



Actuarial Review of the Self-Insured Workers' Compensation Program

Outstanding Liabilities as of June 30, 2014

Presented to
Novato Fire Protection District

September 17, 2014



Wednesday, September 17, 2014

Mr. Dan Hom
Finance Director
Novato Fire Protection District
95 Rowland Way
Novato, California 94945

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

Dear Mr. Hom:

As you requested, we have completed our review of Novato Fire Protection District's self-insured workers' compensation program. Assuming an SIR of \$1,250,000 per occurrence, we estimate the program's liability for outstanding claims to be \$3,924,000 as of June 30, 2014. This amount 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 \$3,924,000 estimate is the minimum liability to be booked by the District at June 30, 2014 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, 2014 are summarized in the table below.

Novato Fire Protection District
 Self-Insured Workers' Compensation Program
 Estimated Liability for Unpaid Loss and ALAE
 at June 30, 2014

	Expected	Marginally Acceptable 70% CL	Recommended Range			Conservative 90% CL
			Low 75% CL	Target 80% CL	High 85% CL	
Loss and ALAE	\$4,391,000					
ULAE	330,000					
Investment Income Offset	(797,000)					
Discounted Loss and LAE	\$3,924,000	\$4,454,000	\$4,689,000	\$4,964,000	\$5,309,000	\$5,768,000

GASB #10 does not address an actual funding 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 margin for contingencies. Generally, the amount should be sufficient to bring funding to the 75% to 85% confidence level for primary programs. We consider funding to the 70% confidence level to be marginally acceptable and funding 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 Mike Harrington at (916) 244-1162 with any questions you may have concerning this report.

Sincerely,

Bickmore



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Associate, Casualty Actuarial Society
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I. BACKGROUND

Novato Fire Protection District began its self-insured workers' compensation program on July 1, 1987. Its current self-insured retention is \$1,250,000, and excess coverage is provided by Safety National. 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, 2014.

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, 2014. 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) is \$4,721,000 as of June 30, 2014. 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).

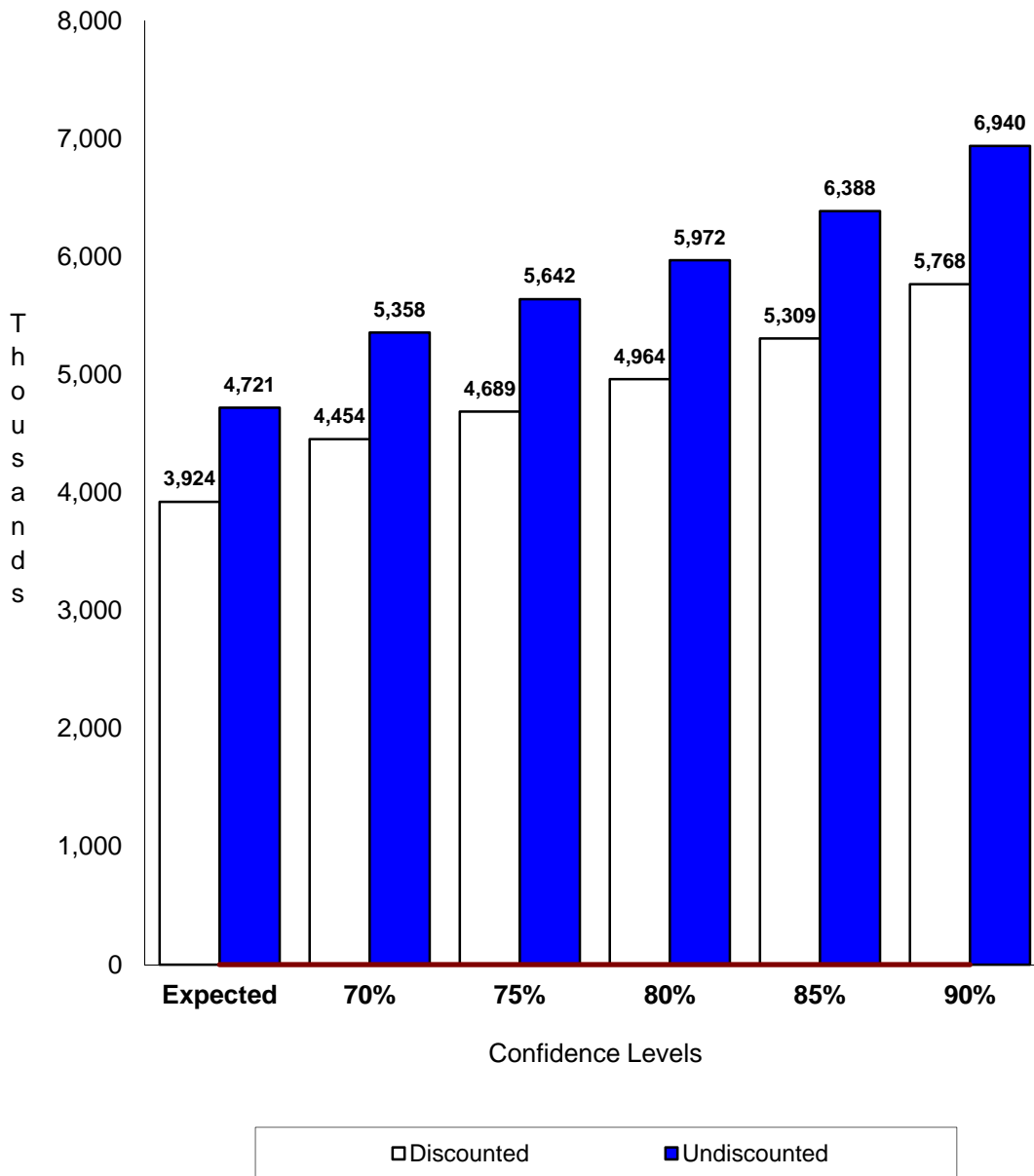
There is some measure of uncertainty associated with our best estimate because of the random nature of much of the process that determines ultimate claims costs. For this reason, we generally recommend that a program such as this include some funding margin for the possibility that actual loss costs 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 17% if the program is funded within the range indicated in the graphs, resulting in a discounted liability for outstanding claims of \$3,924,000 as of June 30, 2014.

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.

Graph 1

Novato Fire Protection District-
Workers' Compensation
Outstanding Liability (\$000's)
at June 30, 2014



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, 2014, before recognition of investment income.

Novato Fire Protection District
Self-Insured Workers' Compensation Program
Estimated Liability for Unpaid Loss and LAE at June 30, 2014

Year	Case Reserves	IBNR Reserves	Total Outstanding
Prior	\$8,686	\$1,779	\$10,465
1994-95	30,609	4,322	34,931
1995-96	19,862	1,614	21,476
1996-97	51,916	10,183	62,099
1997-98	13,513	10,136	23,649
1998-99	5,575	29,182	34,757
1999-00	9,800	16,297	26,097
2000-01	5,040	27,312	32,352
2001-02	26,668	67,807	94,475
2002-03	20,084	18,909	38,993
2003-04	274,290	51,841	326,131
2004-05	47,098	17,480	64,578
2005-06	18,231	65,543	83,774
2006-07	257,982	79,498	337,480
2007-08	0	42,672	42,672
2008-09	241,223	131,196	372,419
2009-10	118,961	259,689	378,650
2010-11	109,796	291,407	401,203
2011-12	199,636	342,040	541,676
2012-13	126,517	492,680	619,197
2013-14	60,865	783,069	843,934
Loss and ALAE	\$1,646,352	\$2,744,656	\$4,391,008
ULAE		330,023	330,023
Total	\$1,646,352	\$3,074,679	\$4,721,031

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 funding requirements. They do, however, allow a range of funded amounts to be recognized for accounting purposes; specifically, GASB #10 and #30 which allow recognition of a funding 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 margin for unexpected adverse loss experience.

The amount of the margin should be a question of long-term funding policy. We recommend that the margin be determined by thinking in terms of the probability that a given level of funding will prove to be adequate. For example, a reasonable goal might be to maintain a fund 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 fund at a low confidence level, the chances are much greater that future events will prove that additional contributions should have been made for current claims. The additional contributions for years by that time long past may be required at the same time that costs are increasing dramatically on then-current claims. The burden of funding increases on past years as well as on current years, may well be prohibitive.

We generally recommend maintaining program funding 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 funding will be sufficient to meet claim liabilities, yet the required 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 margin for the most part, which means that it is also reasonable to think of the liabilities as being stated 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.

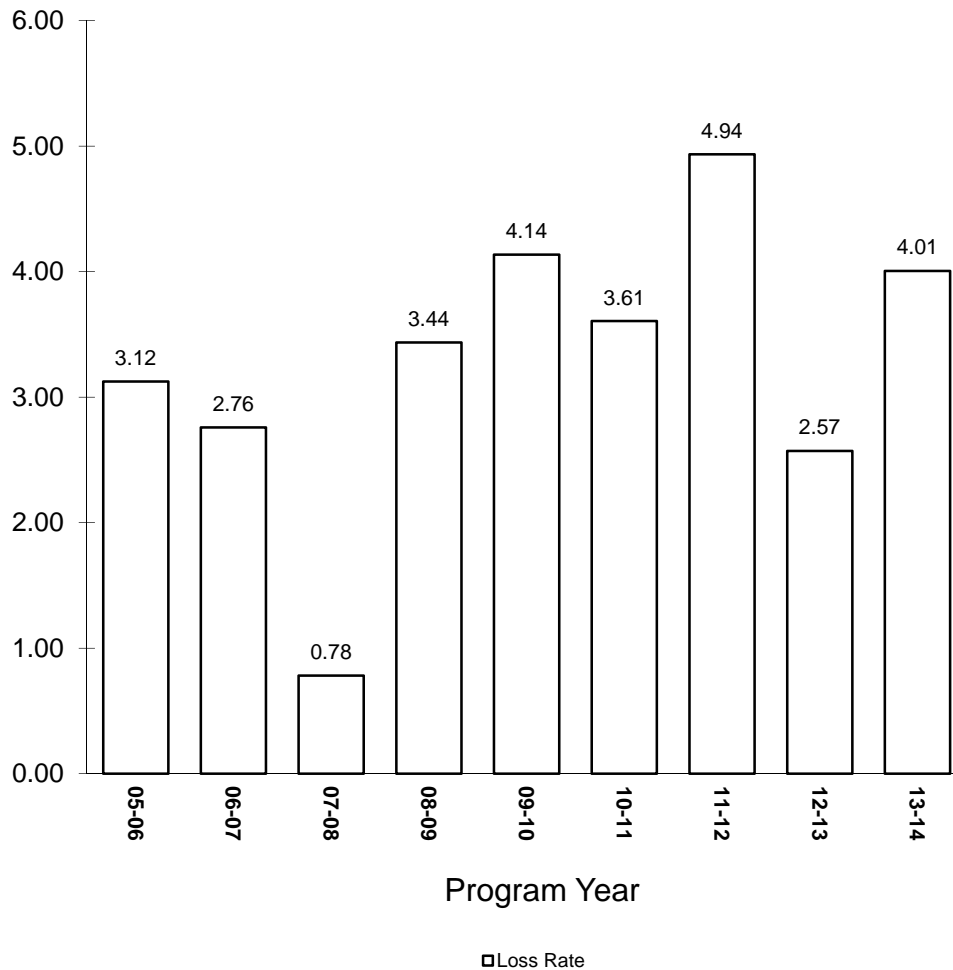
In general, we recommend that you fund each year's claims costs in that year. When surpluses or deficiencies have developed on outstanding liabilities and funding adjustments are necessary, they should be clearly identified as such so that the habit of funding each year's claims costs that year is maintained.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

C. HISTORICAL TRENDS IN THE SELF-INSURANCE PROGRAM

The loss rate (based on losses limited to \$100,000 per occurrence) has varied over the last nine years, ranging from a high of \$4.94 per \$100 of payroll for the 2011-12 program year, to a low of \$0.78 per \$100 of payroll for the 2007-08 program year. See graph below.

Graph 2

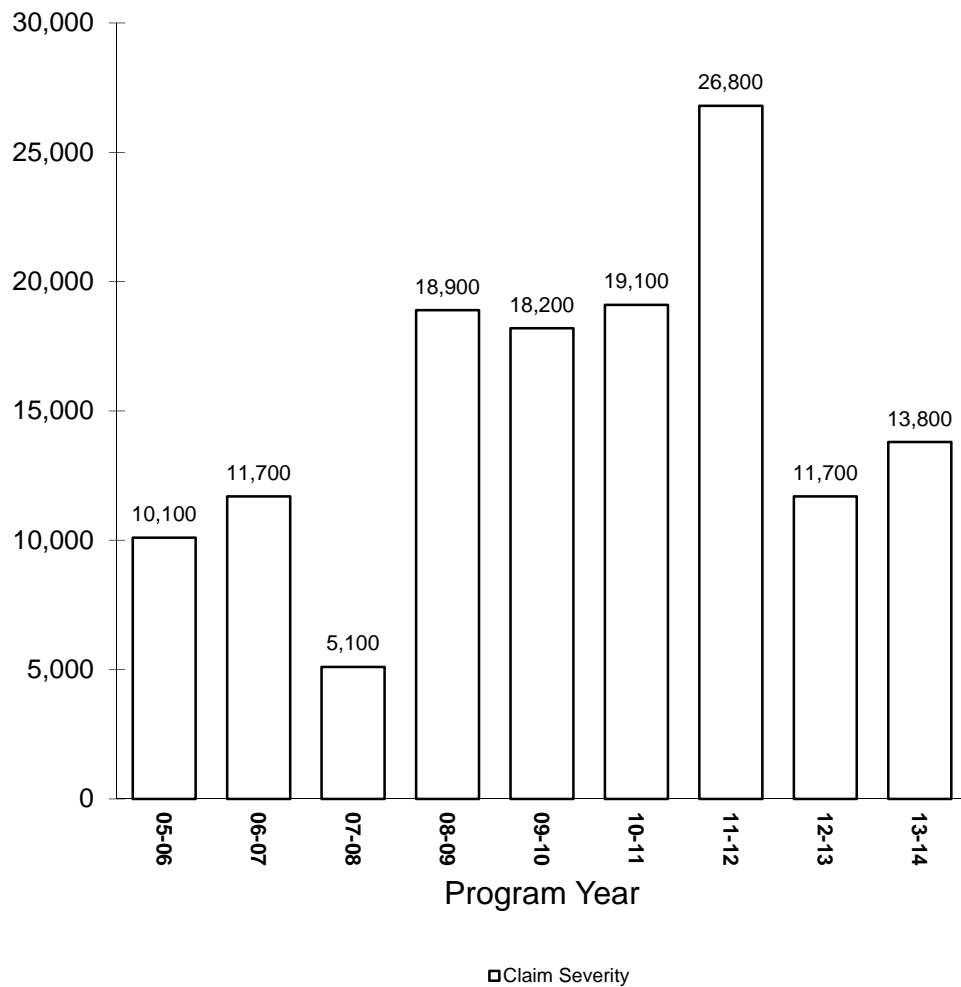
Novato Fire Protection District-
Workers' Compensation
Dollars of Loss per
\$100 of Payroll



The average dollars of loss per claim (based on losses limited to \$100,000 per occurrence) has also varied over the last nine years, ranging from a high of \$26,800 per claim for the 2011-12 program year to a low of \$5,100 per claim for the 2007-08 program year. See graph below.

Graph 3

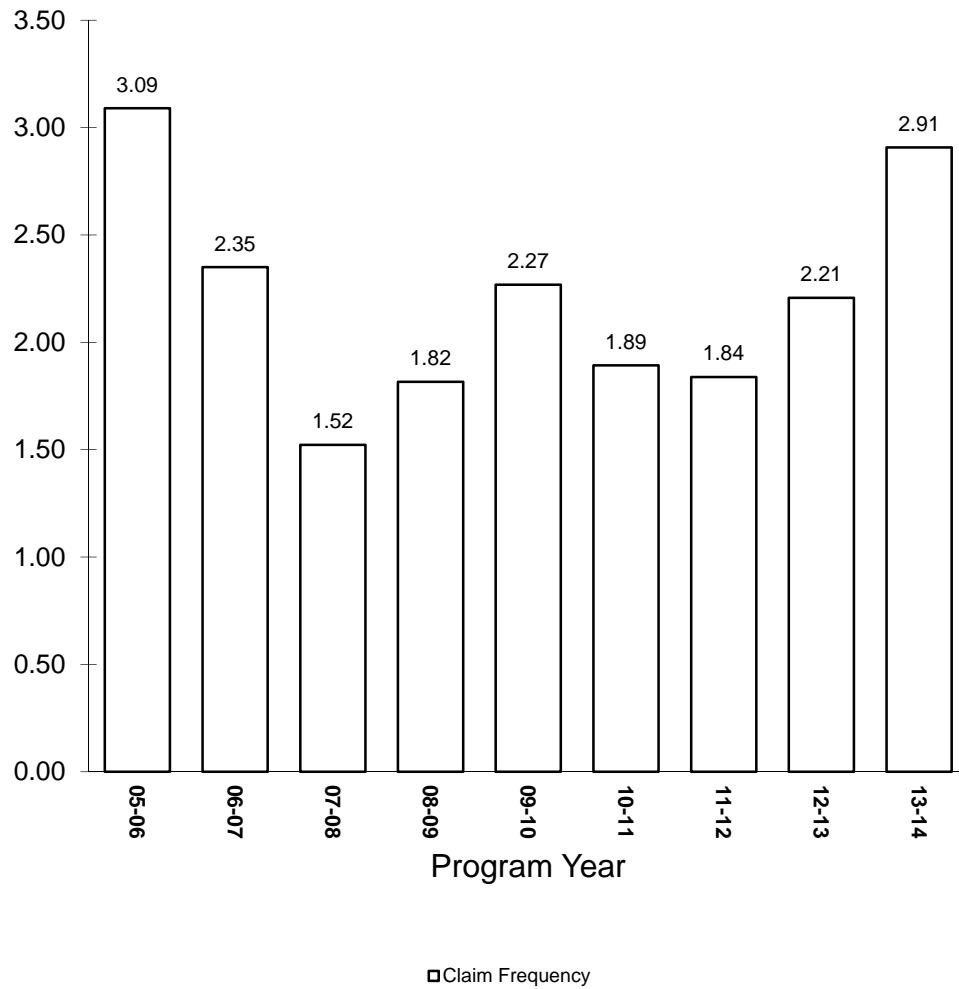
Novato Fire Protection District -
Workers' Compensation
Dollars of Loss per Claim



The frequency has followed an increasing trend from the 2007-08 program year to the 2013-14 program year. See graph below.

Graph 4

Novato Fire Protection District -
Workers' Compensation
Number of Claims per
\$1 Million of Payroll



D. 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 received loss data evaluated as of 6/30/10, 6/30/11, 6/30/12, 6/30/13, and 6/30/14 (See Appendix M).
- We estimated ULAE at 7.5% of outstanding loss as of June 30, 2014.

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 California 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 the participants of other 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 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 cost 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 0.5% per year. We have assumed that claim severity increases at 2.5% per year, and that claim frequency decreases 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, 2014

(A) Estimated Ultimate Losses Incurred through 6/30/14: (From Appendix F)	\$15,269,000
(B) Estimated Paid Losses through 6/30/14: (From Appendix F)	10,878,000
(C) Estimated Liability for Claims Outstanding at 6/30/14: (From Appendix F)	<u>\$4,391,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 6/30/14: (From Not Included)	330,000
(E) Total Outstanding Liability for Claims at 6/30/14: ((C) + (D))	<u>\$4,721,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.5%. (Appendix H, Page 1, (G))	0.831
(G) Discounted Outstanding Liability for Claims at 6/30/14: ((E) x (F))	<u>\$3,924,000</u>

	Marginally Acceptable	75%	Recommended 80%	85%	Conservative 90%
Confidence Level of Adequacy:	70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Appendix I)	1.135	1.195	1.265	1.353	1.470
(I) Margin for Adverse Experience: ((G) x [(H) - 1])	530,000	765,000	1,040,000	1,385,000	1,844,000
(J) Total Required Available Funding at 6/30/14: ((G) + (I))	<u>\$4,454,000</u>	<u>\$4,689,000</u>	<u>\$4,964,000</u>	<u>\$5,309,000</u>	<u>\$5,768,000</u>

Novato Fire Protection District - Workers' Compensation

IBNR as of 6/30/15 at Expected Claims Level

Accident Year	Estimated Ultimate (A)	Reported as of 6/30/14 (B)	Estimated IBNR as of 6/30/14 (C)	Estimated Percent of IBNR Reported Between 7/1/14 and 6/30/15 (D)	Estimated IBNR Reported (E)	Estimated IBNR as of 6/30/15 (F)
Prior	\$1,783,000	\$1,781,221	\$1,779	42.7%	\$1,000	\$779
1994-1995	388,000	383,678	4,322	29.8%	1,000	3,322
1995-1996	121,000	119,386	1,614	22.8%	0	1,614
1996-1997	603,000	592,817	10,183	23.2%	2,000	8,183
1997-1998	461,000	450,864	10,136	25.7%	3,000	7,136
1998-1999	968,000	938,818	29,182	25.2%	7,000	22,182
1999-2000	430,000	413,703	16,297	21.8%	4,000	12,297
2000-2001	580,000	552,688	27,312	17.7%	5,000	22,312
2001-2002	1,140,000	1,072,193	67,807	21.2%	14,000	53,807
2002-2003	196,000	177,091	18,909	30.3%	6,000	12,909
2003-2004	2,034,000	1,982,159	51,841	18.1%	9,000	42,841
2004-2005	216,000	198,520	17,480	17.4%	3,000	14,480
2005-2006	329,000	263,457	65,543	16.3%	11,000	54,543
2006-2007	830,000	750,502	79,498	16.0%	13,000	66,498
2007-2008	135,000	92,328	42,672	15.3%	7,000	35,672
2008-2009	742,000	610,804	131,196	15.0%	20,000	111,196
2009-2010	918,000	658,311	259,689	14.5%	38,000	221,689
2010-2011	827,000	535,593	291,407	18.9%	55,000	236,407
2011-2012	894,000	551,960	342,040	18.4%	63,000	279,040
2012-2013	698,000	205,320	492,680	22.5%	111,000	381,680
2013-2014	976,000	192,931	783,069	24.3%	190,000	593,069
				25.2%	0	0
Totals	\$15,269,000	\$12,524,344	\$2,744,656		\$563,000	\$2,181,656

Notes:

- (A) From Exhibit 3, Not Included.
 (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 7/1/14 and 6/30/15. 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 6/30/15. 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	\$1,793,690	\$1,866,479	\$0	\$0	\$1,865,667	\$1,783,393
1994-1995	387,515	378,490			405,666	388,000
1995-1996	120,938	107,784			158,144	121,000
1996-1997	602,895	592,287			723,044	603,000
1997-1998	461,234	483,710			494,026	461,000
1998-1999	967,921	1,044,299			925,412	968,000
1999-2000	430,251	457,622			406,069	430,000
2000-2001	579,770	628,700			463,736	580,000
2001-2002	1,139,741	1,228,492			870,480	1,140,000
2002-2003	193,560	198,300			309,630	196,000
2003-2004	2,010,826	2,057,780			755,098	2,034,000
2004-2005	227,107	205,480			368,260	216,000
2005-2006	310,089	347,976	338,163	392,147	497,934	329,000
2006-2007	914,111	746,168	840,964	664,348	505,402	830,000
2007-2008	117,072	152,157	129,765	162,056	177,354	135,000
2008-2009	812,980	671,529	824,258	755,341	857,394	742,000
2009-2010	928,219	1,109,443	908,077	980,518	750,308	918,000
2010-2011	834,989	1,004,881	819,397	881,148	603,421	827,000
2011-2012	984,145	996,020	909,764	878,842	631,959	894,000
2012-2013	473,468	283,927	693,660	701,738	839,132	698,000
2013-2014	766,129	1,197,574	936,206	1,016,444	1,332,225	976,000
Totals						\$15,269,393

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 Exhibit 4, Page 1, Line .
- (H) From Exhibit 4, 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	\$1,528,422	\$1,539,057	\$0	\$0	\$1,519,329	\$1,519,306
1994-1995	312,657	284,320			313,007	313,000
1995-1996	120,580	101,614			120,992	121,000
1996-1997	548,517	502,349			548,998	549,000
1997-1998	376,114	367,397			372,008	372,000
1998-1999	704,099	715,165			691,641	691,649
1999-2000	303,884	299,058			301,010	301,000
2000-2001	340,539	342,256			340,990	341,000
2001-2002	620,225	624,064			619,992	620,000
2002-2003	182,935	166,427			183,000	183,000
2003-2004	451,733	465,660			435,209	435,196
2004-2005	207,255	163,687			207,000	207,000
2005-2006	276,893	268,277	276,835	268,706	272,997	273,000
2006-2007	285,897	299,666	285,088	296,698	269,974	269,969
2007-2008	98,699	104,515	98,332	103,135	92,322	92,328
2008-2009	438,569	431,818	438,267	432,457	434,999	435,000
2009-2010	479,557	468,905	474,773	461,136	370,890	474,000
2010-2011	362,183	361,696	364,097	365,838	290,529	362,000
2011-2012	531,719	446,102	512,046	427,616	296,419	510,000
2012-2013	267,121	132,862	296,371	239,226	383,341	268,000
2013-2014	376,601	523,245	401,499	451,757	573,004	427,000
Totals						\$8,764,448

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 Exhibit 4, Page 1, Line / Line .
- (H) From Exhibit 4, 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

Selection of Projected Limited Loss Rate
and Projection of Program Losses and ULAE

Accident Year	Ultimate Limited Losses (A)	Trend Factor (B)	Trended Limited Losses (C)	Trended Payroll (\$00) (D)	Trended Limited Loss Rate (E)
2005-2006	273,000	1.758	479,934	109,123	4.398
2006-2007	269,969	1.650	445,449	119,305	3.734
2007-2008	92,328	1.518	140,154	140,590	0.997
2008-2009	435,000	1.401	609,435	146,889	4.149
2009-2010	474,000	1.269	601,506	129,751	4.636
2010-2011	362,000	1.208	437,296	110,813	3.946
2011-2012	510,000	1.208	616,080	111,299	5.535
2012-2013	268,000	1.153	309,004	109,519	2.821
2013-2014	427,000	1.061	453,047	109,280	4.146
Totals	\$3,111,297		\$4,091,905	\$1,086,569	\$3.766
09/10-13/14	2,041,000		2,416,933	570,662	4.235
10/11-13/14	1,567,000		1,815,427	440,911	4.117
			(F) Selected Limited Rate:		\$4.230

Novato Fire Protection District - Workers' Compensation

Selection of Projected Limited Loss Rate
and Projection of Program Losses and ULAE

Notes:

- (A) From Exhibit 3, Page 2, Column (F).
For purposes of projecting future losses, losses are capped at \$100,000 per occurrence.
- (B) From Appendix E, Column (B).
- (C) $(A) \times (B)$.
- (D) From Appendix L, Column (C).
- (E) $(C) / (D)$.
- (F) Selected based on (E).
- (G) Based on a Weibull distribution, a mathematical model of claim sizes.
- (H) From Appendix E.
- (I) $(F) \times (G) \times (H)$.
- (J) From Appendix L, Column (C).
- (K) $(I) \times (J)$.
- (L) Based on an estimated claim closing pattern and the District's historical claims administration expenses.
- (M) $(K) + (L)$.

This exhibit shows the calculation of future loss costs based on the past loss rates per \$100 of payroll. The projections will be accurate only to the extent that what has happened in the past is representative of what will happen in the future.

Novato Fire Protection District - Workers' Compensation

Reported Loss Development

Accident Year (A)	Limited Reported Losses as of 6/30/14 (B)	Reported Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Reported Losses of 6/30/14 (E)	Reported Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$1,519,306	1.006	\$1,528,422	\$1,781,221	1.007	\$1,793,690
1994-1995	310,176	1.008	312,657	383,678	1.010	387,515
1995-1996	119,386	1.010	120,580	119,386	1.013	120,938
1996-1997	542,013	1.012	548,517	592,817	1.017	602,895
1997-1998	370,556	1.015	376,114	450,864	1.023	461,234
1998-1999	691,649	1.018	704,099	938,818	1.031	967,921
1999-2000	297,634	1.021	303,884	413,703	1.040	430,251
2000-2001	332,558	1.024	340,539	552,688	1.049	579,770
2001-2002	603,332	1.028	620,225	1,072,193	1.063	1,139,741
2002-2003	177,091	1.033	182,935	177,091	1.093	193,560
2003-2004	435,196	1.038	451,733	247,127	1.116	2,010,826
2004-2005	198,520	1.044	207,255	198,520	1.144	227,107
2005-2006	263,457	1.051	276,893	263,457	1.177	310,089
2006-2007	269,969	1.059	285,897	750,502	1.218	914,111
2007-2008	92,328	1.069	98,699	92,328	1.268	117,072
2008-2009	406,082	1.080	438,569	610,804	1.331	812,980
2009-2010	439,557	1.091	479,557	658,311	1.410	928,219
2010-2011	327,175	1.107	362,183	535,593	1.559	834,989
2011-2012	461,963	1.151	531,719	551,960	1.783	984,145
2012-2013	205,320	1.301	267,121	205,320	2.306	473,468
2013-2014	192,931	1.952	376,601	192,931	3.971	766,129
Totals	\$8,256,199		\$8,814,199	\$10,789,312		\$15,056,650

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

Limited Losses Reported as of:

Accident Year	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1993-1994										
1994-1995										
1995-1996										
1996-1997										
1997-1998										
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	
2006-2007				199,119	199,163	195,834	191,002	269,969		
2007-2008			90,329	103,531	101,166	92,328	92,328			
2008-2009		251,445	320,622	316,228	334,158	406,082				
2009-2010	232,664	366,450	405,916	439,557	439,557					
2010-2011	83,426	313,206	322,614	327,175						
2011-2012	394,274	400,745	461,963							
2012-2013	143,788	205,320								
2013-2014	192,931									

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
1993-1994										
1994-1995										
1995-1996										
1996-1997										
1997-1998										
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	
2005-2006					0.961	1.022	1.018	1.000		
2006-2007				1.000	0.983	0.975	1.413			
2007-2008			1.146	0.977	0.913	1.000				
2008-2009		1.275	0.986	1.057	1.215					
2009-2010	1.575	1.108	1.083	1.000						
2010-2011	3.754	1.030	1.014							
2011-2012	1.016	1.153								
2012-2013	1.428									
Average Dollar-weighted Averages	1.943	1.142	1.057	1.009	1.018	1.044	1.134	1.006	1.035	0.993
3-yr	1.479	1.102	1.032	1.018	1.094	1.002	1.163	1.005	1.028	1.000
4-yr	1.505	1.135	1.041	1.015	1.055	1.040	1.096	1.004	1.016	0.994
Industry Factors Prior	1.470	1.120	1.025	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Selected	1.500	1.130	1.040	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Cumulated	1.952	1.301	1.151	1.107	1.091	1.080	1.069	1.059	1.051	1.044

Novato Fire Protection District - Workers' Compensation

Paid Loss Development

Accident Year (A)	Limited Paid Losses as of 6/30/14 (B)	Paid Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Paid Losses of 6/30/14 (E)	Paid Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$1,519,306	1.013	\$1,539,057	\$1,772,535	1.053	\$1,866,479
1994-1995	279,567	1.017	284,320	353,069	1.072	378,490
1995-1996	99,524	1.021	101,614	99,524	1.083	107,784
1996-1997	490,097	1.025	502,349	540,901	1.095	592,287
1997-1998	357,043	1.029	367,397	437,351	1.106	483,710
1998-1999	691,649	1.034	715,165	933,243	1.119	1,044,299
1999-2000	287,833	1.039	299,058	403,903	1.133	457,622
2000-2001	327,518	1.045	342,256	547,648	1.148	628,700
2001-2002	593,217	1.052	624,064	1,045,525	1.175	1,228,492
2002-2003	157,007	1.060	166,427	157,007	1.263	198,300
2003-2004	435,196	1.070	465,660	247,127	1.306	2,057,780
2004-2005	151,422	1.081	163,687	151,422	1.357	205,480
2005-2006	245,226	1.094	268,277	245,226	1.419	347,976
2006-2007	269,969	1.110	299,666	492,520	1.515	746,168
2007-2008	92,328	1.132	104,515	92,328	1.648	152,157
2008-2009	369,391	1.169	431,818	369,581	1.817	671,529
2009-2010	385,613	1.216	468,905	539,350	2.057	1,109,443
2010-2011	283,239	1.277	361,696	425,797	2.360	1,004,881
2011-2012	317,510	1.405	446,102	352,324	2.827	996,020
2012-2013	78,803	1.686	132,862	78,803	3.603	283,927
2013-2014	132,066	3.962	523,245	132,066	9.068	1,197,574
Totals	\$7,563,524		\$8,608,140	\$9,417,250		\$15,759,098

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

Limited Losses Paid as of:

Accident Year	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
1993-1994										
1994-1995										
1995-1996										
1996-1997										
1997-1998										
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	
2006-2007				168,817	169,486	170,008	177,620	269,969		
2007-2008			83,481	89,548	92,317	92,328	92,328			
2008-2009		210,080	256,345	290,708	300,987	369,391				
2009-2010	124,420	310,072	383,196	384,354	385,613					
2010-2011	69,290	250,949	273,840	283,239						
2011-2012	204,347	308,818	317,510							
2012-2013	53,919	78,803								
2013-2014	132,066									

Paid 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
1993-1994										
1994-1995										
1995-1996										
1996-1997										
1997-1998										
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	
2005-2006					1.016	1.002	1.023	1.001		
2006-2007				1.004	1.003	1.045	1.520			
2007-2008			1.073	1.031	1.000	1.000				
2008-2009		1.220	1.134	1.035	1.227					
2009-2010	2.492	1.236	1.003	1.003						
2010-2011	3.622	1.091	1.034							
2011-2012	1.511	1.028								
2012-2013	1.462									
	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	2.272	1.144	1.061	1.018	1.062	1.014	1.137	1.002	1.012	1.001
3-yr	1.950	1.120	1.049	1.019	1.122	1.016	1.174	1.001	1.010	1.000
4-yr	2.099	1.140	1.051	1.016	1.091	1.015	1.099	1.001	1.005	1.000
Industry Factors Prior	2.500	1.400	1.170	1.090	1.050	1.033	1.020	1.015	1.012	1.010
Selected	2.350	1.200	1.100	1.050	1.040	1.033	1.020	1.015	1.012	1.010
Cumulated	3.962	1.686	1.405	1.277	1.216	1.169	1.132	1.110	1.094	1.081

Novato Fire Protection District - Workers' Compensation

Exposure and Development Method
Based on Reported Losses

Accident Year	Trended Payroll (\$00) (A)	Reported Losses as of 6/30/14 (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	109,123	263,457	1.177	0.150	4.564	74,706	338,163
2006-2007	119,305	750,502	1.218	0.179	4.236	90,462	840,964
2007-2008	140,590	92,328	1.268	0.211	1.262	37,437	129,765
2008-2009	146,889	610,804	1.331	0.249	5.836	213,454	824,258
2009-2010	129,751	658,311	1.410	0.291	6.615	249,766	908,077
2010-2011	110,813	535,593	1.559	0.359	7.134	283,804	819,397
2011-2012	111,299	551,960	1.783	0.439	7.323	357,804	909,764
2012-2013	109,519	205,320	2.306	0.566	7.878	488,340	693,660
2013-2014	109,280	192,931	3.971	0.748	9.093	743,275	936,206
Totals	\$1,086,569	\$3,861,206				\$2,539,048	\$6,400,254

Notes:

- (A) From Appendix L, 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 payroll 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 6/30/14 (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	109,123	245,226	1.419	0.295	4.564	146,921	392,147
2006-2007	119,305	492,520	1.515	0.340	4.236	171,828	664,348
2007-2008	140,590	92,328	1.648	0.393	1.262	69,728	162,056
2008-2009	146,889	369,581	1.817	0.450	5.836	385,760	755,341
2009-2010	129,751	539,350	2.057	0.514	6.615	441,168	980,518
2010-2011	110,813	425,797	2.360	0.576	7.134	455,351	881,148
2011-2012	111,299	352,324	2.827	0.646	7.323	526,518	878,842
2012-2013	109,519	78,803	3.603	0.722	7.878	622,935	701,738
2013-2014	109,280	132,066	9.068	0.890	9.093	884,378	1,016,444
Totals	\$1,086,569	\$2,727,995				\$3,704,587	\$6,432,582

Notes:

- (A) From Appendix L, 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 payroll 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	109,123	273,000	1.758	479,934	4.398	2.502	1.824	4.564
2006-2007	119,305	269,969	1.650	445,449	3.734	2.263	1.872	4.236
2007-2008	140,590	92,328	1.518	140,154	0.997	0.657	1.921	1.262
2008-2009	146,889	435,000	1.401	609,435	4.149	2.961	1.971	5.836
2009-2010	129,751	474,000	1.269	601,506	4.636	3.270	2.023	6.615
2010-2011	110,813	362,000	1.208	437,296	3.946	3.435	2.077	7.134
2011-2012	111,299	510,000	1.208	616,080	5.535	3.435	2.132	7.323
2012-2013	109,519	267,000	1.153	307,851	2.811	3.599	2.189	7.878
2013-2014	109,280	377,000	1.061	399,997	3.660	3.911	2.325	9.093
Total/Avg	\$1,086,569	\$3,060,297		\$4,037,702	\$3.716			
09/10-13/14	570,662	1,990,000		2,362,730	\$4.140			
10/11-13/14	440,911	1,516,000		1,761,224	\$3.995			
				Selected Limited Rate:	\$4.150			

Notes:

- (A) From Appendix L, Column (C).
- (B) Selected average of results from Appendices A and B.
- (C) From Appendix E, Column (B).
- (D) (B) x (C).
- (E) (D) / (A).
- (F) Selected Limited Rate / (C). For 2008-2009 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 payroll 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	\$8,759	213	\$1,865,667
1994-1995	13,086	31	405,666
1995-1996	4,942	32	158,144
1996-1997	21,266	34	723,044
1997-1998	19,001	26	494,026
1998-1999	29,852	31	925,412
1999-2000	13,099	31	406,069
2000-2001	17,836	26	463,736
2001-2002	36,270	24	870,480
2002-2003	10,321	30	309,630
2003-2004	24,358	31	755,098
2004-2005	18,413	20	368,260
2005-2006	18,442	27	497,934
2006-2007	21,974	23	505,402
2007-2008	9,853	18	177,354
2008-2009	37,278	23	857,394
2009-2010	28,858	26	750,308
2010-2011	31,759	19	603,421
2011-2012	33,261	19	631,959
2012-2013	36,484	23	839,132
2013-2014	42,975	31	1,332,225
Total		738	\$13,940,361

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	\$1,519,306	213	\$7,133	3.241	\$23,118	\$7,133	1.228	\$8,759
1994-1995	313,000	31	10,097	2.990	30,190	10,097	1.296	13,086
1995-1996	121,000	32	3,781	2.678	10,126	3,781	1.307	4,942
1996-1997	549,000	34	16,147	2.348	37,913	16,147	1.317	21,266
1997-1998	372,000	26	14,308	1.991	28,487	14,308	1.328	19,001
1998-1999	691,649	31	22,311	1.706	38,063	22,311	1.338	29,852
1999-2000	301,000	31	9,710	1.479	14,361	9,710	1.349	13,099
2000-2001	341,000	26	13,115	1.373	18,007	13,115	1.360	17,836
2001-2002	620,000	24	25,833	1.349	34,849	25,833	1.404	36,270
2002-2003	183,000	30	6,100	1.383	8,436	6,100	1.692	10,321
2003-2004	435,196	31	14,039	1.643	23,066	14,039	1.735	24,358
2004-2005	207,000	20	10,350	2.014	20,845	10,350	1.779	18,413
2005-2006	273,000	27	10,111	2.102	21,253	10,111	1.824	18,442
2006-2007	269,969	23	11,738	1.934	22,701	11,738	1.872	21,974
2007-2008	92,328	18	5,129	1.743	8,940	5,129	1.921	9,853
2008-2009	435,000	23	18,913	1.578	29,845	18,913	1.971	37,278
2009-2010	474,000	26	18,231	1.402	25,560	14,265	2.023	28,858
2010-2011	362,000	19	19,053	1.308	24,921	15,291	2.077	31,759
2011-2012	510,000	19	26,842	1.282	34,411	15,601	2.132	33,261
2012-2013	268,000	23	11,652	1.200	13,982	16,667	2.189	36,484
2013-2014	427,000	31	13,774	1.082	14,903	18,484	2.325	42,975

Average Limited Severity: \$23,047
Average 09/10-13/14 Limited Severity: \$22,755
Average 10/11-13/14 Limited Severity: \$22,054

Selected Limited Severity: \$20,000

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, 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	213	212	213	0		0.655	
1994-1995	31	30	31	0		0.668	
1995-1996	32	31	32	0		0.682	
1996-1997	34	32	34	0		0.696	
1997-1998	26	25	26	0		0.710	
1998-1999	31	30	31	0		0.725	
1999-2000	31	30	31	0		0.740	
2000-2001	26	25	26	0		0.755	
2001-2002	24	22	24	0		0.769	
2002-2003	30	29	30	0		0.785	
2003-2004	31	30	31	0		0.801	
2004-2005	20	19	20	0		0.817	
2005-2006	27	27	27	11	2.474	0.834	2.063
2006-2007	23	23	23	12	1.928	0.851	1.641
2007-2008	18	19	18	14	1.280	0.868	1.111
2008-2009	23	22	23	15	1.566	0.886	1.387
2009-2010	26	25	26	13	2.004	0.904	1.812
2010-2011	19	17	19	11	1.715	0.922	1.581
2011-2012	19	15	19	11	1.707	0.942	1.608
2012-2013	23	24	23	11	2.100	0.961	2.018
2013-2014	31	47	31	11	2.837	0.980	2.780
Total	738	734	738	108.657			1.744

(H) Selected 2014-2015 Frequency: 2.400

Notes:

- (A) From Appendix D, Page 4, (C).
- (B) From Appendix D, Page 5, (C).
- (C) Selected from (A) and (B).
- (D) From Appendix L, Column (C) divided by 10,000.
- (E) (C) / (D).
- (F) From Appendix E.
- (G) (E) x (F).
- (H) The selected frequency of 2.400 is based on (G).
- (I) From Appendix E.
- (J) (H) x (I).
- (K) From Appendix L, Column (C) divided by 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 6/30/2014 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	213	1.000	213	
1994-1995	31	1.000	31	
1995-1996	32	1.000	32	
1996-1997	34	1.000	34	
1997-1998	26	1.000	26	
1998-1999	31	1.000	31	
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	2.064
2006-2007	23	1.000	23	1.641
2007-2008	18	1.001	18	1.111
2008-2009	23	1.002	23	1.387
2009-2010	26	1.004	26	1.811
2010-2011	19	1.007	19	1.581
2011-2012	19	1.011	19	1.608
2012-2013	23	1.018	23	2.018
2013-2014	28	1.120	31	2.780
Total	735		738	1.744

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 6/30/2014 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	212	1.001	212	
1994-1995	30	1.001	30	
1995-1996	31	1.002	31	
1996-1997	32	1.003	32	
1997-1998	25	1.004	25	
1998-1999	30	1.005	30	
1999-2000	30	1.006	30	
2000-2001	25	1.007	25	
2001-2002	22	1.008	22	
2002-2003	29	1.010	29	
2003-2004	30	1.013	30	
2004-2005	19	1.017	19	
2005-2006	26	1.022	27	2.064
2006-2007	22	1.030	23	1.641
2007-2008	18	1.040	19	1.173
2008-2009	21	1.056	22	1.327
2009-2010	23	1.082	25	1.742
2010-2011	15	1.114	17	1.414
2011-2012	13	1.170	15	1.270
2012-2013	19	1.264	24	2.106
2013-2014	23	2.022	47	4.215
Total	695		734	1.837

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

Number of Claims Reported as of:

Accident Year	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
1993-1994													
1994-1995													
1995-1996													
1996-1997													
1997-1998													28
1998-1999												34	34
1999-2000											31	31	31
2000-2001										28	28	28	28
2001-2002									25	25	25	25	24
2002-2003								30	30	30	30	30	
2003-2004							35	35	35	35	31		
2004-2005						25	25	25	25	20			
2005-2006					29	29	29	29	27				
2006-2007				24	24	25	25	23					
2007-2008			20	20	20	20	18						
2008-2009		22	22	23	23	23							
2009-2010	24	26	26	27	26								
2010-2011	24	25	25	19									
2011-2012	23	24	19										
2012-2013	21	23											
2013-2014	28												

Reported 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
1993-1994													
1994-1995													
1995-1996													
1996-1997													
1997-1998													1.000
1998-1999												1.000	1.000
1999-2000										1.000	1.000	1.000	1.000
2000-2001									1.000	1.000	1.000	1.000	0.929
2001-2002									1.000	1.000	1.000	0.960	
2002-2003								1.000	1.000	1.000	1.000		
2003-2004							1.000	1.000	1.000	0.886			
2004-2005					1.000	1.000	1.000	1.000	0.800				
2005-2006					1.000	1.000	1.000	0.931					
2006-2007				1.000	1.042	1.000	0.920						
2007-2008			1.000	1.000	1.000	0.900							
2008-2009		1.000	1.045	1.000	1.000								
2009-2010	1.083	1.000	1.038	0.963									
2010-2011	1.042	1.000	0.760										
2011-2012	1.043	0.792											
2012-2013	1.095												
Average	1.066	0.948	0.961	0.991	1.011	0.975	0.980	0.983	0.950	0.972	1.000	0.990	0.982
Claim-weighted Averages													
3-yr	1.059	0.933	0.945	0.986	1.015	0.973	0.975	0.978	0.944	0.956	1.000	0.988	0.978
4-yr	1.065	0.948	0.957	0.989	1.010	0.980	0.982	0.983	0.957	0.966	1.000	0.992	0.983
Industry 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
Prior													
Selected	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
Cumulated	1.120	1.018	1.011	1.007	1.004	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000

Novato Fire Protection District - Workers' Compensation
Closed Claim Development

Claims Closed as of:

Accident Year	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
1993-1994													
1994-1995													
1995-1996													
1996-1997													
1997-1998													26
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	
2003-2004							32	32	32	32	30		
2004-2005						24	24	24	24	19			
2005-2006					27	27	27	28	26				
2006-2007				21	21	23	24	22					
2007-2008			18	18	19	20	18						
2008-2009		19	19	20	20	21							
2009-2010	17	21	22	24	23								
2010-2011	19	20	21	15									
2011-2012	11	19	13										
2012-2013	15	19											
2013-2014	23												

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
1993-1994													
1994-1995													
1995-1996													
1996-1997													
1997-1998													1.000
1998-1999												1.000	1.000
1999-2000										1.037	1.000	1.000	0.968
2000-2001									1.045	1.000	1.000	0.957	
2001-2002								1.000	1.000	1.000	1.000		
2002-2003								1.000	1.000	1.000	0.938		
2003-2004						1.000	1.000	1.000	1.000	0.792			
2004-2005					1.000	1.000	1.037	0.929					
2005-2006				1.000	1.095	1.043	0.917						
2006-2007			1.000	1.056	1.053	0.900							
2007-2008		1.000	1.053	1.000	1.050								
2008-2009		1.235	1.048	1.091	0.958								
2009-2010	1.053	1.050	0.714										
2010-2011	1.727	0.684											
2011-2012	1.267												
2012-2013													
Average	1.321	0.946	0.965	1.004	1.050	0.986	0.989	0.982	0.959	0.994	1.000	0.989	0.965
Claim-weighted Averages													
3-yr	1.289	0.933	0.952	1.000	1.067	0.986	0.987	0.976	0.941	0.976	1.000	0.988	0.957
4-yr	1.274	0.949	0.963	1.000	1.046	0.989	0.991	0.982	0.963	0.991	1.000	0.991	0.966
Industry 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
Prior													
Selected	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
Cumulated	2.022	1.264	1.170	1.114	1.082	1.056	1.040	1.030	1.022	1.017	1.013	1.010	1.008

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
		2014-2015 Loss Rate Level (B)	2015-2016 Loss Rate Level (C)	2016-2017 Loss Rate Level (D)	2017-2018 Loss Rate Level (E)	2014-2015 Frequency Level (F)	2015-2016 Frequency Level (G)	2016-2017 Frequency Level (H)	2017-2018 Frequency Level (I)	2014-2015 Severity Level (J)
1993-1994	1.931	2.138	2.202	2.255	2.309	0.655	0.642	0.629	0.616	3.241
1994-1995	1.826	2.011	2.071	2.121	2.171	0.668	0.655	0.642	0.629	2.990
1995-1996	1.676	1.836	1.891	1.937	1.983	0.682	0.669	0.655	0.642	2.678
1996-1997	1.506	1.641	1.690	1.731	1.772	0.696	0.682	0.668	0.655	2.348
1997-1998	1.309	1.418	1.461	1.496	1.532	0.710	0.696	0.682	0.668	1.991
1998-1999	1.150	1.240	1.277	1.308	1.339	0.725	0.710	0.696	0.682	1.706
1999-2000	1.022	1.098	1.131	1.157	1.185	0.740	0.725	0.710	0.696	1.479
2000-2001	0.972	1.039	1.071	1.096	1.122	0.755	0.740	0.724	0.710	1.373
2001-2002	0.979	1.042	1.073	1.098	1.125	0.769	0.754	0.739	0.724	1.349
2002-2003	1.029	1.089	1.122	1.149	1.176	0.785	0.770	0.754	0.739	1.383
2003-2004	1.252	1.320	1.360	1.392	1.426	0.801	0.785	0.769	0.754	1.643
2004-2005	1.573	1.651	1.700	1.741	1.782	0.817	0.801	0.785	0.769	2.014
2005-2006	1.683	1.758	1.811	1.854	1.898	0.834	0.818	0.801	0.785	2.102
2006-2007	1.588	1.650	1.700	1.740	1.782	0.851	0.834	0.817	0.801	1.934
2007-2008	1.467	1.518	1.563	1.600	1.639	0.868	0.851	0.834	0.817	1.743
2008-2009	1.360	1.401	1.443	1.477	1.512	0.886	0.869	0.851	0.834	1.578
2009-2010	1.238	1.269	1.307	1.338	1.370	0.904	0.886	0.868	0.851	1.402
2010-2011	1.185	1.208	1.245	1.274	1.305	0.922	0.904	0.886	0.868	1.308
2011-2012	1.190	1.208	1.244	1.273	1.304	0.942	0.923	0.904	0.886	1.282
2012-2013	1.142	1.153	1.187	1.216	1.245	0.961	0.942	0.922	0.904	1.200
2013-2014	1.056	1.061	1.093	1.119	1.145	0.980	0.960	0.941	0.922	1.082
2014-2015	1.000	1.000	1.030	1.055	1.080	1.000	0.980	0.960	0.941	1.000
2015-2016	0.976	--	1.000	1.024	1.048	--	1.000	0.980	0.960	--
2016-2017	0.958	--	--	1.000	1.024	--	--	1.000	0.980	--
2017-2018	0.940	--	--	--	1.000	--	--	--	1.000	--

Notes:

- (A) Based on WCIRB.
- (B) - (E) (A) adjusted for a 0.5% 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

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>6/30/2014</u>	<u>Calendar Period</u>	
		<u>7/1/2014</u> <u>to</u> <u>6/30/2015</u>	<u>7/1/2015</u> <u>to</u> <u>6/30/2016</u>
Prior			
Ultimate Loss	\$3,356,000	\$3,356,000	\$3,356,000
Paid in Calendar Period	-	22,482	19,183
Paid to Date	3,203,380	3,225,862	3,245,045
Outstanding Liability	152,620	130,138	110,955
1998-1999			
Ultimate Loss	\$968,000	\$968,000	\$968,000
Paid in Calendar Period	-	3,441	2,975
Paid to Date	933,243	936,684	939,659
Outstanding Liability	34,757	31,316	28,341
1999-2000			
Ultimate Loss	\$430,000	\$430,000	\$430,000
Paid in Calendar Period	-	2,453	2,341
Paid to Date	403,903	406,356	408,697
Outstanding Liability	26,097	23,644	21,303
2000-2001			
Ultimate Loss	\$580,000	\$580,000	\$580,000
Paid in Calendar Period	-	2,879	2,770
Paid to Date	547,648	550,527	553,297
Outstanding Liability	32,352	29,473	26,703
2001-2002			
Ultimate Loss	\$1,140,000	\$1,140,000	\$1,140,000
Paid in Calendar Period	-	12,660	7,282
Paid to Date	1,045,525	1,058,185	1,065,467
Outstanding Liability	94,475	81,815	74,533
2002-2003			
Ultimate Loss	\$196,000	\$196,000	\$196,000
Paid in Calendar Period	-	11,113	3,736
Paid to Date	157,007	168,120	171,856
Outstanding Liability	38,993	27,880	24,144
2003-2004			
Ultimate Loss	\$2,034,000	\$2,034,000	\$2,034,000
Paid in Calendar Period	-	36,201	82,630
Paid to Date	1,707,869	1,744,070	1,826,700
Outstanding Liability	326,131	289,930	207,300

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>6/30/2014</u>	<u>Calendar Period</u>	
		<u>7/1/2014</u> <u>to</u> <u>6/30/2015</u>	<u>7/1/2015</u> <u>to</u> <u>6/30/2016</u>
2004-2005			
Ultimate Loss	\$216,000	\$216,000	\$216,000
Paid in Calendar Period	-	7,039	6,387
Paid to Date	151,422	158,461	164,848
Outstanding Liability	64,578	57,539	51,152
2005-2006			
Ultimate Loss	\$329,000	\$329,000	\$329,000
Paid in Calendar Period	-	9,131	8,136
Paid to Date	245,226	254,357	262,493
Outstanding Liability	83,774	74,643	66,507
2006-2007			
Ultimate Loss	\$830,000	\$830,000	\$830,000
Paid in Calendar Period	-	44,210	31,966
Paid to Date	492,520	536,730	568,696
Outstanding Liability	337,480	293,270	261,304
2007-2008			
Ultimate Loss	\$135,000	\$135,000	\$135,000
Paid in Calendar Period	-	5,761	4,835
Paid to Date	92,328	98,089	102,924
Outstanding Liability	42,672	36,911	32,076
2008-2009			
Ultimate Loss	\$742,000	\$742,000	\$742,000
Paid in Calendar Period	-	46,925	43,942
Paid to Date	369,581	416,506	460,448
Outstanding Liability	372,419	325,494	281,552
2009-2010			
Ultimate Loss	\$918,000	\$918,000	\$918,000
Paid in Calendar Period	-	47,331	41,746
Paid to Date	539,350	586,681	628,427
Outstanding Liability	378,650	331,319	289,573
2010-2011			
Ultimate Loss	\$827,000	\$827,000	\$827,000
Paid in Calendar Period	-	43,330	44,734
Paid to Date	425,797	469,127	513,861
Outstanding Liability	401,203	357,873	313,139

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

<u>Accident Year</u>	<u>As of</u> <u>6/30/2014</u>	<u>Calendar Period</u>	
		<u>7/1/2014</u> <u>to</u> <u>6/30/2015</u>	<u>7/1/2015</u> <u>to</u> <u>6/30/2016</u>
2011-2012			
Ultimate Loss	\$894,000	\$894,000	\$894,000
Paid in Calendar Period	-	58,501	52,183
Paid to Date	352,324	410,825	463,008
Outstanding Liability	541,676	483,175	430,992
2012-2013			
Ultimate Loss	\$698,000	\$698,000	\$698,000
Paid in Calendar Period	-	65,016	59,852
Paid to Date	78,803	143,819	203,671
Outstanding Liability	619,197	554,181	494,329
2013-2014			
Ultimate Loss	\$976,000	\$976,000	\$976,000
Paid in Calendar Period	-	158,660	71,954
Paid to Date	132,066	290,726	362,680
Outstanding Liability	843,934	685,274	613,320
2014-2015			
Ultimate Loss	-	-	-
Paid in Calendar Period	-	-	-
Paid to Date	-	-	-
Outstanding Liability	-	-	-
2015-2016			
Ultimate Loss	-	-	-
Paid in Calendar Period	-	-	-
Paid to Date	-	-	-
Outstanding Liability	-	-	-
Totals			
Ultimate Loss	\$15,269,000	\$15,269,000	\$15,269,000
Paid in Calendar Period	-	577,133	486,652
Paid to Date	10,877,992	11,455,125	11,941,777
Outstanding Liability	4,391,008	3,813,875	3,327,223
Total Outstanding ULAE	330,023	246,023	191,118
Outstanding Liability plus ULAE	4,721,031	4,059,898	3,518,341

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 2012-2013, \$65,016 is expected to be paid between 7/1/14 and 6/30/15, \$143,819 will have been paid by 6/30/15, and the reserve for remaining payments on these claims should be \$554,181.
- Ultimate Losses for each accident year are from Exhibit 3, Page 1.
- Paid in Calendar Period is a proportion of the Outstanding Liability from the previous calendar period. These proportions are derived from the paid loss development pattern selected in Appendix B. For example, $\$59,852 = \$554,181 \times 10.8\%$.
- Paid to Date is Paid in Calendar Period plus Paid to Date from previous calendar period. For example, $\$203,671 = \$59,852 + \$143,819$.
- Outstanding Liability is Ultimate Loss minus Paid to Date. For example, $\$554,181 = \$698,000 - \$143,819$.

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 6/30/14:</u>		<u>Expected</u>	<u>Discounted</u>
<u>Current (Short Term)</u>	Loss and ALAE:	\$577,133	\$570,051
	ULAE:	84,000	82,969
	Short-Term Loss and LAE:	<u>\$661,133</u>	<u>\$653,020</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$3,813,875	\$3,079,765
	ULAE:	246,023	191,347
	Long-Term Loss and LAE:	<u>\$4,059,898</u>	<u>\$3,271,112</u>
<u>Total Liability</u>	Loss and ALAE:	\$4,391,008	\$3,649,816
	ULAE:	330,023	274,316
	Total Loss and LAE:	<u>\$4,721,031</u>	<u>\$3,924,132</u>
<u>Liabilities as of 6/30/15:</u>			
<u>Current (Short Term)</u>	Loss and ALAE:	\$486,652	\$480,681
	ULAE:	54,905	54,231
	Short-Term Loss and LAE:	<u>\$541,557</u>	<u>\$534,912</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$3,327,223	\$2,695,446
	ULAE:	191,118	150,653
	Long-Term Loss and LAE:	<u>\$3,518,341</u>	<u>\$2,846,099</u>
<u>Total Liability</u>	Loss and ALAE:	\$3,813,875	\$3,176,127
	ULAE:	246,023	204,884
	Total Loss and LAE:	<u>\$4,059,898</u>	<u>\$3,381,011</u>

		<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 6/30/14:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$647,008	\$681,211	\$721,115	\$771,279	\$837,975
	ULAE:	94,170	99,148	104,956	112,257	121,964
	Short-Term Loss and LAE:	<u>\$741,178</u>	<u>\$780,359</u>	<u>\$826,071</u>	<u>\$883,536</u>	<u>\$959,939</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$3,495,533	\$3,680,319	\$3,895,902	\$4,166,922	\$4,527,255
	ULAE:	217,179	228,660	242,054	258,893	281,280
	Long-Term Loss and LAE:	<u>\$3,712,712</u>	<u>\$3,908,979</u>	<u>\$4,137,956</u>	<u>\$4,425,815</u>	<u>\$4,808,535</u>
<u>Total Liability</u>	Loss and ALAE:	\$4,142,541	\$4,361,530	\$4,617,017	\$4,938,201	\$5,365,230
	ULAE:	311,349	327,808	347,010	371,150	403,244
	Total Loss and LAE:	<u>\$4,453,890</u>	<u>\$4,689,338</u>	<u>\$4,964,027</u>	<u>\$5,309,351</u>	<u>\$5,768,474</u>
<u>Liabilities as of 6/30/15:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$545,573	\$574,414	\$608,061	\$650,361	\$706,601
	ULAE:	61,552	64,806	68,602	73,375	79,720
	Short-Term Loss and LAE:	<u>\$607,125</u>	<u>\$639,220</u>	<u>\$676,663</u>	<u>\$723,736</u>	<u>\$786,321</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$3,059,331	\$3,221,058	\$3,409,740	\$3,646,939	\$3,962,306
	ULAE:	170,991	180,030	190,576	203,833	221,459
	Long-Term Loss and LAE:	<u>\$3,230,322</u>	<u>\$3,401,088</u>	<u>\$3,600,316</u>	<u>\$3,850,772</u>	<u>\$4,183,765</u>
<u>Total Liability</u>	Loss and ALAE:	\$3,604,904	\$3,795,472	\$4,017,801	\$4,297,300	\$4,668,907
	ULAE:	232,543	244,836	259,178	277,208	301,179
	Total Loss and LAE:	<u>\$3,837,447</u>	<u>\$4,040,308</u>	<u>\$4,276,979</u>	<u>\$4,574,508</u>	<u>\$4,970,086</u>

Note: Current (short term) liabilities are the portion of the total estimated liability shown on Appendix F 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 6/30/14 (A)	Discount Factor (B)	Discounted Reserve at 6/30/14 (C)	Full Value of Reserve at 6/30/15 (D)	Discount Factor (E)	Discounted Reserve at 6/30/15 (F)
Prior	\$10,465	0.988	\$10,337	\$8,927	0.988	\$8,817
1994-1995	34,931	0.966	33,745	26,163	0.988	25,842
1995-1996	21,476	0.947	20,330	18,813	0.966	18,174
1996-1997	62,099	0.929	57,675	54,833	0.947	51,906
1997-1998	23,649	0.912	21,569	21,402	0.929	19,877
1998-1999	34,757	0.897	31,161	31,316	0.912	28,562
1999-2000	26,097	0.883	23,033	23,644	0.897	21,198
2000-2001	32,352	0.869	28,124	29,473	0.883	26,012
2001-2002	94,475	0.858	81,068	81,815	0.869	71,124
2002-2003	38,993	0.849	33,112	27,880	0.858	23,924
2003-2004	326,131	0.842	274,600	289,930	0.849	246,201
2004-2005	64,578	0.835	53,931	57,539	0.842	48,447
2005-2006	83,774	0.830	69,510	74,643	0.835	62,336
2006-2007	337,480	0.829	279,876	293,270	0.830	243,337
2007-2008	42,672	0.830	35,401	36,911	0.829	30,611
2008-2009	372,419	0.828	308,366	325,494	0.830	270,030
2009-2010	378,650	0.827	313,023	331,319	0.828	274,335
2010-2011	401,203	0.823	330,062	357,873	0.827	295,847
2011-2012	541,676	0.819	443,514	483,175	0.823	397,499
2012-2013	619,197	0.815	504,462	554,181	0.819	453,753
2013-2014	843,934	0.826	696,917	685,274	0.815	558,295
2014-2015	0	-	-	0	0.826	0
Totals	\$4,391,008		\$3,649,816	\$3,813,875		\$3,176,127

(G) Discount Factor at 6/30/14 for Overall Reserve: 0.831
(H) Discount Factor at 6/30/15 for Overall Reserve: 0.833

Notes:

- (A) From Appendix F, Outstanding Liability at 6/30/14.
- (B) Based on Appendix H, Page 2, Column (E).
- (C) (A) x (B).
- (D) From Appendix F, Outstanding Liability at 6/30/15.
- (E) Based on Appendix H, 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 0.831, the discounted liability for outstanding claims is 83.1% of the full value.

Novato Fire Protection District - Workers' Compensation

Calculation of Discount Factors

Payment Year (A)	Payment Pattern (B)	Discounted* Reserves (C)	Undiscounted Reserves (D)	Discount Factor (E)
22	13.3%	0.132	0.133	0.988
21	1.5%	0.143	0.148	0.966
20	1.5%	0.154	0.163	0.947
19	1.4%	0.165	0.178	0.929
18	1.4%	0.175	0.192	0.912
17	1.4%	0.184	0.206	0.897
16	1.5%	0.195	0.221	0.883
15	1.5%	0.206	0.237	0.869
14	1.8%	0.219	0.255	0.858
13	2.2%	0.235	0.277	0.849
12	2.6%	0.255	0.303	0.842
11	2.7%	0.275	0.330	0.835
10	3.1%	0.300	0.361	0.830
9	4.5%	0.337	0.406	0.829
8	5.3%	0.381	0.459	0.830
7	5.4%	0.424	0.512	0.828
6	6.0%	0.473	0.572	0.827
5	5.6%	0.517	0.629	0.823
4	6.0%	0.564	0.689	0.819
3	6.3%	0.613	0.752	0.815
2	14.4%	0.740	0.896	0.826
1	10.4%	0.825	1.000	0.825

(F) Discount Factor for Future Funding: 0.835

* Assumed Investment Rate: 2.5%

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) 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, 74.0% = $[61.3\% / 1.025] + [14.4\% / (1.012)]$.
- (D) Summation of future (B) values. This is the percent of ultimate loss unpaid at the beginning of the year.
- (E) (C) / (D).
- (F) (E) 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 0.83, on a discounted basis, \$0.83 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	1.663
90	2.339	1.470
85	1.828	1.353
80	1.495	1.265
75	1.253	1.195
70	1.065	1.135
65	0.912	1.081
60	0.785	1.033
55	0.675	0.989
50	0.580	0.946
45	0.496	0.906
40	0.421	0.866
35	0.353	0.827
30	0.291	0.787
25	0.234	0.745

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	6/30/1994	Prior	275,000	(none)
7/1/1994	6/30/1995	1994-1995	275,000	(none)
7/1/1995	6/30/1996	1995-1996	275,000	(none)
7/1/1996	6/30/1997	1996-1997	275,000	(none)
7/1/1997	6/30/1998	1997-1998	275,000	(none)
7/1/1998	6/30/1999	1998-1999	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 6/30/14

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	\$1,837,401	\$0	\$56,180	\$1,781,221	\$0	\$261,915	\$1,519,306	\$261,915	\$1,781,221	\$1,781,221
1994-1995	383,678	0	0	383,678	0	73,502	310,176	73,502	383,678	383,678
1995-1996	119,386	0	0	119,386	0	0	119,386	0	119,386	119,386
1996-1997	592,817	0	0	592,817	0	50,804	542,013	50,804	592,817	592,817
1997-1998	450,864	0	0	450,864	0	80,309	370,556	80,309	450,864	450,864
1998-1999	938,818	0	0	938,818	0	247,170	691,649	247,170	938,818	938,818
1999-2000	413,703	0	0	413,703	0	116,070	297,634	116,070	413,703	413,703
2000-2001	558,355	0	0	558,355	5,667	225,797	332,558	220,129	552,688	552,688
2001-2002	1,072,888	0	694	1,072,193	0	468,862	603,332	468,862	1,072,193	1,072,193
2002-2003	177,091	0	0	177,091	0	0	177,091	0	177,091	177,091
2003-2004	1,982,159	0	0	1,982,159	0	1,546,964	435,196	1,546,964	1,982,159	1,982,159
2004-2005	198,520	0	0	198,520	0	0	198,520	0	198,520	198,520
2005-2006	263,457	0	0	263,457	0	0	263,457	0	263,457	263,457
2006-2007	750,502	0	0	750,502	0	480,533	269,969	480,533	750,502	750,502
2007-2008	92,328	0	0	92,328	0	0	92,328	0	92,328	92,328
2008-2009	610,804	0	0	610,804	0	204,722	406,082	204,722	610,804	610,804
2009-2010	658,311	0	0	658,311	0	218,754	439,557	218,754	658,311	658,311
2010-2011	535,593	0	0	535,593	0	208,417	327,175	208,417	535,593	535,593
2011-2012	551,960	0	0	551,960	0	89,998	461,963	89,998	551,960	551,960
2012-2013	205,320	0	0	205,320	0	0	205,320	0	205,320	205,320
2013-2014	192,931	0	0	192,931	0	0	192,931	0	192,931	192,931
2014-2015	0	0	0	0	0	0	0	0	0	0
Total	\$12,586,886	\$0	\$56,875	\$12,530,011	\$5,667	\$4,273,814	\$8,256,198	\$4,268,146	\$12,524,344	\$12,524,344

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District.
- (C)
- (D) Subrogation 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 J.

Novato Fire Protection District - Workers' Compensation

Paid Losses as of 6/30/14

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	\$1,828,715	\$0	\$56,180	\$1,772,535	\$0	\$253,228	\$1,519,306	\$253,228	\$1,772,535	\$1,772,535
1994-1995	353,069	0	0	353,069	0	73,502	279,567	73,502	353,069	353,069
1995-1996	99,524	0	0	99,524	0	0	99,524	0	99,524	99,524
1996-1997	540,901	0	0	540,901	0	50,804	490,097	50,804	540,901	540,901
1997-1998	437,351	0	0	437,351	0	80,309	357,043	80,309	437,351	437,351
1998-1999	933,243	0	0	933,243	0	241,595	691,649	241,595	933,243	933,243
1999-2000	403,903	0	0	403,903	0	116,070	287,833	116,070	403,903	403,903
2000-2001	553,315	0	0	553,315	5,667	225,797	327,518	220,129	547,648	547,648
2001-2002	1,046,219	0	694	1,045,525	0	452,308	593,217	452,308	1,045,525	1,045,525
2002-2003	157,007	0	0	157,007	0	0	157,007	0	157,007	157,007
2003-2004	1,707,869	0	0	1,707,869	0	1,272,674	435,196	1,272,674	1,707,869	1,707,869
2004-2005	151,422	0	0	151,422	0	0	151,422	0	151,422	151,422
2005-2006	245,226	0	0	245,226	0	0	245,226	0	245,226	245,226
2006-2007	492,520	0	0	492,520	0	222,551	269,969	222,551	492,520	492,520
2007-2008	92,328	0	0	92,328	0	0	92,328	0	92,328	92,328
2008-2009	369,581	0	0	369,581	0	189	369,391	189	369,581	369,581
2009-2010	539,350	0	0	539,350	0	153,736	385,613	153,736	539,350	539,350
2010-2011	425,797	0	0	425,797	0	142,558	283,239	142,558	425,797	425,797
2011-2012	352,324	0	0	352,324	0	34,814	317,510	34,814	352,324	352,324
2012-2013	78,803	0	0	78,803	0	0	78,803	0	78,803	78,803
2013-2014	132,066	0	0	132,066	0	0	132,066	0	132,066	132,066
2014-2015	0	0	0	0	0	0	0	0	0	0
Total	\$10,940,533	\$0	\$56,875	\$10,883,658	\$5,667	\$3,320,134	\$7,563,524	\$3,314,467	\$10,877,991	\$10,877,991

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District.
- (C)
- (D) Subrogation 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 J.

Novato Fire Protection District - Workers' Compensation

Case Reserves as of 6/30/14

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 \$100,000 to SIR Layer (I)	Reserves Capped at SIR (J)	Reserves Capped at SIR & Aggregate (K)
Prior	\$8,686	\$0	\$0	\$8,686	\$0	\$8,686	\$0	\$8,686	\$8,686	\$8,686
1994-1995	30,609	0	0	30,609	0	0	30,609	0	30,609	30,609
1995-1996	19,862	0	0	19,862	0	0	19,862	0	19,862	19,862
1996-1997	51,916	0	0	51,916	0	0	51,916	0	51,916	51,916
1997-1998	13,513	0	0	13,513	0	0	13,513	0	13,513	13,513
1998-1999	5,575	0	0	5,575	0	5,575	0	5,575	5,575	5,575
1999-2000	9,801	0	0	9,801	0	0	9,801	0	9,801	9,801
2000-2001	5,040	0	0	5,040	0	0	5,040	0	5,040	5,040
2001-2002	26,669	0	0	26,669	0	16,554	10,115	16,554	26,669	26,669
2002-2003	20,084	0	0	20,084	0	0	20,084	0	20,084	20,084
2003-2004	274,290	0	0	274,290	0	274,290	0	274,290	274,290	274,290
2004-2005	47,098	0	0	47,098	0	0	47,098	0	47,098	47,098
2005-2006	18,231	0	0	18,231	0	0	18,231	0	18,231	18,231
2006-2007	257,982	0	0	257,982	0	257,982	0	257,982	257,982	257,982
2007-2008	0	0	0	0	0	0	0	0	0	0
2008-2009	241,223	0	0	241,223	0	204,532	36,691	204,532	241,223	241,223
2009-2010	118,961	0	0	118,961	0	65,018	53,943	65,018	118,961	118,961
2010-2011	109,796	0	0	109,796	0	65,859	43,936	65,859	109,796	109,796
2011-2012	199,637	0	0	199,637	0	55,184	144,453	55,184	199,637	199,637
2012-2013	126,517	0	0	126,517	0	0	126,517	0	126,517	126,517
2013-2014	60,865	0	0	60,865	0	0	60,865	0	60,865	60,865
2014-2015	0	0	0	0	0	0	0	0	0	0
Total	\$1,646,353	\$0	\$0	\$1,646,353	\$0	\$953,680	\$692,674	\$953,680	\$1,646,353	\$1,646,353

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Appendix K, Page 1, Column (B) - Appendix K, Page 2, Column (B).
- (C) Appendix K, Page 1, Column (C) - Appendix K, Page 2, Column (C).
- (D) Appendix K, Page 1, Column (D) - Appendix K, 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 J.

Novato Fire Protection District - Workers' Compensation

Claim Counts as of 6/30/14

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	231	0	18	213	230	0	18	212	1	1
1994-1995	33	0	2	31	32	0	2	30	1	1
1995-1996	35	0	3	32	34	0	3	31	1	1
1996-1997	39	0	5	34	37	0	5	32	2	2
1997-1998	28	0	2	26	27	0	2	25	1	1
1998-1999	34	0	3	31	33	0	3	30	1	1
1999-2000	31	0	0	31	30	0	0	30	1	1
2000-2001	28	0	2	26	27	0	2	25	1	1
2001-2002	25	0	1	24	23	0	1	22	2	2
2002-2003	30	0	0	30	29	0	0	29	1	1
2003-2004	35	0	4	31	34	0	4	30	1	1
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	24	0	2	22	1	1
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	24	0	1	23	3	3
2010-2011	25	0	6	19	21	0	6	15	4	4
2011-2012	24	0	5	19	18	0	5	13	6	6
2012-2013	24	0	1	23	20	0	1	19	4	4
2013-2014	32	0	4	28	27	0	4	23	5	5
2014-2015	0	0	0	0	0	0	0	0	0	0
Total	804	0	69	735	764	0	69	695	40	40

Notes:

- (A) Years are 7/1 to 6/30.
- (B) Provided by the District.
- (C)
- (D)
- (E) (B) + (C) - (D).
- (F) Provided by the District.
- (G)
- (H)
- (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)
Prior			
1994-1995			
1995-1996			
1996-1997			
1997-1998			
1998-1999			
1999-2000			
2000-2001			
2001-2002			
2002-2003			
2003-2004			
2004-2005			
2005-2006	87,368	1.249	109,123
2006-2007	97,871	1.219	119,305
2007-2008	118,242	1.189	140,590
2008-2009	126,628	1.160	146,889
2009-2010	114,621	1.132	129,751
2010-2011	100,374	1.104	110,813
2011-2012	103,342	1.077	111,299
2012-2013	104,205	1.051	109,519
2013-2014	106,615	1.025	109,280
2014-2015	108,079	1.000	108,079
2015-2016	108,079	1.000	108,079

Notes:

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