
- We have also made use of loss statistics that have been developed from the information gathered and compiled from other public entities workers' compensation program.
- We have assumed that the future development of incurred and paid losses can be reasonably predicted on the basis of development of such losses in the recent past. We have also assumed that the historical development patterns for other California public entities workers' compensation program in the aggregate form a reasonable basis of comparison to the patterns from Novato Fire Protection District's data.
- We have made use of cost relationships for claims of various sizes derived from the most recent actuarial review of other California public entities workers' compensation program.
- We have assumed that there is a continuing relationship between past and future loss costs.
- It is not possible to predict future claim costs precisely. Most of the costs of workers' compensation claims arise from a small number of incidents involving serious injury. A relatively small number of such claims could generate enough loss dollars to significantly reduce, or even deplete, the self-insurance fund.
- We cannot predict and have not attempted to predict the impact of future law changes and court rulings on claims costs. This is one major reason why we believe our funding recommendations are reasonable now, but should not be extrapolated into the future.
- The changes in cost levels associated with benefit increases and administrative changes typically take place over a period of several years following their enactment, and these changes are very difficult to forecast in advance. We have based our benefit level factors on those produced by the Workers' Compensation Insurance Rating Bureau of California (WCIRB). See Appendix E for a display of the benefit level cost indices by fiscal year.

- We have assumed that the loss rate trend associated with claim costs increases at 4.6% per year. We have assumed that claim severity increases at 2.5% per year, and that claim frequency increases at 2.0% per year.
- We have assumed that payroll and other inflation-sensitive exposure measures increase 2.5% annually due to inflation.
- We have assumed that assets held for investment will generate an average annual return of 2.5% over the duration of payment of the loss liabilities. It should be noted that actual future investment returns may vary significantly from this assumption, depending upon the prevailing investment market conditions.
- The claims costs we have estimated include indemnity and medical payments, and all loss adjustment expenses. We have not included estimates for excess insurance contributions and other expenses associated with the program based upon information provided by the District.
- Our funding recommendations do not include provisions for catastrophic events not in the District's history, such as earthquakes, flooding, mass civil disorder, or mass occupational disease.
- Our estimates assume that all excess insurance is valid and collectible. Further, our funding recommendations do not include a provision for losses greater than the District's excess coverage.

IV. GLOSSARY OF ACTUARIAL TERMS

Accident Year - Year during which the accidents that generate a group of claims occurs, regardless of when the claims are reported, payments are made, or reserves are established.

Allocated Loss Adjustment Expenses (ALAE) - Expense incurred in settling claims that can be directly attributed to specific individual claims (e.g., legal fees, investigative fees, court charges, etc.)

Benefit Level Factor - Factor used to adjust historical losses to the current level of workers' compensation benefits.

Case Reserve - The amount left to be paid on a claim, as estimated by the claims administrator.

Claim Count Development Factor - A factor that is applied to the number of claims reported in a particular accident period in order to estimate the number of claims that will ultimately be reported.

Claim Frequency - Number of claims per \$1 million of payroll.

Confidence Level - An estimated probability that a given level of funding will be adequate to pay actual claims costs. For example, the 85% confidence level refers to an estimate for which there is an 85% chance that the amount will be sufficient to pay loss costs.

Discount Factor - A factor to adjust estimated loss costs to reflect anticipated investment income from assets held prior to actual claim payout.

Expected Losses - The best estimate of the full, ultimate value of loss costs.

Incurred but not Reported (IBNR) Losses - Losses for which the accident has occurred but the claim has not yet been reported. This is the ultimate value of losses, less any amount that has been set up as reported losses by the claims adjuster. It includes both amounts for claims incurred but not yet received by the administrator and loss development on already reported claims.

Loss Development Factor - A factor applied to losses for a particular accident period to reflect the fact that reported and paid losses do not reflect final values until all claims are settled (see Section IV).

Loss Rate - Ultimate losses per \$100 of payroll.

Non-Claims Related Expenses – Program expenses not directly associated with claims settlement and administration, such as excess insurance, safety program expenses, and general overhead. These exclude expenses associated with loss settlements (Indemnity/Medical, BI/PD), legal expenses associated with individual claims (ALAE), and claims administration (ULAE).

Outstanding Losses - Losses that have been incurred but not paid. This is the ultimate value of losses less any amount that has been paid.

Paid Losses - Losses actually paid on all reported claims.

Program Losses - Losses, including ALAE, limited to the SIR for each occurrence.

Reported Losses - The total expected value of losses as estimated by the claims administrator. This is the sum of paid losses and case reserves.

Self-Insured Retention (SIR) - The level at which an excess insurance policy is triggered to begin payments on a claim. Financially, this is similar to an insurance deductible.

Severity - Average claim cost.

Ultimate Losses - The value of claim costs at the time when all claims have been settled. This amount must be estimated until all claims are actually settled.

Unallocated Loss Adjustment Expenses (ULAE) – Claim settlement expenses that cannot be directly attributed to individual claims (e.g., claims adjusters' salaries, taxes, etc.)

Novato Fire Protection District - Workers' Compensation

Funding Guidelines for Outstanding Liabilities at
June 30, 2019

(A) Estimated Ultimate Losses Incurred through 6/30/19: (From Appendix G)	\$13,399,000
(B) Estimated Paid Losses through 6/30/19: (From Appendix G)	12,097,000
(C) Estimated Liability for Claims Outstanding at 6/30/19: (From Appendix G)	<u>\$1,302,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 6/30/19: (From Appendix F)	102,000
(E) Total Outstanding Liability for Claims at 6/30/19: ((C) + (D))	<u>\$1,404,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.5%.): (Appendix I, Page 1, (G))	0.849
(G) Discounted Outstanding Liability for Claims at 6/30/19: ((E) x (F))	<u>\$1,193,000</u>

	Marginally Acceptable	75%	Recommended	85%	Conservative
Confidence Level of Adequacy:	70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Appendix J)	1.162	1.238	1.329	1.442	1.592
(I) Margin for Adverse Experience: ((G) x [(H) - 1])	193,000	284,000	392,000	527,000	706,000
(J) Total Required Assets at 6/30/19: ((G) + (I))	<u>\$1,386,000</u>	<u>\$1,477,000</u>	<u>\$1,585,000</u>	<u>\$1,720,000</u>	<u>\$1,899,000</u>

Novato Fire Protection District - Workers' Compensation

IBNR as of 6/30/20 at Expected Claims Level

Accident Year	Estimated Ultimate (A)	Reported as of 6/30/19 (B)	Estimated IBNR as of 6/30/19 (C)	Estimated Percent of IBNR Reported Between 7/1/19 and 6/30/20 (D)	Estimated IBNR Reported (E)	Estimated IBNR as of 6/30/20 (F)
Prior	\$4,323,000	\$4,313,299	\$9,701	15.0%	\$1,000	\$8,701
1999-2000	439,000	435,295	3,705	22.1%	1,000	2,705
2000-2001	562,000	560,355	1,645	24.8%	0	1,645
2001-2002	1,064,000	1,062,787	1,213	24.7%	0	1,213
2002-2003	181,000	177,091	3,909	37.9%	1,000	2,909
2003-2004	2,004,301	2,004,301	0	27.1%	0	0
2004-2005	217,000	198,932	18,068	24.1%	4,000	14,068
2005-2006	263,000	257,533	5,467	21.5%	1,000	4,467
2006-2007	492,982	492,982	0	18.3%	0	0
2007-2008	92,328	92,328	0	16.0%	0	0
2008-2009	668,000	600,065	67,935	16.9%	11,000	56,935
2009-2010	710,000	623,176	86,824	16.7%	14,000	72,824
2010-2011	632,000	540,006	91,994	15.5%	14,000	77,994
2011-2012	712,000	569,753	142,247	15.6%	22,000	120,247
2012-2013	376,000	289,942	86,058	15.8%	14,000	72,058
2013-2014	662,000	435,908	226,092	16.8%	38,000	188,092
Totals	\$13,398,611	\$12,653,753	\$744,858		\$121,000	\$623,858

Notes:

- (A) From Exhibit 3, Page 1.
 (B) Provided by the District. These losses exclude amounts incurred above the District's SIR for each year.
 (C) (A) - (B).
 (D) Percentage of incurred but not reported (IBNR) expected to be reported between 7/1/19 and 6/30/20. The percentage is based on the development pattern selected in Appendix A.
 (E) ((A) - (B)) x (D).
 (F) (A) - (B) - (E).

This exhibit shows the calculation of the amount of incurred but not reported losses we expect as of 6/30/20. This amount is dependent on both the strength of the case reserves and the average frequency and severity of the losses incurred.

Novato Fire Protection District - Workers' Compensation

Estimated Ultimate Program Losses

Accident Year	Reported Loss Development Method (A)	Paid Loss Development Method (B)	Exposure Method Based on Reported Losses (C)	Exposure Method Based on Paid Losses (D)	Frequency-Severity Method (E)	Selected Estimate of Ultimate Losses (F)
Prior	\$4,343,492	\$4,493,787			\$4,323,291	\$4,323,000
1999-2000	439,213	441,741			438,884	439,000
2000-2001	567,079	599,874			561,760	562,000
2001-2002	1,079,792	1,162,027			1,064,131	1,064,000
2002-2003	181,695	186,754			180,633	181,000
2003-2004	2,076,456	2,335,011			2,004,301	2,004,301
2004-2005	208,481	185,424			216,551	217,000
2005-2006	273,500	298,527	283,668	324,341	262,645	263,000
2006-2007	530,942	605,875	526,434	580,618	492,982	492,982
2007-2008	100,915	116,149	106,238	125,876	92,328	92,328
2008-2009	668,472	603,667	681,049	646,742	709,578	668,000
2009-2010	710,421	785,378	723,169	791,908	656,869	710,000
2010-2011	631,807	663,675	634,533	660,379	606,866	632,000
2011-2012	688,262	776,726	697,201	765,546	619,104	712,000
2012-2013	364,457	334,975	381,136	377,796	385,457	376,000
2013-2014	578,014	743,751	641,510	785,342	466,378	662,000
Totals						\$13,398,611

Notes:

- (A) From Appendix A, Page 1, Column (G).
- (B) From Appendix B, Page 1, Column (G).
- (C) From Appendix C, Page 1, Column (G).
- (D) From Appendix C, Page 2, Column (G).
- (E) From Appendix D, Page 1, Column (C).
- (F) Selected averages of (A), (B), (C), (D), and (E).
- (G) From Not Included, Page 1, Line .
- (H) From Not Included, Page 1, Line .

This exhibit summarizes the results of the actuarial methods we have applied to estimate ultimate losses for each year. It is important to apply a number of estimation methods because each one relies on specific assumptions about the claims process that tend to hold generally true, but that may be violated in specific situations. Thus, the more estimation methods that can be applied, the better.

Novato Fire Protection District - Workers' Compensation
Estimated Ultimate Limited Losses Capped at \$100,000 per Claim

Accident Year	Reported Loss Development Method (A)	Paid Loss Development Method (B)	Exposure Method Based on Reported Losses (C)	Exposure Method Based on Paid Losses (D)	Frequency-Severity Method (E)	Selected Ultimate Limited Losses (F)
Prior	\$3,564,960	\$3,537,583			\$3,565,038	\$3,551,000
1999-2000	321,461	298,888			321,005	321,000
2000-2001	342,948	337,888			342,992	341,000
2001-2002	599,865	605,211			593,928	593,926
2002-2003	179,216	165,805			179,010	179,000
2003-2004	441,289	445,206			435,209	435,196
2004-2005	202,314	160,544			202,000	202,000
2005-2006	262,684	254,924	262,792	255,103	263,007	263,000
2006-2007	276,640	279,073	276,370	278,805	270,411	270,420
2007-2008	94,729	95,559	94,638	95,470	92,322	92,328
2008-2009	441,274	430,262	441,184	430,867	441,002	441,000
2009-2010	443,655	433,782	443,661	434,100	444,002	444,000
2010-2011	349,742	318,607	349,840	320,115	349,999	350,000
2011-2012	390,929	398,439	390,782	397,820	391,001	391,000
2012-2013	231,821	207,477	231,727	209,672	232,001	232,000
2013-2014	415,769	418,691	415,821	418,284	416,010	416,000
Totals						\$8,522,870

Notes:

- (A) From Appendix A, Page 1, Column (D).
- (B) From Appendix B, Page 1, Column (D).
- (C) Based on results in Appendix C, Page 1.
- (D) Based on results in Appendix C, Page 2.
- (E) Based on results in Appendix D, Page 1.
- (F) Selected averages of (A), (B), (C), (D), and (E).
- (G) From Not Included, Page 1, Line / Line .
- (H) From Not Included, Page 1, Line / Line .

This exhibit summarizes the results of the actuarial methods we have applied to estimate limited losses for each year. These results are used to select a limited loss rate for future years.

Novato Fire Protection District - Workers' Compensation

Reported Loss Development

Accident Year (A)	Limited Reported Losses as of 6/30/19 (B)	Reported Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Reported Losses of 6/30/19 (E)	Reported Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$3,543,698	1.006	\$3,564,960	\$4,313,299	1.007	\$4,343,492
1999-2000	319,226	1.007	321,461	435,295	1.009	439,213
2000-2001	340,226	1.008	342,948	560,355	1.012	567,079
2001-2002	593,926	1.010	599,865	1,062,787	1.016	1,079,792
2002-2003	177,091	1.012	179,216	177,091	1.026	181,695
2003-2004	435,196	1.014	441,289	2,004,301	1.036	2,076,456
2004-2005	198,932	1.017	202,314	198,932	1.048	208,481
2005-2006	257,533	1.020	262,684	257,533	1.062	273,500
2006-2007	270,420	1.023	276,640	492,982	1.077	530,942
2007-2008	92,328	1.026	94,729	92,328	1.093	100,915
2008-2009	428,838	1.029	441,274	600,065	1.114	668,472
2009-2010	429,898	1.032	443,655	623,176	1.140	710,421
2010-2011	337,589	1.036	349,742	540,006	1.170	631,807
2011-2012	375,532	1.041	390,929	569,753	1.208	688,262
2012-2013	220,362	1.052	231,821	289,942	1.257	364,457
2013-2014	390,027	1.066	415,769	435,908	1.326	578,014
Totals	\$8,410,822		\$8,559,296	\$12,653,753		\$13,442,998

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District. These losses exclude amounts over \$100,000 per occurrence.
- (C) From Appendix A, Page 2.
- (D) (B) x (C). These estimated losses exclude amounts over \$100,000 per occurrence.
- (E) Losses capped at the District's SIR. Amounts are provided by the District.
- (F) Derived from factors on Appendix A, Page 3.
- (G) (E) x (F).

This method tends to understate ultimate losses for the most recent several years because the large losses for those years generally have not yet emerged at the time of our review.

This exhibit shows the calculation of estimated ultimate losses for each year based on paid losses and case reserves as reported by the claims administrator. These losses tend to "develop" or change from period to period as more information becomes available about the cases. This development tends to follow quantifiable patterns over time.

Novato Fire Protection District - Workers' Compensation
Reported Loss Development

Accident Year	<u>Limited Losses Reported as of:</u>									
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1998-1999										
1999-2000										
2000-2001										336,295
2001-2002									602,305	602,316
2002-2003								155,191	155,323	177,069
2003-2004							435,196	435,196	435,196	435,196
2004-2005						149,253	175,956	194,071	198,520	198,520
2005-2006					263,285	252,997	258,685	263,457	263,457	263,457
2006-2007				199,119	199,163	195,834	191,002	269,969	270,420	270,420
2007-2008			90,329	103,531	101,166	92,328	92,328	92,328	92,328	92,328
2008-2009		251,445	320,622	316,228	334,158	406,082	417,360	439,700	439,700	428,838
2009-2010	232,664	366,450	405,916	439,557	439,557	461,122	476,705	429,898	429,898	429,898
2010-2011	83,426	313,206	322,614	327,175	324,006	370,099	370,099	337,589	337,589	
2011-2012	394,274	400,745	461,963	447,387	447,387	370,590	373,014	375,532		
2012-2013	143,788	205,320	196,673	232,387	232,387	220,305	220,362			
2013-2014	192,931	301,220	387,667	385,495	390,027	390,027				
2014-2015										
2015-2016										
2016-2017										
2017-2018										
2018-2019										

Reported Loss Development Factors:

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
1998-1999										
1999-2000										
2000-2001										0.972
2001-2002									1.000	1.000
2002-2003								1.001	1.140	1.000
2003-2004							1.000	1.000	1.000	1.000
2004-2005						1.179	1.103	1.023	1.000	1.000
2005-2006					0.961	1.022	1.018	1.000	1.000	0.978
2006-2007				1.000	0.983	0.975	1.413	1.002	1.000	1.000
2007-2008			1.146	0.977	0.913	1.000	1.000	1.000	1.000	1.000
2008-2009		1.275	0.986	1.057	1.215	1.028	1.054	1.000	0.975	1.000
2009-2010	1.575	1.108	1.083	1.000	1.049	1.034	0.902	1.000	1.000	
2010-2011	3.754	1.030	1.014	0.990	1.142	1.000	0.912	1.000		
2011-2012	1.016	1.153	0.968	1.000	0.828	1.007	1.007			
2012-2013	1.428	0.958	1.182	1.000	0.948	1.000				
2013-2014	1.561	1.287	0.994	1.012	1.000					
2014-2015										
2015-2016										
2016-2017										
2017-2018										

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
Average Dollar-Weighted Averages	1.867	1.135	1.053	1.005	1.004	1.027	1.045	1.003	1.013	0.994
3-yr					0.917	1.003	0.937	1.000	0.989	1.000
4-yr					0.969	1.013	0.967	1.000	0.991	0.994
Comparative Factors	1.470	1.120	1.025	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Prior	1.550	1.130	1.043	1.013	1.013	1.013	1.013	1.005	1.005	1.005
Selected	1.550	1.130	1.043	1.013	1.013	1.013	1.011	1.005	1.004	1.003
Cumulated	1.998	1.289	1.141	1.094	1.080	1.066	1.052	1.041	1.036	1.032

Novato Fire Protection District - Workers' Compensation

Paid Loss Development

Accident Year (A)	Limited Paid Losses as of 6/30/19 (B)	Paid Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Paid Losses of 6/30/19 (E)	Paid Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$3,492,185	1.013	\$3,537,583	\$4,243,425	1.059	\$4,493,787
1999-2000	294,471	1.015	298,888	410,540	1.076	441,741
2000-2001	332,240	1.017	337,888	552,370	1.086	599,874
2001-2002	593,926	1.019	605,211	1,056,388	1.100	1,162,027
2002-2003	162,395	1.021	165,805	162,395	1.150	186,754
2003-2004	435,196	1.023	445,206	2,004,301	1.165	2,335,011
2004-2005	156,476	1.026	160,544	156,476	1.185	185,424
2005-2006	247,740	1.029	254,924	247,740	1.205	298,527
2006-2007	270,420	1.032	279,073	492,982	1.229	605,875
2007-2008	92,328	1.035	95,559	92,328	1.258	116,149
2008-2009	414,112	1.039	430,262	466,512	1.294	603,667
2009-2010	415,898	1.043	433,782	587,858	1.336	785,378
2010-2011	304,014	1.048	318,607	478,497	1.387	663,675
2011-2012	375,532	1.061	398,439	526,951	1.474	776,726
2012-2013	188,102	1.103	207,477	207,030	1.618	334,975
2013-2014	365,031	1.147	418,691	410,912	1.810	743,751
Totals	\$8,140,066		\$8,387,939	\$12,096,705		\$14,333,341

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District. These losses exclude amounts over \$100,000 per occurrence.
- (C) From Appendix B, Page 2.
- (D) (B) x (C). These estimated losses exclude amounts over \$100,000 per occurrence.
- (E) Losses capped at the District's SIR. Amounts are provided by the District.
- (F) Derived from factors on Appendix B, Page 3.
- (G) (E) x (F).

This method tends to understate ultimate losses for the most recent several years because the large losses for those years generally have not yet emerged at the time of our review.

This exhibit shows the calculation of estimated ultimate losses for each year based on paid losses as reported by the claims administrator. These losses tend to "develop" or change from period to period as more information becomes available about the cases. This development tends to follow quantifiable patterns over time.

Novato Fire Protection District - Workers' Compensation
Paid Loss Development

Accident Year	<u>Limited Losses Paid as of:</u>									
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1998-1999										
1999-2000										
2000-2001										326,958
2001-2002									593,110	593,121
2002-2003								150,202	150,369	156,650
2003-2004							435,196	435,196	435,196	435,196
2004-2005						147,433	148,858	149,769	150,458	151,422
2005-2006					235,294	238,984	239,531	244,930	245,226	245,304
2006-2007				168,817	169,486	170,008	177,620	269,969	270,420	270,420
2007-2008			83,481	89,548	92,317	92,328	92,328	92,328	92,328	92,328
2008-2009		210,080	256,345	290,708	300,987	369,391	393,070	408,858	409,566	410,956
2009-2010	124,420	310,072	383,196	384,354	385,613	396,044	415,883	415,898	415,898	415,898
2010-2011	69,290	250,949	273,840	283,239	296,222	297,090	297,618	297,638	304,014	
2011-2012	204,347	308,818	317,510	365,887	369,577	370,590	373,014	375,532		
2012-2013	53,919	78,803	149,232	155,054	161,377	187,926	188,102			
2013-2014	132,066	238,979	321,932	356,963	365,013	365,031				
2014-2015										
2015-2016										
2016-2017										
2017-2018										
2018-2019										
	<u>Paid Loss Development Factors:</u>									
	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
1998-1999										
1999-2000										
2000-2001										1.000
2001-2002									1.000	1.000
2002-2003								1.001	1.042	1.002
2003-2004							1.000	1.000	1.000	1.000
2004-2005						1.010	1.006	1.005	1.006	1.001
2005-2006					1.016	1.002	1.023	1.001	1.000	1.004
2006-2007				1.004	1.003	1.045	1.520	1.002	1.000	1.000
2007-2008			1.073	1.031	1.000	1.000	1.000	1.000	1.000	1.000
2008-2009		1.220	1.134	1.035	1.227	1.064	1.040	1.002	1.003	1.008
2009-2010	2.492	1.236	1.003	1.003	1.027	1.050	1.000	1.000	1.000	
2010-2011	3.622	1.091	1.034	1.046	1.003	1.002	1.000	1.021		
2011-2012	1.511	1.028	1.152	1.010	1.003	1.007	1.007			
2012-2013	1.462	1.894	1.039	1.041	1.165	1.001				
2013-2014	1.810	1.347	1.109	1.023	1.000					
2014-2015										
2015-2016										
2016-2017										
2017-2018										
	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months
Average Dollar-Weighted Averages	2.179	1.303	1.078	1.024	1.049	1.020	1.066	1.004	1.006	1.002
3-yr					1.031	1.004	1.002	1.006	1.002	1.004
4-yr					1.024	1.018	1.012	1.006	1.001	1.004
Comparative Factors	2.500	1.400	1.170	1.090	1.050	1.033	1.020	1.015	1.012	1.010
Prior	2.150	1.300	1.100	1.045	1.040	1.040	1.040	1.012	1.005	1.005
Selected	2.150	1.300	1.100	1.045	1.040	1.040	1.040	1.012	1.005	1.004
Cumulated	3.836	1.784	1.372	1.247	1.193	1.147	1.103	1.061	1.048	1.043

Novato Fire Protection District - Workers' Compensation

Exposure and Development Method
Based on Reported Losses

Accident Year	Trended Payroll (\$00) (A)	Reported Losses as of 6/30/19 (B)	Loss Development Factor (C)	Percentage of Losses Yet to Be Reported (D)	Program Rate (E)	Incurred but not Reported (IBNR) (F)	Ultimate Program Losses (G)
2005-2006	123,451	257,533	1.062	0.058	3.650	26,135	283,668
2006-2007	134,964	492,982	1.077	0.071	3.491	33,452	526,434
2007-2008	159,035	92,328	1.093	0.085	1.029	13,910	106,238
2008-2009	166,136	600,065	1.114	0.102	4.779	80,984	681,049
2009-2010	146,715	623,176	1.140	0.123	5.541	99,993	723,169
2010-2011	125,367	540,006	1.170	0.145	5.200	94,527	634,533
2011-2012	125,974	569,753	1.208	0.172	5.882	127,448	697,201
2012-2013	123,900	289,942	1.257	0.204	3.608	91,194	381,136
2013-2014	123,673	435,908	1.326	0.246	6.758	205,602	641,510
Totals	1,229,215	\$3,901,693				\$773,245	\$4,674,938

Notes:

- (A) From Appendix M, Column (C).
- (B) Provided by the District. These losses exclude amounts incurred above the District's SIR for each year.
- (C) From Appendix A, Page 1, Column (F).
- (D) $1 - 1/(C)$.
- (E) From Appendix C, Page 3, Column (H).
- (F) $(A) \times (D) \times (E)$.
- (G) $(B) + (F)$.

This exhibit shows the calculation of ultimate losses based on the assumption that there is an underlying relationship between losses and exposure that changes in regular ways over time. The method relies on the premise that the losses that are currently unreported will cost what this relationship would suggest.

Novato Fire Protection District - Workers' Compensation

Exposure and Development Method
Based on Paid Losses

Accident Year	Trended Payroll (\$00) (A)	Paid Losses as of 6/30/19 (B)	Loss Development Factor (C)	Percentage of Losses Yet to Be Paid (D)	Program Rate (E)	Incurred but not Paid (F)	Ultimate Program Losses (G)
2005-2006	123,451	247,740	1.205	0.170	3.650	76,601	324,341
2006-2007	134,964	492,982	1.229	0.186	3.491	87,636	580,618
2007-2008	159,035	92,328	1.258	0.205	1.029	33,548	125,876
2008-2009	166,136	466,512	1.294	0.227	4.779	180,230	646,742
2009-2010	146,715	587,858	1.336	0.251	5.541	204,050	791,908
2010-2011	125,367	478,497	1.387	0.279	5.200	181,882	660,379
2011-2012	125,974	526,951	1.474	0.322	5.882	238,595	765,546
2012-2013	123,900	207,030	1.618	0.382	3.608	170,766	377,796
2013-2014	123,673	410,912	1.810	0.448	6.758	374,430	785,342
Totals	1,229,215	\$3,510,810				\$1,547,738	\$5,058,548

Notes:

- (A) From Appendix M, Column (C).
- (B) Provided by the District. These losses exclude amounts paid above the District's SIR for each year.
- (C) From Appendix B, Page 1, Column (F).
- (D) $1 - 1/(C)$.
- (E) From Appendix C, Page 3, Column (H).
- (F) $(A) \times (D) \times (E)$.
- (G) $(B) + (F)$.

This exhibit shows the calculation of ultimate losses based on the assumption that there is an underlying relationship between losses and exposure that changes in regular ways over time. The method relies on the premise that the losses that are currently unpaid will cost what this relationship would suggest.

Novato Fire Protection District - Workers' Compensation

Exposure and Development Method

Accident Year	Trended Payroll (\$00) (A)	Ultimate Limited Losses (B)	Trend Factor (C)	Trended Limited Losses (D)	Trended Limited Loss Rate (E)	Limited Loss Rate (F)	Factor to SIR (G)	Program Loss Rate (H)
2005-2006	123,451	263,000	2.599	683,537	5.537	2.130	1.713	3.650
2006-2007	134,964	270,420	2.359	637,921	4.727	2.004	1.742	3.491
2007-2008	159,035	92,328	2.101	193,981	1.220	0.581	1.770	1.029
2008-2009	166,136	441,000	1.879	828,639	4.988	2.654	1.801	4.779
2009-2010	146,715	444,000	1.650	732,600	4.993	3.026	1.831	5.541
2010-2011	125,367	350,000	1.510	528,500	4.216	2.792	1.863	5.200
2011-2012	125,974	391,000	1.444	564,604	4.482	3.104	1.895	5.882
2012-2013	123,900	232,000	1.404	325,728	2.629	1.872	1.927	3.608
2013-2014	123,673	416,000	1.356	564,096	4.561	3.364	2.009	6.758
Total/Avg	1,229,215	\$2,899,748		\$5,059,606	\$4.116			
09/10-13/14	645,629	1,833,000		2,715,528	4.206			
10/11-13/14	498,914	1,389,000		1,982,928	3.974			
				Selected Limited Rate:	\$4.200			
				Prior:	\$4.400			

Notes:

- (A) From Appendix M, Column (C).
- (B) Selected average of results from Appendices A and B.
- (C) From Appendix E, Page 1, Column (B).
- (D) (B) x (C).
- (E) (D) / (A).
- (F) Selected Limited Rate / (C). For 2013-2014 and prior (B) / (A).
- (G) Based on a Weibull distribution, a mathematical model of claim sizes.
- (H) (F) x (G).

This exhibit shows the calculation of the underlying historical relationship between losses and exposure that is needed to apply the estimation methods shown on pages 1 and 2 of this Appendix.

Novato Fire Protection District - Workers' Compensation

Frequency and Severity Method

Accident Year	Ultimate Program Severity (A)	Adjusted Ultimate Claims (B)	Ultimate Program Losses (C)
Prior	\$12,335	367	\$4,526,945
1999-2000	13,788	31	427,428
2000-2001	17,704	26	460,304
2001-2002	34,104	24	818,496
2002-2003	9,742	30	292,260
2003-2004	23,282	31	721,742
2004-2005	17,028	20	340,560
2005-2006	16,691	27	450,657
2006-2007	20,480	23	471,040
2007-2008	9,081	18	163,458
2008-2009	34,529	23	794,167
2009-2010	31,272	26	813,072
2010-2011	34,311	19	651,909
2011-2012	38,995	19	740,905
2012-2013	19,440	23	447,120
2013-2014	27,857	30	835,710
Total		737	\$12,955,773

Notes:

- (A) From Appendix D, Page 2, Column (H).
- (B) From Appendix D, Page 2, Column (B).
- (C) (A) x (B).

This exhibit shows the calculation of the estimated ultimate losses for each year based on the observed average frequency and severity of claims.

Novato Fire Protection District - Workers' Compensation

Frequency and Severity Method

Accident Year	Ultimate Limited Losses (A)	Adjusted Ultimate Claims (B)	Ultimate Limited Severity (C)	Trend Factor (D)	Trended Limited Severity (E)	Limited Severity (F)	Factor to SIR (G)	Program Severity (H)
Prior	\$3,565,000	367	\$9,714	1.502	\$14,590	\$9,714	1.270	\$12,335
1999-2000	321,000	31	10,355	1.311	13,575	10,355	1.332	13,788
2000-2001	343,000	26	13,192	1.207	15,923	13,192	1.342	17,704
2001-2002	593,926	24	24,747	1.184	29,300	24,747	1.378	34,104
2002-2003	179,000	30	5,967	1.216	7,256	5,967	1.633	9,742
2003-2004	435,196	31	14,039	1.468	20,609	14,039	1.658	23,282
2004-2005	202,000	20	10,100	1.846	18,645	10,100	1.686	17,028
2005-2006	263,000	27	9,741	1.956	19,053	9,741	1.713	16,691
2006-2007	270,420	23	11,757	1.811	21,292	11,757	1.742	20,480
2007-2008	92,328	18	5,129	1.646	8,442	5,129	1.770	9,081
2008-2009	441,000	23	19,174	1.502	28,799	19,174	1.801	34,529
2009-2010	444,000	26	17,077	1.348	23,020	17,077	1.831	31,272
2010-2011	350,000	19	18,421	1.258	23,174	18,421	1.863	34,311
2011-2012	391,000	19	20,579	1.227	25,250	20,579	1.895	38,995
2012-2013	232,000	23	10,087	1.218	12,286	10,087	1.927	19,440
2013-2014	416,000	30	13,867	1.201	16,654	13,867	2.009	27,857
Average Limited Severity:					\$18,617			
Average 09/10-13/14 Limited Severity:					20,077			
Average 10/11-13/14 Limited Severity:					19,341			
Selected Limited Severity:					\$19,700			
Prior:					\$20,700			

Notes:

- (A) Selected average of results from Appendices A, B, and C.
- (B) Appendix D, Page 3, Column (C).
- (C) (A) / (B).
- (D) From Appendix E, Page 1, Column (J).
- (E) (C) x (D).
- (F) Selected Limited Severity / (D).
- (G) Based on a Weibull distribution, a mathematical model of claim sizes.
- (H) (F) x (G).

This exhibit shows the calculation of the historical average cost per claim, or severity. The observed average severity is used in the method shown on page 1 of this Appendix.

Novato Fire Protection District - Workers' Compensation

Frequency and Severity Method
Projection of Ultimate Claims

Accident Year	Reported Claim Development (A)	Closed Claim Development (B)	Selected Ultimate Claims (C)	Trended Payroll (\$000,000) (D)	Claim Frequency (E)	Trend Factor (F)	Trended Claim Frequency (G)
Prior	367	364	367	0.0		1.516	
1999-2000	31	29	31	0.0		1.485	
2000-2001	26	25	26	0.0		1.456	
2001-2002	24	23	24	0.0		1.428	
2002-2003	30	29	30	0.0		1.400	
2003-2004	31	31	31	0.0		1.372	
2004-2005	20	19	20	0.0		1.345	
2005-2006	27	26	27	12.3	2.187	1.319	2.885
2006-2007	23	23	23	13.5	1.704	1.293	2.203
2007-2008	18	18	18	15.9	1.132	1.268	1.435
2008-2009	23	21	23	16.6	1.384	1.243	1.720
2009-2010	26	25	26	14.7	1.772	1.219	2.160
2010-2011	19	17	19	12.5	1.516	1.195	1.812
2011-2012	19	19	19	12.6	1.508	1.172	1.767
2012-2013	23	22	23	12.4	1.856	1.149	2.133
2013-2014	30	31	30	12.4	2.426	1.126	2.732
Total	737	722	737	122.9			2.063
11/12-14/15	72	72	72	37.4			2.208
					(H) Selected Frequency:		2.100
					Prior:		2.100

Notes:

- (A) From Appendix D, Page 4, (C).
- (B) From Appendix D, Page 5, (C).
- (C) Selected from (A) and (B).
- (D) From Appendix M, Column (C) / 10,000.
- (E) (C) / (D).
- (F) From Appendix E, Page 1, Column (H).
- (G) (E) x (F).
- (H) The selected frequency of 2.100 is based on (G).
- (I) From Appendix E, Page 1, Column (H).
- (J) (H) x (I).
- (K) From Appendix M, Column (C) / 10,000.
- (L) (J) x (K).

This exhibit summarizes the estimated numbers of claims and shows the estimated frequencies per \$1,000,000 of trended payroll.

Novato Fire Protection District - Workers' Compensation

Frequency and Severity Method
Reported Claim Count Development

Accident Year	Claims Reported as of 6/30/2019 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	367	1.000	367	
1999-2000	31	1.000	31	
2000-2001	26	1.000	26	
2001-2002	24	1.000	24	
2002-2003	30	1.000	30	
2003-2004	31	1.000	31	
2004-2005	20	1.000	20	
2005-2006	27	1.000	27	2.885
2006-2007	23	1.000	23	2.203
2007-2008	18	1.000	18	1.435
2008-2009	23	1.000	23	1.721
2009-2010	26	1.000	26	2.160
2010-2011	19	1.000	19	1.811
2011-2012	19	1.000	19	1.768
2012-2013	23	1.001	23	2.133
2013-2014	30	1.002	30	2.731
Total	737		737	2.063

Notes:

- (A) Provided by the District.
- (B) From Appendix D, Page 6.
- (C) (A) x (B).
- (D) (C) / [Appendix D, Page 3, (D)] x [Appendix D, Page 3, (F)].

This exhibit shows the calculation of estimated ultimate claims for each year based on reported claims as provided by the District. These numbers of claims tend to "develop" or change from period to period as more claims are filed. This development tends to follow quantifiable patterns over time.

Novato Fire Protection District - Workers' Compensation

Frequency and Severity Method
Closed Claim Count Development

Accident Year	Claims Closed as of 6/30/2019 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	362	1.005	364	
1999-2000	29	1.006	29	
2000-2001	25	1.007	25	
2001-2002	23	1.008	23	
2002-2003	29	1.009	29	
2003-2004	31	1.010	31	
2004-2005	19	1.011	19	
2005-2006	26	1.012	26	2.778
2006-2007	23	1.013	23	2.203
2007-2008	18	1.015	18	1.435
2008-2009	21	1.018	21	1.571
2009-2010	24	1.022	25	2.077
2010-2011	17	1.027	17	1.620
2011-2012	18	1.035	19	1.768
2012-2013	21	1.045	22	2.040
2013-2014	29	1.061	31	2.822
Total	715		722	2.003

Notes:

- (A) Provided by the District.
- (B) From Appendix D, Page 7.
- (C) (A) x (B).
- (D) (C) / [Appendix D, Page 3, (D)] x [Appendix D, Page 3, (F)].

This exhibit shows the calculation of estimated ultimate claims for each year based on closed claims as provided by the District. These numbers of closed claims tend to "develop" or change from period to period as more claims are closed. This development tends to follow quantifiable patterns over time.

Novato Fire Protection District - Workers' Compensation
Reported Claim Count Development

Accident Year	Claims Reported as of:													
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	132 Months	144 Months	156 Months	
1998-1999													34	34
1999-2000												31	31	31
2000-2001										28	28	28	28	
2001-2002									25	25	25	25	25	24
2002-2003								30	30	30	30	30	30	30
2003-2004							35	35	35	35	31	31	31	31
2004-2005						25	25	25	25	20	20	20	20	20
2005-2006					29	29	29	29	27	27	27	27	27	27
2006-2007				24	24	25	25	23	23	23	23	23	23	23
2007-2008			20	20	20	20	18	18	18	18	18	18	18	
2008-2009		22	22	23	23	23	23	23	23	23	23	23		
2009-2010	24	26	26	27	26	26	26	26	26	26				
2010-2011	24	25	25	19	19	19	19	19	19					
2011-2012	23	24	19	19	19	19	19	19						
2012-2013	21	23	23	23	23	23	23							
2013-2014	28	28	29	29	30	30								
2014-2015														
2015-2016														
2016-2017														
2017-2018														
2018-2019														

Reported Claim Count Development Factors:

	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	
	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	Months	
1998-1999													1.000	1.000
1999-2000												1.000	1.000	1.000
2000-2001										1.000	1.000	1.000	0.929	
2001-2002									1.000	1.000	1.000	0.960	1.000	
2002-2003								1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003-2004							1.000	1.000	1.000	0.886	1.000	1.000	1.000	1.000
2004-2005						1.000	1.000	1.000	0.800	1.000	1.000	1.000	1.000	1.000
2005-2006					1.000	1.000	1.000	0.931	1.000	1.000	1.000	1.000	1.000	1.000
2006-2007				1.000	1.042	1.000	0.920	1.000	1.000	1.000	1.000	1.000	1.000	
2007-2008			1.000	1.000	1.000	0.900	1.000	1.000	1.000	1.000	1.000	1.000		
2008-2009		1.000	1.045	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
2009-2010	1.083	1.000	1.038	0.963	1.000	1.000	1.000	1.000	1.000					
2010-2011	1.042	1.000	0.760	1.000	1.000	1.000	1.000	1.000						
2011-2012	1.043	0.792	1.000	1.000	1.000	1.000	1.000							
2012-2013	1.095	1.000	1.000	1.000	1.000	1.000								
2013-2014	1.000	1.036	1.000	1.034	1.000									
2014-2015														
2015-2016														
2016-2017														
2017-2018														
Average Claim-Weighted Averages	1.053	0.971	0.978	1.000	1.005	0.989	0.991	0.992	0.978	0.987	1.000	0.996	0.991	
3-yr					1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
4-yr					1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Comparative Factors	1.100	1.007	1.004	1.003	1.002	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Prior	1.080	1.007	1.004	1.003	1.002	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.080	1.007	1.004	1.003	1.002	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulated	1.099	1.018	1.011	1.007	1.004	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Novato Fire Protection District - Workers' Compensation
Closed Claim Development

Accident Year	<u>Claims Closed as of:</u>													
	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	132 Months	144 Months	156 Months	
1998-1999													33	33
1999-2000												31	31	31
2000-2001										27	28	28	28	
2001-2002									22	23	23	23	22	
2002-2003								29	29	29	29	29	29	
2003-2004							32	32	32	32	30	30	30	
2004-2005						24	24	24	24	19	19	19	19	
2005-2006					27	27	27	28	26	26	26	26	26	
2006-2007				21	21	23	24	22	23	23	23	23	23	
2007-2008			18	18	19	20	18	18	18	18	18	18		
2008-2009		19	19	20	20	21	20	20	20	21	21			
2009-2010	17	21	22	24	23	23	23	24	24	24				
2010-2011	19	20	21	15	16	16	16	17	17					
2011-2012	11	19	13	14	14	17	18	18						
2012-2013	15	19	21	21	21	21	21							
2013-2014	23	23	24	27	28	29								
2014-2015														
2015-2016														
2016-2017														
2017-2018														
2018-2019														

Closed Claim Count Development Factors:

	12-24 Months	24-36 Months	36-48 Months	48-60 Months	60-72 Months	72-84 Months	84-96 Months	96-108 Months	108-120 Months	120-132 Months	132-144 Months	144-156 Months	156-168 Months	
1998-1999													1.000	1.000
1999-2000												1.000	1.000	0.968
2000-2001										1.037	1.000	1.000	1.000	0.893
2001-2002									1.045	1.000	1.000	0.957	1.000	
2002-2003								1.000	1.000	1.000	1.000	1.000	1.000	1.000
2003-2004							1.000	1.000	1.000	0.938	1.000	1.000	1.000	1.000
2004-2005						1.000	1.000	1.000	0.792	1.000	1.000	1.000	1.000	1.000
2005-2006					1.000	1.000	1.037	0.929	1.000	1.000	1.000	1.000	1.000	1.000
2006-2007				1.000	1.095	1.043	0.917	1.045	1.000	1.000	1.000	1.000	1.000	
2007-2008			1.000	1.056	1.053	0.900	1.000	1.000	1.000	1.000	1.000	1.000		
2008-2009		1.000	1.053	1.000	1.050	0.952	1.000	1.000	1.050	1.000				
2009-2010	1.235	1.048	1.091	0.958	1.000	1.000	1.043	1.000	1.000					
2010-2011	1.053	1.050	0.714	1.067	1.000	1.000	1.063	1.000						
2011-2012	1.727	0.684	1.077	1.000	1.214	1.059	1.000							
2012-2013	1.267	1.105	1.000	1.000	1.000	1.000								
2013-2014	1.000	1.043	1.125	1.037	1.036									
2014-2015														
2015-2016														
2016-2017														
2017-2018														
Average Claim-Weighted Averages	1.256	0.988	1.009	1.015	1.050	0.995	1.007	0.997	0.987	0.997	1.000	0.995	0.983	
3-yr					1.063	1.019	1.035	1.000	1.016	1.000	1.000	1.000	1.000	1.000
4-yr					1.051	1.013	1.026	1.000	1.012	1.000	1.000	1.000	1.000	1.000
Comparative Factors	1.600	1.080	1.050	1.030	1.025	1.015	1.010	1.008	1.005	1.004	1.003	1.002	1.001	1.001
Prior	1.550	1.080	1.050	1.030	1.025	1.015	1.010	1.008	1.005	1.004	1.003	1.002	1.001	1.001
Selected	1.550	1.080	1.050	1.030	1.025	1.015	1.010	1.008	1.005	1.004	1.003	1.002	1.001	1.001
Cumulated	1.970	1.271	1.177	1.121	1.088	1.061	1.045	1.035	1.027	1.022	1.018	1.015	1.013	

Novato Fire Protection District - Workers' Compensation

Loss Trend Factors

Accident Year	Benefit Level Factor (A)	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to	Factor to
		2019-2020 Loss Rate Level (B)	2020-2021 Loss Rate Level (C)	2021-2022 Loss Rate Level (D)	2022-2023 Loss Rate Level (E)	2019-2020 Frequency Level (F)	2020-2021 Frequency Level (G)	2021-2022 Frequency Level (H)	2022-2023 Frequency Level (I)	2019-2020 Severity Level (J)
Prior	0.895	2.300	2.405	2.516	2.631	1.516	1.546	1.576	1.608	1.502
1999-2000	0.800	1.967	2.057	2.152	2.251	1.485	1.515	1.545	1.576	1.311
2000-2001	0.755	1.774	1.855	1.940	2.030	1.456	1.486	1.515	1.545	1.207
2001-2002	0.760	1.706	1.784	1.866	1.952	1.428	1.457	1.485	1.515	1.184
2002-2003	0.800	1.717	1.796	1.878	1.965	1.400	1.428	1.456	1.485	1.216
2003-2004	0.989	2.031	2.124	2.221	2.323	1.372	1.400	1.427	1.456	1.468
2004-2005	1.276	2.504	2.619	2.739	2.865	1.345	1.372	1.399	1.427	1.846
2005-2006	1.385	2.599	2.718	2.843	2.974	1.319	1.345	1.372	1.399	1.956
2006-2007	1.315	2.359	2.467	2.580	2.699	1.293	1.319	1.345	1.372	1.811
2007-2008	1.225	2.101	2.197	2.298	2.404	1.268	1.293	1.319	1.345	1.646
2008-2009	1.145	1.879	1.965	2.055	2.150	1.243	1.268	1.293	1.319	1.502
2009-2010	1.052	1.650	1.726	1.805	1.888	1.219	1.243	1.268	1.293	1.348
2010-2011	1.007	1.510	1.579	1.651	1.727	1.195	1.219	1.243	1.268	1.258
2011-2012	1.007	1.444	1.510	1.579	1.652	1.172	1.195	1.219	1.243	1.227
2012-2013	1.024	1.404	1.468	1.536	1.606	1.149	1.172	1.195	1.219	1.218
2013-2014	1.035	1.356	1.418	1.484	1.552	1.126	1.149	1.172	1.195	1.201
2014-2015	1.019	1.277	1.335	1.396	1.461	1.105	1.127	1.149	1.172	1.154
2015-2016	1.023	1.226	1.282	1.340	1.402	1.083	1.105	1.126	1.149	1.130
2016-2017	1.025	1.174	1.228	1.284	1.343	1.061	1.083	1.104	1.126	1.104
2017-2018	1.006	1.101	1.152	1.204	1.260	1.041	1.062	1.082	1.104	1.058
2018-2019	1.000	1.046	1.094	1.144	1.197	1.020	1.040	1.061	1.082	1.025
2019-2020	1.000	1.000	1.046	1.094	1.144	1.000	1.020	1.040	1.061	1.000
2020-2021	1.000	--	1.000	1.046	1.094	--	1.000	1.020	1.040	--
2021-2022	1.000	--	--	1.000	1.046	--	--	1.000	1.020	--
2022-2023	1.000	--	--	--	1.000	--	--	--	1.000	--

Notes:

- (A) Based on WCIRB.
- (B) - (E) (A) adjusted for a 4.6% annual loss rate trend.
- (F) - (I) (A) adjusted for a 2.0% annual frequency trend.
- (J) (A) adjusted for a 2.5% annual severity trend.

This exhibit shows the calculation of the ways in which we expect claims costs to have changed over the past twenty years due to changes in statutory workers' compensation benefit levels and changes in actual claims costs in excess of changes in payroll. Changes in the ways in which claims are filed as a result of greater awareness of workers' compensation benefits are not generally reflected in the statutory benefit level factors shown above, but may be part of the reason for changes in actual claims costs in excess of payroll changes.

Novato Fire Protection District - Workers' Compensation

Residual Trend Factors

Accident Year	Initial Estimate of Ultimate Limited Losses (A)	Ultimate Reported Claims (B)	BLF (C)	Adjusted Limited Severity (D)	Trended Payroll (\$00) (E)	Ultimate Frequency (F)
Prior	\$3,565,000	367	0.895	8,691		
1999-2000	321,000	31	0.800	8,287		
2000-2001	343,000	26	0.755	9,961		
2001-2002	593,926	24	0.760	18,796		
2002-2003	179,000	30	0.800	4,771		
2003-2004	435,196	31	0.989	13,885		
2004-2005	202,000	20	1.276	12,883		
2005-2006	263,000	27	1.385	13,491	123,451	2.187
2006-2007	270,420	23	1.315	15,457	134,964	1.704
2007-2008	92,328	18	1.225	6,281	159,035	1.132
2008-2009	441,000	23	1.145	21,958	166,136	1.384
2009-2010	444,000	26	1.052	17,972	146,715	1.772
2010-2011	350,000	19	1.007	18,553	125,367	1.516
2011-2012	391,000	19	1.007	20,730	125,974	1.508
2012-2013	232,000	23	1.024	10,334	123,900	1.856
2013-2014	416,000	30	1.035	14,355	123,673	2.426
2014-2015		0	1.019			

	Severity Trend Factors	Frequency Trend Factors
	Latest 9	1.021
	Latest 5	0.902
	Prior	1.025
	Default	1.025
	Selected Residual Trend	1.025
		1.020

Notes:

- (A) Selected average of results from Appendix A and Appendix B.
- (B) Appendix D, Page 3, Column (C).
- (C) Appendix E, Page 1, (A).
- (D) $(A) \times (C) / (B)$.
- (E) From Appendix M, Column (C).
- (F) $(B) / (E) \times 10,000$.

Novato Fire Protection District - Workers' Compensation

Outstanding Liability for
Unallocated Loss Adjustment Expenses
as of 6/30/19

Fiscal Year (A)	Number of Claims Active During Fiscal Year (B)	Average ULAE Charge per Active Claim (C)	Inflation Trend Factor (D)	Trended ULAE Charge per Active Claim (E)	ULAE Paid During Year (F)
2019-2020	15.0	\$1,355	1.000	\$1,355	\$20,325
2020-2021	10.7	1,355	1.050	1,423	15,226
2021-2022	8.1	1,355	1.103	1,495	12,110
2022-2023	7.0	1,355	1.158	1,569	10,983
2023-2024	5.5	1,355	1.216	1,648	9,064
2024-2025	4.3	1,355	1.277	1,730	7,439
2025-2026	3.9	1,355	1.341	1,817	7,086
2026-2027	3.6	1,355	1.408	1,908	6,869
2027-2028	2.4	1,355	1.478	2,003	4,807
2028-2029	1.6	1,355	1.552	2,103	3,365
2029-2030	1.1	1,355	1.630	2,209	2,430
2030-2031	0.6	1,355	1.712	2,320	1,392
2031-2032	0.2	1,355	1.798	2,436	487
2032-2033	0.0	1,355	1.888	2,558	0
2033-2034	0.0	1,355	1.982	2,686	0
2034-2035	0.0	1,355	2.081	2,820	0
2035-2036	0.0	1,355	2.185	2,961	0
2036-2037	0.0	1,355	2.294	3,108	0

(G) Total ULAE Outstanding as of 6/30/19: \$101,583

Notes:

- (A) We assume fiscal years will be 7/1 to 6/30.
- (B) Based on an estimated claim closing pattern.
- (C) Based on claims administration payment information provided by the District.
- (D) We assume ULAE costs will increase at 5.0% per year.
- (E) (C) x (D).
- (F) (B) x (E).
- (G) Total of Column (F).

This exhibit shows the calculation of the outstanding ULAE based on the expected pattern of claims closings and assumptions about future claims administration costs per open claim.

Novato Fire Protection District - Workers' Compensation

Outstanding Liability for
Unallocated Loss Adjustment Expenses
as of 6/30/20

Fiscal Year (A)	Number of Claims Active During Fiscal Year (B)	Average ULAE Charge per Active Claim (C)	Inflation Trend Factor (D)	Trended ULAE Charge per Active Claim (E)	ULAE Paid During Year (F)
2020-2021	10.7	\$1,355	1.050	\$1,423	\$15,226
2021-2022	8.1	1,355	1.103	1,495	12,110
2022-2023	7.0	1,355	1.158	1,569	10,983
2023-2024	5.5	1,355	1.216	1,648	9,064
2024-2025	4.3	1,355	1.277	1,730	7,439
2025-2026	3.9	1,355	1.341	1,817	7,086
2026-2027	3.6	1,355	1.408	1,908	6,869
2027-2028	2.4	1,355	1.478	2,003	4,807
2028-2029	1.6	1,355	1.552	2,103	3,365
2029-2030	1.1	1,355	1.630	2,209	2,430
2030-2031	0.6	1,355	1.712	2,320	1,392
2031-2032	0.2	1,355	1.798	2,436	487
2032-2033	0.0	1,355	1.888	2,558	0
2033-2034	0.0	1,355	1.982	2,686	0
2034-2035	0.0	1,355	2.081	2,820	0
2035-2036	0.0	1,355	2.185	2,961	0
2036-2037	0.0	1,355	2.294	3,108	0
2037-2038	0.0	1,355	2.409	3,264	0

(G) Total ULAE Outstanding as of 6/30/20: \$81,258

Notes:

- (A) We assume fiscal years will be 7/1 to 6/30.
- (B) Based on an estimated claim closing pattern.
- (C) Based on claims administration payment information provided by the District.
- (D) We assume ULAE costs will increase at 5.0% per year.
- (E) (C) x (D).
- (F) (B) x (E).
- (G) Total of Column (F).

This exhibit shows the calculation of the outstanding ULAE based on the expected pattern of claims closings and assumptions about future claims administration costs per open claim.

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

Accident Year	Calendar Period										
	As of 6/30/2019	7/1/2019 to 6/30/2020	7/1/2020 to 6/30/2021	7/1/2021 to 6/30/2022	7/1/2022 to 6/30/2023	7/1/2023 to 6/30/2024	7/1/2024 to 6/30/2025	7/1/2025 to 6/30/2026	7/1/2026 to 6/30/2027	7/1/2027 to 6/30/2028	7/1/2028 to 6/30/2029
Prior											
Ultimate Loss	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000	\$6,569,000
Paid in Calendar Period	-	25,282	17,469	14,301	12,608	10,958	9,351	8,004	6,829	5,816	4,952
Paid to Date	6,425,118	6,450,400	6,467,869	6,482,170	6,494,778	6,505,736	6,515,087	6,523,091	6,529,920	6,535,736	6,540,688
Undiscounted Outstanding Liability	143,882	118,600	101,131	86,830	74,222	63,264	53,913	45,909	39,080	33,264	28,312
2003-2004											
Ultimate Loss	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301	\$2,004,301
Paid in Calendar Period	-										
Paid to Date	2,004,301	2,004,301	2,004,301	2,004,301	2,004,301	2,004,301	2,004,301	2,004,301	2,004,301	2,004,301	2,004,301
Undiscounted Outstanding Liability											
2004-2005											
Ultimate Loss	\$217,000	\$217,000	\$217,000	\$217,000	\$217,000	\$217,000	\$217,000	\$217,000	\$217,000	\$217,000	\$217,000
Paid in Calendar Period	-	5,629	4,337	5,258	5,844	4,261	4,470	4,486	3,857	3,290	2,826
Paid to Date	156,476	162,105	166,442	171,700	177,544	181,805	186,275	190,761	194,618	197,908	200,734
Undiscounted Outstanding Liability	60,524	54,895	50,558	45,300	39,456	35,195	30,725	26,239	22,382	19,092	16,266
2005-2006											
Ultimate Loss	\$263,000	\$263,000	\$263,000	\$263,000	\$263,000	\$263,000	\$263,000	\$263,000	\$263,000	\$263,000	\$263,000
Paid in Calendar Period	-	1,251	1,303	1,004	1,217	1,353	986	1,035	1,038	893	761
Paid to Date	247,740	248,991	250,294	251,298	252,515	253,868	254,854	255,889	256,927	257,820	258,581
Undiscounted Outstanding Liability	15,260	14,009	12,706	11,702	10,485	9,132	8,146	7,111	6,073	5,180	4,419
2006-2007											
Ultimate Loss	\$492,982	\$492,982	\$492,982	\$492,982	\$492,982	\$492,982	\$492,982	\$492,982	\$492,982	\$492,982	\$492,982
Paid in Calendar Period	-										
Paid to Date	492,982	492,982	492,982	492,982	492,982	492,982	492,982	492,982	492,982	492,982	492,982
Undiscounted Outstanding Liability											
2007-2008											
Ultimate Loss	\$92,328	\$92,328	\$92,328	\$92,328	\$92,328	\$92,328	\$92,328	\$92,328	\$92,328	\$92,328	\$92,328
Paid in Calendar Period	-										
Paid to Date	92,328	92,328	92,328	92,328	92,328	92,328	92,328	92,328	92,328	92,328	92,328
Undiscounted Outstanding Liability											
2008-2009											
Ultimate Loss	\$668,000	\$668,000	\$668,000	\$668,000	\$668,000	\$668,000	\$668,000	\$668,000	\$668,000	\$668,000	\$668,000
Paid in Calendar Period	-	19,544	16,557	14,389	12,382	12,891	9,932	12,042	13,384	9,760	10,237
Paid to Date	466,512	486,056	502,613	517,002	529,384	542,275	552,207	564,249	577,633	587,393	597,630
Undiscounted Outstanding Liability	201,488	181,944	165,387	150,998	138,616	125,725	115,793	103,751	90,367	80,607	70,370

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

Accident Year	Calendar Period											
	As of 6/30/2019	7/1/2019 to 6/30/2020	7/1/2020 to 6/30/2021	7/1/2021 to 6/30/2022	7/1/2022 to 6/30/2023	7/1/2023 to 6/30/2024	7/1/2024 to 6/30/2025	7/1/2025 to 6/30/2026	7/1/2026 to 6/30/2027	7/1/2027 to 6/30/2028	7/1/2028 to 6/30/2029	
2009-2010												
Ultimate Loss	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000	\$710,000
Paid in Calendar Period	-	11,848	10,699	9,163	7,868	6,770	7,049	5,431	6,585	7,318	5,336	
Paid to Date	587,858	599,706	610,405	619,568	627,436	634,206	641,255	646,686	653,271	660,589	665,925	
Undiscounted Outstanding Liability	122,142	110,294	99,595	90,432	82,564	75,794	68,745	63,314	56,729	49,411	44,075	
2010-2011												
Ultimate Loss	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000	\$632,000
Paid in Calendar Period	-	15,197	13,416	12,114	10,375	8,909	7,666	7,982	6,150	7,456	8,287	
Paid to Date	478,497	493,694	507,110	519,224	529,599	538,508	546,174	554,156	560,306	567,762	576,049	
Undiscounted Outstanding Liability	153,503	138,306	124,890	112,776	102,401	93,492	85,826	77,844	71,694	64,238	55,951	
2011-2012												
Ultimate Loss	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000	\$712,000
Paid in Calendar Period	-	24,426	15,902	14,038	12,676	10,857	9,322	8,022	8,352	6,435	7,802	
Paid to Date	526,951	551,377	567,279	581,317	593,993	604,850	614,172	622,194	630,546	636,981	644,783	
Undiscounted Outstanding Liability	185,049	160,623	144,721	130,683	118,007	107,150	97,828	89,806	81,454	75,019	67,217	
2012-2013												
Ultimate Loss	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000	\$376,000
Paid in Calendar Period	-	26,697	18,780	12,226	10,793	9,746	8,347	7,167	6,168	6,421	4,947	
Paid to Date	207,030	233,727	252,507	264,733	275,526	285,272	293,619	300,786	306,954	313,375	318,322	
Undiscounted Outstanding Liability	168,970	142,273	123,493	111,267	100,474	90,728	82,381	75,214	69,046	62,625	57,678	
2013-2014												
Ultimate Loss	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000	\$662,000
Paid in Calendar Period	-	36,910	33,840	23,805	15,497	13,680	12,354	10,580	9,085	7,818	8,139	
Paid to Date	410,912	447,822	481,662	505,467	520,964	534,644	546,998	557,578	566,663	574,481	582,620	
Undiscounted Outstanding Liability	251,088	214,178	180,338	156,533	141,036	127,356	115,002	104,422	95,337	87,519	79,380	
2014-2015												
Paid in Calendar Period	-											
Undiscounted Outstanding Liability												

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

Accident Year	As of 6/30/2019	Calendar Period									
		7/1/2019 to 6/30/2020	7/1/2020 to 6/30/2021	7/1/2021 to 6/30/2022	7/1/2022 to 6/30/2023	7/1/2023 to 6/30/2024	7/1/2024 to 6/30/2025	7/1/2025 to 6/30/2026	7/1/2026 to 6/30/2027	7/1/2027 to 6/30/2028	7/1/2028 to 6/30/2029
Ultimate Loss	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611	\$13,398,611
Ultimate Loss at 80%	13,827,000	13,827,000	13,827,000	13,827,000	13,827,000	13,827,000	13,827,000	13,827,000	13,827,000	13,827,000	13,827,000
Paid at Expected in Calendar Period	-	166,784	132,303	106,298	89,260	79,425	69,477	64,749	61,448	55,207	53,287
Paid at 80% in Calendar Period		221,718	175,831	141,270	118,627	105,556	92,335	86,051	81,664	73,370	70,818
Total Paid to Date at Expected	12,096,705	12,263,489	12,395,792	12,502,090	12,591,350	12,670,775	12,740,252	12,805,001	12,866,449	12,921,656	12,974,943
Total Paid to Date at 80%		12,318,423	12,494,254	12,635,524	12,754,150	12,859,706	12,952,041	13,038,092	13,119,757	13,193,127	13,263,945
Undiscounted Outstanding Liability at Expected	1,301,906	1,135,122	1,002,819	896,521	807,261	727,836	658,359	593,610	532,162	476,955	423,668
Undiscounted Outstanding Liability at 80%	1,730,233	1,508,577	1,332,746	1,191,476	1,072,850	967,294	874,959	788,908	707,243	633,873	563,055
Total Undiscounted Outstanding ULAE at Expected	101,583	81,258	66,032	53,922	42,939	34,193	27,229	21,683	17,266	13,749	10,949
Total Undiscounted Outstanding ULAE at 80%	135,004	107,992	87,757	71,662	57,066	45,443	36,187	28,816	22,947	18,273	14,551
Total Undiscounted Outstanding Liability at Expected	1,403,489	1,216,380	1,068,851	950,443	850,200	762,029	685,588	615,293	549,428	490,704	434,617
Total Undiscounted Outstanding Liability at 80%	1,865,237	1,616,569	1,420,503	1,263,139	1,129,916	1,012,737	911,146	817,724	730,190	652,146	577,606

Notes appear on the next page.

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

Notes to previous page:

- Accident Year is associated with date of loss. Calendar Period is associated with date of transaction. For example, for the losses which occurred during 2013-2014, \$36,910 is expected to be paid between 7/1/19 and 6/30/20, \$447,822 will have been paid by 6/30/20, and the reserve for remaining payments on these claims should be \$214,178.
- Ultimate Losses for each accident year are from Exhibit 3, Page 1.
- Paid in Calendar Period is a proportion of the Undiscounted Outstanding Liability from the previous calendar period. These proportions are derived from the paid loss development pattern selected in Appendix B. For example, $\$33,840 = \$214,178 \times 15.8\%$.
- Paid to Date is Paid in Calendar Period plus Paid to Date from previous calendar period. For example, $\$481,662 = \$33,840 + \$447,822$.
- Outstanding Liability is Ultimate Loss minus Paid to Date. For example, $\$214,178 = \$251,088 - \$36,910$.

This exhibit shows the calculation of the liability for outstanding claims as of the date of evaluation, the end of the current fiscal year, and the end of the coming fiscal year. It also shows the expected claims payout during the remainder of the current fiscal year and the coming fiscal year. Refer to the Totals at the end of the exhibit for the balance sheet information. The top parts of the exhibit show information for each program year.

Novato Fire Protection District - Workers' Compensation

Short- and Long-Term Liabilities

<u>Liabilities as of 6/30/19:</u>		<u>Expected</u>	<u>Discounted</u>
<u>Current (Short Term)</u>	Loss and ALAE:	\$166,784	\$164,737
	ULAE:	20,325	20,076
	Short-Term Loss and LAE:	\$187,109	\$184,813
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$1,135,122	\$941,217
	ULAE:	81,258	66,218
	Long-Term Loss and LAE:	\$1,216,380	\$1,007,435
<u>Total Liability</u>	Loss and ALAE:	\$1,301,906	\$1,105,954
	ULAE:	101,583	86,294
	Total Loss and LAE:	\$1,403,489	\$1,192,248

<u>Liabilities as of 6/30/20:</u>			
<u>Current (Short Term)</u>	Loss and ALAE:	\$132,303	\$130,680
	ULAE:	15,226	15,039
	Short-Term Loss and LAE:	\$147,529	\$145,719
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$1,002,819	\$838,019
	ULAE:	66,032	54,306
	Long-Term Loss and LAE:	\$1,068,851	\$892,325
<u>Total Liability</u>	Loss and ALAE:	\$1,135,122	\$968,699
	ULAE:	81,258	69,345
	Total Loss and LAE:	\$1,216,380	\$1,038,044

		<u>Discounted with a Margin for Contingencies</u>				
		<u>70%</u>	<u>75%</u>	<u>80%</u>	<u>85%</u>	<u>90%</u>
		<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>	<u>Confidence</u>
<u>Liabilities as of 6/30/19:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$191,424	\$203,944	\$218,935	\$237,551	\$262,261
	ULAE:	23,328	24,854	26,681	28,950	31,961
	Short-Term Loss and LAE:	\$214,752	\$228,798	\$245,616	\$266,501	\$294,222
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$1,093,695	\$1,165,227	\$1,250,878	\$1,357,235	\$1,498,418
	ULAE:	76,945	81,978	88,004	95,486	105,419
	Long-Term Loss and LAE:	\$1,170,640	\$1,247,205	\$1,338,882	\$1,452,721	\$1,603,837
<u>Total Liability</u>	Loss and ALAE:	\$1,285,119	\$1,369,171	\$1,469,813	\$1,594,786	\$1,760,679
	ULAE:	100,273	106,832	114,685	124,436	137,380
	Total Loss and LAE:	\$1,385,392	\$1,476,003	\$1,584,498	\$1,719,222	\$1,898,059
<u>Liabilities as of 6/30/20:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$151,850	\$161,782	\$173,674	\$188,441	\$208,043
	ULAE:	17,475	18,618	19,987	21,686	23,942
	Short-Term Loss and LAE:	\$169,325	\$180,400	\$193,661	\$210,127	\$231,985
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$973,778	\$1,037,467	\$1,113,727	\$1,208,423	\$1,334,126
	ULAE:	63,104	67,231	72,172	78,309	86,455
	Long-Term Loss and LAE:	\$1,036,882	\$1,104,698	\$1,185,899	\$1,286,732	\$1,420,581
<u>Total Liability</u>	Loss and ALAE:	\$1,125,628	\$1,199,249	\$1,287,401	\$1,396,864	\$1,542,169
	ULAE:	80,579	85,849	92,159	99,995	110,397
	Total Loss and LAE:	\$1,206,207	\$1,285,098	\$1,379,560	\$1,496,859	\$1,652,566

Note: Current (short term) liabilities are the portion of the total estimated liability shown on Appendix G that is expected to be paid out within the coming year. Totals may vary from Exhibit 1, due to rounding.

Novato Fire Protection District - Workers' Compensation

Discount Factors to be Applied to Overall Reserves

Accident Year	Full Value of Reserve at 6/30/19 (A)	Discount Factor (B)	Discounted Reserve at 6/30/19 (C)	Full Value of Reserve at 6/30/20 (D)	Discount Factor (E)	Discounted Reserve at 6/30/20 (F)
Prior	\$79,575	0.988	\$78,599	\$67,957	1.000	\$67,957
1999-2000	28,460	0.966	27,491	22,455	0.988	22,179
2000-2001	9,630	0.946	9,112	8,590	0.966	8,297
2001-2002	7,612	0.928	7,066	6,630	0.946	6,274
2002-2003	18,605	0.911	16,955	12,968	0.928	12,039
2003-2004	0	0.896	0	0	0.911	0
2004-2005	60,524	0.881	53,351	54,895	0.896	49,160
2005-2006	15,260	0.868	13,244	14,009	0.881	12,349
2006-2007	0	0.857	0	0	0.868	0
2007-2008	0	0.847	0	0	0.857	0
2008-2009	201,488	0.839	169,126	181,944	0.847	154,093
2009-2010	122,142	0.832	101,674	110,294	0.839	92,579
2010-2011	153,503	0.827	126,885	138,306	0.832	115,129
2011-2012	185,049	0.827	153,100	160,623	0.827	132,770
2012-2013	168,970	0.832	140,557	142,273	0.827	117,710
2013-2014	251,088	0.832	208,794	214,178	0.832	178,163
2014-2015	0	0.830	0	0	0.832	0
2015-2016	0	0.826	0	0	0.830	0
2016-2017	0	0.823	0	0	0.826	0
2017-2018	0	0.824	0	0	0.823	0
2018-2019	0	0.833	0	0	0.824	0
2019-2020	0	-	-	0	0.833	0
Totals	\$1,301,906		\$1,105,954	\$1,135,122		\$968,699

(G) Discount Factor at 6/30/19 for Overall Reserve: 0.849

(H) Discount Factor at 6/30/20 for Overall Reserve: 0.853

Notes:

- (A) From Appendix G, Outstanding Liability at 6/30/19.
- (B) Based on Appendix I, Page 2, Column (E).
- (C) (A) x (B).
- (D) From Appendix G, Outstanding Liability at 6/30/20.
- (E) Based on Appendix I, Page 2, Column (E).
- (F) (D) x (E).
- (G) Total of (C) / Total of (A).
- (H) Total of (F) / Total of (D).

This exhibit shows the expected impact of anticipated investment income on the liability for outstanding claims at the date of evaluation and the end of the current fiscal year. For example, if the discount factor in item (G) is 0.849, the discounted liability for outstanding claims is 84.9% of the full value.

Novato Fire Protection District - Workers' Compensation

Calculation of Discount Factors

Payment Year (A)	Payment Pattern (B)	Return on Investment (C)	Discounted Reserves (D)	Undiscounted Reserves (E)	Discount Factor (F)
22	12.7%	2.5%	0.126	0.127	0.988
21	1.3%	2.5%	0.136	0.141	0.966
20	1.3%	2.5%	0.146	0.154	0.946
19	1.3%	2.5%	0.155	0.167	0.928
18	1.2%	2.5%	0.164	0.180	0.911
17	1.3%	2.5%	0.172	0.192	0.896
16	1.4%	2.5%	0.182	0.206	0.881
15	1.4%	2.5%	0.191	0.220	0.868
14	1.7%	2.5%	0.203	0.237	0.857
13	1.9%	2.5%	0.216	0.255	0.847
12	2.3%	2.5%	0.233	0.278	0.839
11	2.4%	2.5%	0.252	0.302	0.832
10	2.7%	2.5%	0.272	0.329	0.827
9	4.3%	2.5%	0.308	0.372	0.827
8	5.9%	2.5%	0.359	0.431	0.832
7	5.5%	2.5%	0.404	0.486	0.832
6	5.9%	2.5%	0.453	0.545	0.830
5	5.4%	2.5%	0.495	0.599	0.826
4	6.1%	2.5%	0.544	0.661	0.823
3	8.8%	2.5%	0.617	0.748	0.824
2	13.6%	2.5%	0.736	0.884	0.833
1	11.6%	2.5%	0.833	1.000	0.833
(G) Discount Factor for Future Funding:				2019-2020	0.843
				2020-2021	0.843

Notes:

- (A) This is the year of payment relative to the accident year. For example, year 7 refers to payments made in the seventh year after the inception of the accident year. We assume that payments are made at midyear.
- (B) Percent of ultimate loss paid this year. This payment pattern is based on the paid loss development pattern selected in Appendix B, Page 2.
- (C) Assumed Investment Income Rates.
- (D) Discounted Reserves at the beginning of this year is next year's Discounted Reserves discounted one year plus this year's payments discounted six months. For example, in year 2, 73.6% = [61.7% / 1.025] + [13.6% / (1.012)].
- (E) Summation of future (B) values. This is the percent of ultimate loss unpaid at the beginning of the year.
- (F) (D) / (E).
- (G) (F) at year 1, with interest accumulated for six months. We assume that the required funding is deposited at the middle of the first year.

This exhibit shows the calculation of the effect of anticipated investment income on future claims costs. Thus, if the discount factor in item (F) is 0.84, on a discounted basis, \$0.84 must be budgeted for every \$1 that will actually be paid on claims that will be incurred in the next fiscal year.

Novato Fire Protection District - Workers' Compensation

Confidence Level Table

Probability	Projected Losses	Outstanding Losses
95%	3.341	1.844
90%	2.339	1.592
85%	1.828	1.442
80%	1.495	1.329
75%	1.253	1.238
70%	1.065	1.162
65%	0.912	1.094
60%	0.785	1.033
55%	0.675	0.978
50%	0.580	0.924
45%	0.496	0.874
40%	0.421	0.825
35%	0.353	0.777
30%	0.291	0.728
25%	0.234	0.677

To read table: For the above retention, there is a 90% chance that final loss settlements will be less than 2.339 times the average expected amount of losses.

This exhibit shows the loads that must be applied to bring estimated losses at the expected level to the various indicated confidence levels.

Novato Fire Protection District - Workers' Compensation

Program History

Policy Year Start Date	Policy Year End Date	Policy Year	Self-Insured Retention	
			Per Occurrence	Aggregate
7/1/1987	6/30/1999	Prior	\$275,000	(none)
7/1/1999	6/30/2000	1999-2000	275,000	(none)
7/1/2000	6/30/2001	2000-2001	275,000	(none)
7/1/2001	6/30/2002	2001-2002	300,000	(none)
7/1/2002	6/30/2003	2002-2003	1,000,000	(none)
7/1/2003	6/30/2004	2003-2004	1,000,000	(none)
7/1/2004	6/30/2005	2004-2005	1,000,000	(none)
7/1/2005	6/30/2006	2005-2006	1,000,000	(none)
7/1/2006	6/30/2007	2006-2007	1,000,000	(none)
7/1/2007	6/30/2008	2007-2008	1,000,000	(none)
7/1/2008	6/30/2009	2008-2009	1,000,000	(none)
7/1/2009	6/30/2010	2009-2010	1,000,000	(none)
7/1/2010	6/30/2011	2010-2011	1,000,000	(none)
7/1/2011	6/30/2012	2011-2012	1,000,000	(none)
7/1/2012	6/30/2013	2012-2013	1,000,000	(none)
7/1/2013	6/30/2014	2013-2014	1,250,000	(none)

Third Party Claims Administrator	Begin Date	End Date
Athens	7/1/1987	Current

This exhibit summarizes some of the key facts about the history of the program.

Novato Fire Protection District - Workers' Compensation

Incurred Losses as of 6/30/19

Accident Year (A)	Unlimited Incurred (B)	Additions to Losses (C)	Subtractions from Losses (D)	Adjusted Incurred (E)	Incurred Over SIR (F)	Incurred Over \$100,000 (G)	Incurred Capped at \$100,000 (H)	Incurred \$100,000 to SIR Layer (I)	Incurred Capped at SIR (J)	Incurred Capped at SIR & Aggregate (K)
Prior	\$4,333,661	\$0	\$20,361	\$4,313,299	\$0	\$769,601	\$3,543,698	\$769,601	\$4,313,299	\$4,313,299
1999-2000	435,295	0	0	435,295	0	116,070	319,226	116,070	435,295	435,295
2000-2001	566,023	0	0	566,023	5,667	225,797	340,226	220,129	560,355	560,355
2001-2002	1,063,482	0	694	1,062,787	0	468,862	593,926	468,862	1,062,787	1,062,787
2002-2003	177,091	0	0	177,091	0	0	177,091	0	177,091	177,091
2003-2004	2,004,301	0	0	2,004,301	0	1,569,106	435,196	1,569,106	2,004,301	2,004,301
2004-2005	198,932	0	0	198,932	0	0	198,932	0	198,932	198,932
2005-2006	257,533	0	0	257,533	0	0	257,533	0	257,533	257,533
2006-2007	492,982	0	0	492,982	0	222,562	270,420	222,562	492,982	492,982
2007-2008	92,328	0	0	92,328	0	0	92,328	0	92,328	92,328
2008-2009	600,065	0	0	600,065	0	171,227	428,838	171,227	600,065	600,065
2009-2010	623,176	0	0	623,176	0	193,278	429,898	193,278	623,176	623,176
2010-2011	540,006	0	0	540,006	0	202,417	337,589	202,417	540,006	540,006
2011-2012	569,753	0	0	569,753	0	194,221	375,532	194,221	569,753	569,753
2012-2013	289,942	0	0	289,942	0	69,581	220,362	69,581	289,942	289,942
2013-2014	435,908	0	0	435,908	0	45,881	390,027	45,881	435,908	435,908
Total	\$12,680,477	\$0	\$21,055	\$12,659,422	\$5,667	\$4,248,601	\$8,410,821	\$4,242,934	\$12,653,755	\$12,653,755

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District.
- (C)
- (D) Recoveries.
- (E) (B) + (C) - (D).
- (F) Sum of incurred losses in excess of SIR.
- (G) Sum of incurred losses in excess of \$100,000.
- (H) (E) - (G).
- (I) (G) - (F).
- (J) (E) - (F).
- (K) Minimum of (J) and the aggregate stop loss. See Appendix K.

Novato Fire Protection District - Workers' Compensation

Paid Losses as of 6/30/19

Accident Year (A)	Unlimited Paid (B)	Additions to Losses (C)	Subtractions from Losses (D)	Adjusted Paid (E)	Paid Over SIR (F)	Paid Over \$100,000 (G)	Paid Capped at \$100,000 (H)	Paid \$100,000 to SIR Layer (I)	Paid Capped at SIR (J)	Paid Capped at SIR & Aggregate (K)
Prior	\$4,263,787	\$0	\$20,361	\$4,243,425	\$0	\$751,241	\$3,492,185	\$751,241	\$4,243,425	\$4,243,425
1999-2000	410,540	0	0	410,540	0	116,070	294,471	116,070	410,540	410,540
2000-2001	558,037	0	0	558,037	5,667	225,797	332,240	220,129	552,370	552,370
2001-2002	1,057,082	0	694	1,056,388	0	462,462	593,926	462,462	1,056,388	1,056,388
2002-2003	162,395	0	0	162,395	0	0	162,395	0	162,395	162,395
2003-2004	2,004,301	0	0	2,004,301	0	1,569,106	435,196	1,569,106	2,004,301	2,004,301
2004-2005	156,476	0	0	156,476	0	0	156,476	0	156,476	156,476
2005-2006	247,740	0	0	247,740	0	0	247,740	0	247,740	247,740
2006-2007	492,982	0	0	492,982	0	222,562	270,420	222,562	492,982	492,982
2007-2008	92,328	0	0	92,328	0	0	92,328	0	92,328	92,328
2008-2009	466,512	0	0	466,512	0	52,400	414,112	52,400	466,512	466,512
2009-2010	587,858	0	0	587,858	0	171,960	415,898	171,960	587,858	587,858
2010-2011	478,497	0	0	478,497	0	174,483	304,014	174,483	478,497	478,497
2011-2012	526,951	0	0	526,951	0	151,419	375,532	151,419	526,951	526,951
2012-2013	207,030	0	0	207,030	0	18,928	188,102	18,928	207,030	207,030
2013-2014	410,912	0	0	410,912	0	45,881	365,031	45,881	410,912	410,912
Total	\$12,123,429	\$0	\$21,055	\$12,102,373	\$5,667	\$3,962,308	\$8,140,066	\$3,956,640	\$12,096,706	\$12,096,706

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District.
- (C)
- (D) Recoveries.
- (E) (B) + (C) - (D).
- (F) Sum of paid losses in excess of SIR.
- (G) Sum of paid losses in excess of \$100,000.
- (H) (E) - (G).
- (I) (G) - (F).
- (J) (E) - (F).
- (K) Minimum of (J) and the aggregate stop loss. See Appendix K.

Novato Fire Protection District - Workers' Compensation

Case Reserves as of 6/30/19

Accident Year (A)	Unlimited Reserves (B)	Additions to Losses (C)	Subtractions from Losses (D)	Adjusted Reserves (E)	Reserves Over SIR (F)	Reserves Over \$100,000 (G)	Reserves Capped at \$100,000 (H)	Reserves Capped at \$100,000 to SIR Layer (I)	Reserves Capped at SIR (J)	Reserves Capped at SIR & Aggregate (K)
Prior	\$69,874	\$0	\$0	\$69,874	\$0	\$18,360	\$51,514	\$18,360	\$69,874	\$69,874
1999-2000	24,755	0	0	24,755	0	0	24,755	0	24,755	24,755
2000-2001	7,985	0	0	7,985	0	0	7,985	0	7,985	7,985
2001-2002	6,400	0	0	6,400	0	6,400	0	6,400	6,400	6,400
2002-2003	14,695	0	0	14,695	0	0	14,695	0	14,695	14,695
2003-2004	0	0	0	0	0	0	0	0	0	0
2004-2005	42,456	0	0	42,456	0	0	42,456	0	42,456	42,456
2005-2006	9,793	0	0	9,793	0	0	9,793	0	9,793	9,793
2006-2007	0	0	0	0	0	0	0	0	0	0
2007-2008	0	0	0	0	0	0	0	0	0	0
2008-2009	133,553	0	0	133,553	0	118,827	14,726	118,827	133,553	133,553
2009-2010	35,318	0	0	35,318	0	21,318	14,000	21,318	35,318	35,318
2010-2011	61,509	0	0	61,509	0	27,934	33,575	27,934	61,509	61,509
2011-2012	42,802	0	0	42,802	0	42,802	0	42,802	42,802	42,802
2012-2013	82,913	0	0	82,913	0	50,653	32,260	50,653	82,913	82,913
2013-2014	24,995	0	0	24,995	0	0	24,995	0	24,995	24,995
Total	\$557,049	\$0	\$0	\$557,049	\$0	\$286,294	\$270,755	\$286,294	\$557,049	\$557,049

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Appendix L, Page 1, Column (B) - Appendix L, Page 2, Column (B).
- (C) Appendix L, Page 1, Column (C) - Appendix L, Page 2, Column (C).
- (D) Appendix L, Page 1, Column (D) - Appendix L, Page 2, Column (D).
- (E) (B) + (C) - (D).
- (F) Sum of case reserves in excess of SIR.
- (G) Sum of case reserves in excess of \$100,000.
- (H) (E) - (G).
- (I) (G) - (F).
- (J) (E) - (F).
- (K) Minimum of (J) and the aggregate stop loss. See Appendix K.

Novato Fire Protection District - Workers' Compensation

Claim Counts as of 6/30/19

Accident Year (A)	Reported Claims (B)	Additions to Reported Claims (C)	Subtractions from Reported Claims (D)	Adjusted Reported Claims (E)	Closed Claims (F)	Additions to Closed Claims (G)	Subtractions from Closed Claims (H)	Adjusted Closed Claims (I)	Open Claims (J)	Adjusted Open Claims (K)
Prior	400	0	33	367	395	0	33	362	5	5
1999-2000	31	0	0	31	29	0	0	29	2	2
2000-2001	28	0	2	26	27	0	2	25	1	1
2001-2002	25	0	1	24	24	0	1	23	1	1
2002-2003	30	0	0	30	29	0	0	29	1	1
2003-2004	35	0	4	31	35	0	4	31	0	0
2004-2005	25	0	5	20	24	0	5	19	1	1
2005-2006	29	0	2	27	28	0	2	26	1	1
2006-2007	25	0	2	23	25	0	2	23	0	0
2007-2008	20	0	2	18	20	0	2	18	0	0
2008-2009	24	0	1	23	22	0	1	21	2	2
2009-2010	27	0	1	26	25	0	1	24	2	2
2010-2011	25	0	6	19	23	0	6	17	2	2
2011-2012	24	0	5	19	23	0	5	18	1	1
2012-2013	24	0	1	23	22	0	1	21	2	2
2013-2014	34	0	4	30	33	0	4	29	1	1
Total	806	0	69	737	784	0	69	715	22	22

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District.
- (C)
- (D) Closed claims with no payment
- (E) (B) + (C) - (D).
- (F) Provided by the District.
- (G)
- (H) Closed claims with no payment
- (I) (F) + (G) - (H).
- (J) (B) - (F).
- (K) (E) - (I).

Novato Fire Protection District - Workers' Compensation

Exposure Measures

Accident Year	Total Payroll (\$00) (A)	Inflation Trend Factor (B)	Trended Payroll (\$00) (C)
2005-2006	87,368	1.413	123,451
2006-2007	97,871	1.379	134,964
2007-2008	118,242	1.345	159,035
2008-2009	126,628	1.312	166,136
2009-2010	114,621	1.280	146,715
2010-2011	100,374	1.249	125,367
2011-2012	103,342	1.219	125,974
2012-2013	104,205	1.189	123,900
2013-2014	106,615	1.160	123,673
2014-2015			

Notes:

- (A) Provided by the District.
- (B) Based on WCIRB.
- (C) (A) x (B).