



# Actuarial Review of the Self-Insured Workers' Compensation Program

*Outstanding Liabilities as of June 30, 2015*

*Presented to*  
Novato Fire Protection District

August 18, 2015



Tuesday, August 18, 2015

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. 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 to be \$2,958,000, 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 \$2,958,000 estimate is the minimum liability to be booked by the District at June 30, 2015 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, 2015 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, 2015

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	\$3,286,000					
ULAE	254,000					
Investment Income Offset	(582,000)					
Discounted Loss and LAE	\$2,958,000	\$3,372,000	\$3,558,000	\$3,780,000	\$4,052,000	\$4,416,000

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.

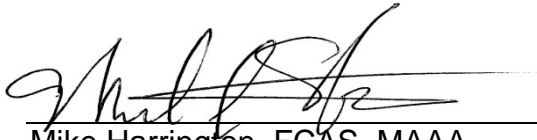
The ultimate impact on loss costs of legislated benefit adjustments are generally difficult to forecast in advance because the changes typically take place over a period of several years following enactment. Furthermore, actuarially derived benefit level evaluations often underestimate actual future 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 Mike Harrington at (916) 244-1162 with any questions you may have concerning this report.

Sincerely,

Bickmore



---

Mike Harrington, FCAS, MAAA  
Director, Property and Casualty Actuarial Services, Bickmore  
Fellow, Casualty Actuarial Society  
Member, American Academy of Actuaries



---

Becky Richard, ACAS, MAAA  
Manager, Property and Casualty Actuarial Services, Bickmore  
Associate, Casualty Actuarial Society  
Member, American Academy of Actuaries

## TABLE OF CONTENTS

I. BACKGROUND	5
II. CONCLUSIONS AND RECOMMENDATIONS	6
A. LIABILITY FOR OUTSTANDING CLAIMS	6
B. PROGRAM FUNDING: GOALS AND OBJECTIVES	9
C. HISTORICAL TRENDS IN THE SELF-INSURANCE PROGRAM	11
D. COMPARISON WITH PREVIOUS RESULTS	14
E. DATA PROVIDED FOR THE ANALYSIS	18
III. ASSUMPTIONS AND LIMITATIONS	19
IV. GLOSSARY OF ACTUARIAL TERMS	21
V. EXHIBITS	23
VI. APPENDICES	29

## **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, 2015.

## **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, 2015. 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 \$3,540,000 as of June 30, 2015. 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).

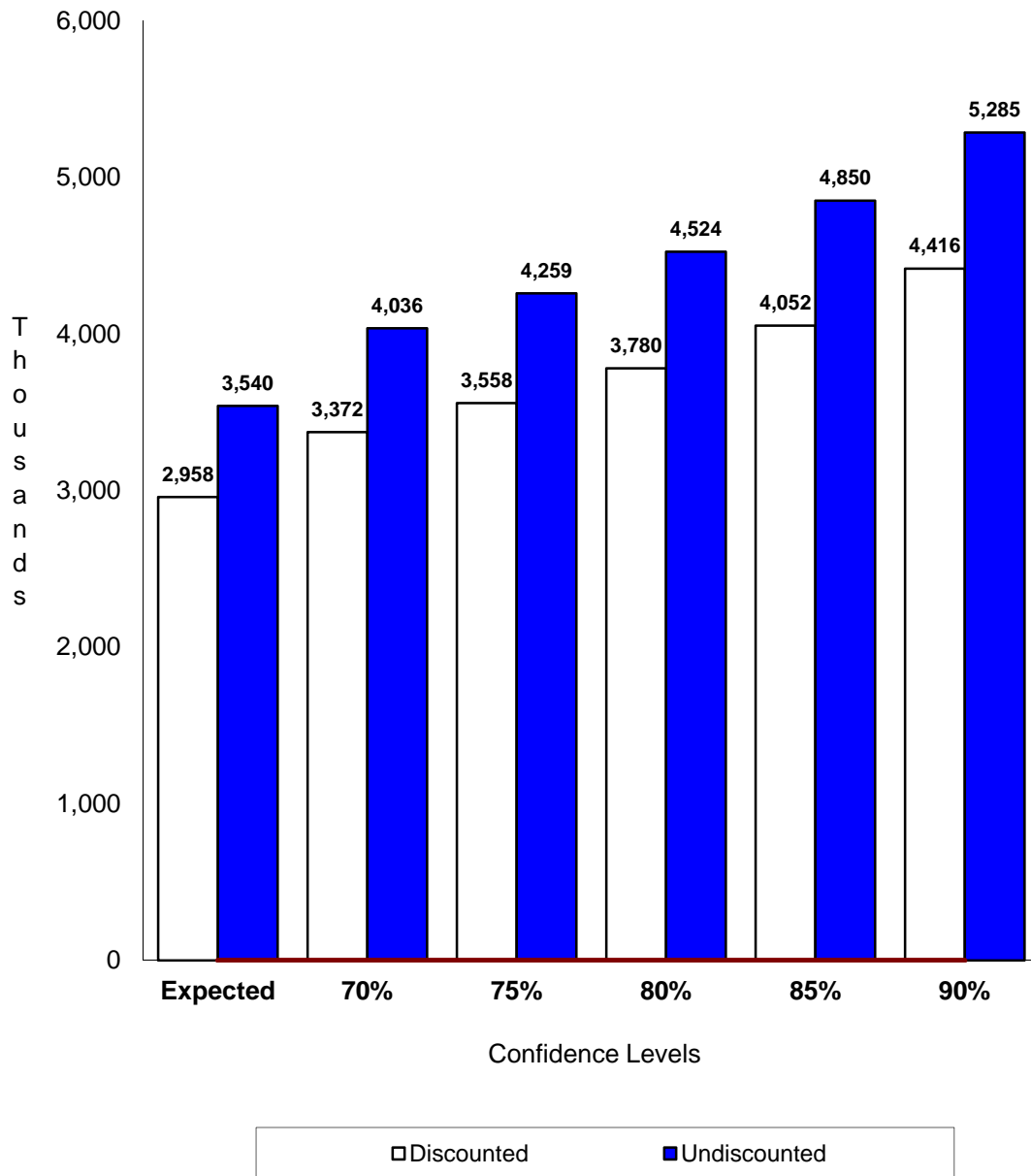
There is some measure of uncertainty associated with our best estimate because of the random nature of much of the process that determines ultimate claims costs. For this reason, we generally recommend that a program such as this include some funding margin for the possibility that actual loss costs 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 16% if the program is funded within the range indicated in the graphs, resulting in a discounted liability for outstanding claims of \$2,958,000 as of June 30, 2015.

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, 2015





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, 2015, before recognition of investment income.

Novato Fire Protection District  
 Self-Insured Workers' Compensation Program  
 Estimated Liability for Unpaid Loss and LAE at June 30, 2015

Year	Case Reserves	IBNR Reserves	Total Outstanding
Prior	\$8,664	\$1,869	\$10,533
1995-96	12,372	1,614	13,986
1996-97	50,556	8,183	58,739
1997-98	14,491	8,136	22,627
1998-99	5,553	22,182	27,735
1999-00	27,498	13,236	40,734
2000-01	5,018	22,312	27,330
2001-02	26,459	54,807	81,266
2002-03	20,062	13,909	33,971
2003-04	217,663	22,841	240,504
2004-05	46,904	22,480	69,384
2005-06	18,153	37,543	55,696
2006-07	0	0	0
2007-08	0	0	0
2008-09	205,430	106,301	311,731
2009-10	128,784	253,994	382,778
2010-11	68,923	290,577	359,500
2011-12	159,748	273,771	433,519
2012-13	81,937	400,831	482,768
2013-14	64,549	568,472	633,021
2014-15	0	0	0
Loss and ALAE	\$1,162,764	\$2,123,058	\$3,285,822
ULAE		254,299	254,299
Total	\$1,162,764	\$2,377,357	\$3,540,121

## **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.

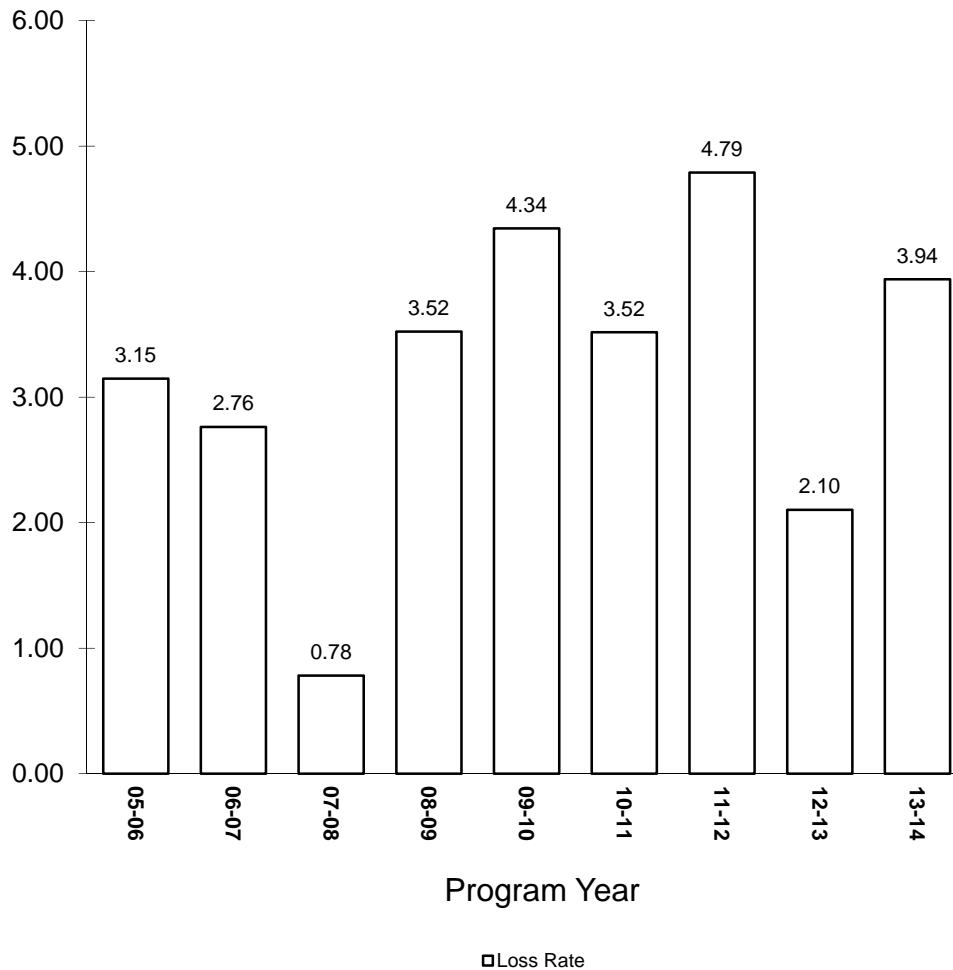
In general, we recommend that you fund each year's claims costs in that year. When surpluses or deficits have developed on outstanding liabilities and funding adjustments are necessary, they should be clearly identified as such so that the habit of funding each year's claims costs that year is maintained. 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 varied over the last nine years, ranging from a high of \$4.79 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

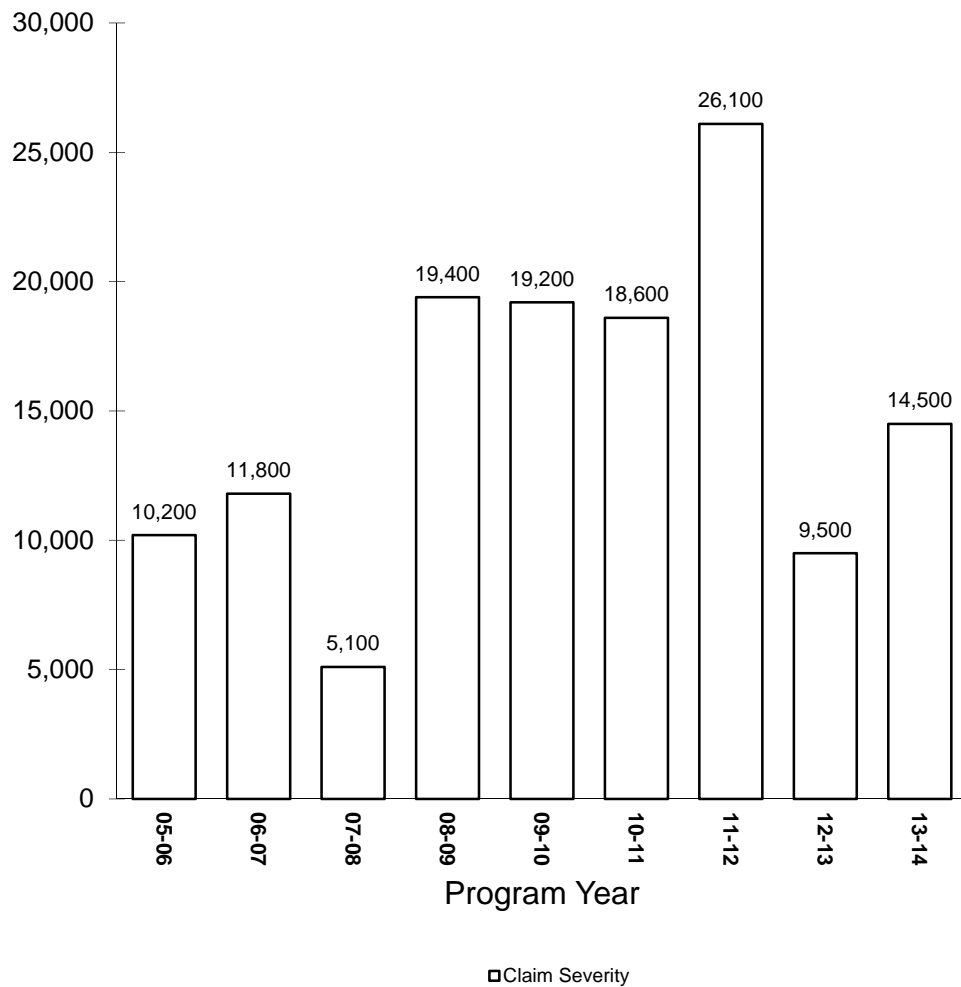
Novato Fire Protection District -  
Workers' Compensation  
Dollars of Loss per  
\$100 of Payroll



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 \$26,100 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

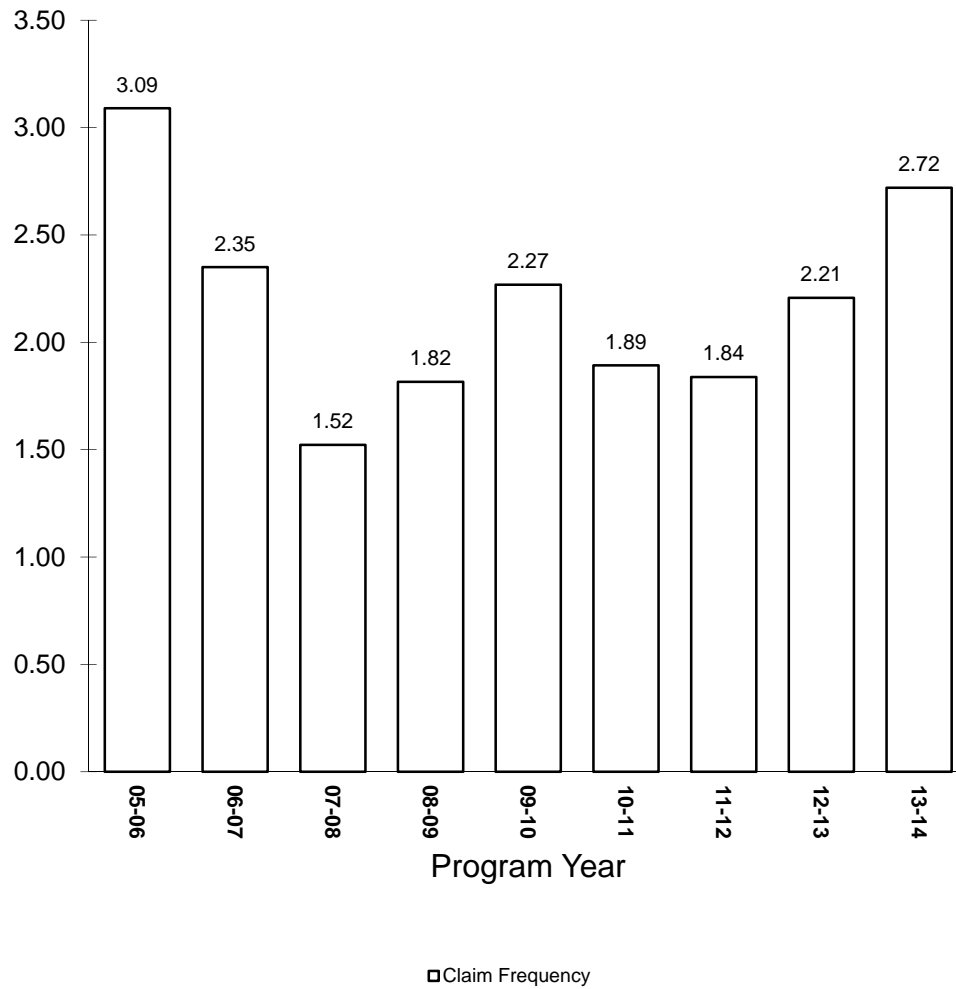
Novato Fire Protection District -  
Workers' Compensation  
Dollars of Loss per Claim



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. COMPARISON WITH PREVIOUS RESULTS

The prior report for Novato Fire Protection District was dated September 17, 2014. In the table below we display actual versus expected development of incurred losses and ALAE by accident year between the 6/30/14 evaluation date of the prior report and the 6/30/15 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	\$5,232	\$3,232
1995-96	0	0	0
1996-97	2,000	0	(2,000)
1997-98	3,000	1,000	(2,000)
1998-99	7,000	0	(7,000)
1999-00	4,000	18,061	14,061
2000-01	5,000	0	(5,000)
2001-02	14,000	0	(14,000)
2002-03	6,000	0	(6,000)
2003-04	9,000	0	(9,000)
2004-05	3,000	0	(3,000)
2005-06	11,000	0	(11,000)
2006-07	13,000	(257,520)	(270,520)
2007-08	7,000	0	(7,000)
2008-09	20,000	13,895	(6,105)
2009-10	38,000	21,695	(16,305)
2010-11	55,000	(9,170)	(64,170)
2011-12	63,000	29,269	(33,731)
2012-13	111,000	25,849	(85,151)
2013-14	190,000	110,597	(79,403)
Total	\$563,000	(\$41,092)	(\$604,092)

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 \$563,000 between the two evaluation dates. However, actual development was approximately (\$41,000); or about \$604,000 less than expected. Nearly all program years experienced less than anticipated incurred development since our prior report.

In the table below we display actual versus expected development of paid losses and ALAE by accident year between the 6/30/14 evaluation date of the prior report and the 6/30/15 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	\$11,000	\$35,863	\$24,863
1995-96	3,000	7,490	4,490
1996-97	7,000	1,360	(5,640)
1997-98	2,000	22	(1,978)
1998-99	3,000	22	(2,978)
1999-00	2,000	363	(1,637)
2000-01	3,000	22	(2,978)
2001-02	13,000	209	(12,791)
2002-03	11,000	22	(10,978)
2003-04	36,000	56,627	20,627
2004-05	7,000	194	(6,806)
2005-06	9,000	78	(8,922)
2006-07	44,000	462	(43,538)
2007-08	6,000	0	(6,000)
2008-09	47,000	49,688	2,688
2009-10	47,000	11,872	(35,128)
2010-11	43,000	31,703	(11,297)
2011-12	59,000	69,157	10,157
2012-13	65,000	70,429	5,429
2013-14	159,000	106,913	(52,087)
Total	\$577,000	\$442,496	(\$134,504)

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 \$577,000 between the two evaluation dates. However, actual development was approximately \$442,000; or about \$135,000 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	\$2,171,000	\$2,172,000	\$1,000
1995-96	121,000	121,000	0
1996-97	603,000	601,000	(2,000)
1997-98	461,000	460,000	(1,000)
1998-99	968,000	961,000	(7,000)
1999-00	430,000	445,000	15,000
2000-01	580,000	575,000	(5,000)
2001-02	1,140,000	1,127,000	(13,000)
2002-03	196,000	191,000	(5,000)
2003-04	2,034,000	2,005,000	(29,000)
2004-05	216,000	221,000	5,000
2005-06	329,000	301,000	(28,000)
2006-07	830,000	492,982	(337,018)
2007-08	135,000	92,328	(42,672)
2008-09	742,000	731,000	(11,000)
2009-10	918,000	934,000	16,000
2010-11	827,000	817,000	(10,000)
2011-12	894,000	855,000	(39,000)
2012-13	698,000	632,000	(66,000)
2013-14	976,000	872,000	(104,000)
Total	\$15,269,000	\$14,606,310	(\$662,690)

As shown, overall we have decreased our estimated ultimates by \$663,000 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, 2014 to be \$3,924,000 at the discounted, expected level. Our current estimate as of June 30, 2015, is \$2,958,000, 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, 2014	Current Report at June 30, 2015	Change
(A) Case Reserves:	\$1,646,000	\$1,163,000	(\$483,000)
(B) IBNR Reserves:	2,745,000	2,123,000	(622,000)
(C) Claims Administration Reserves:	330,000	254,000	(76,000)
(D) Total Reserves:	\$4,721,000	\$3,540,000	(\$1,181,000)
(E) Offset for Investment Income:	(797,000)	(582,000)	215,000
(F) Total Outstanding Claim Liabilities:	\$3,924,000	\$2,958,000	(\$966,000)

As shown, our estimate of outstanding claims liabilities at the discounted, expected level has decreased between June 30, 2014 and June 30, 2015 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 \$1,181,000 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 \$966,000 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, 2015.
- We received loss data evaluated as of 6/30/15 (See Appendix K). 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 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, 2015

(A) Estimated Ultimate Losses Incurred through 6/30/15: (From Appendix F)	\$14,606,000
(B) Estimated Paid Losses through 6/30/15: (From Appendix F)	11,320,000
(C) Estimated Liability for Claims Outstanding at 6/30/15: (From Appendix F)	<u>\$3,286,000</u>
(D) Estimated Liability for Outstanding Claims Administration Fees at 6/30/15: (From Not Included)	254,000
(E) Total Outstanding Liability for Claims at 6/30/15: ((C) + (D))	<u>\$3,540,000</u>
(F) Reserve Discount Factor (Based on a Discount Rate of 2.5%. (Appendix H, Page 1, (G))	0.835
(G) Discounted Outstanding Liability for Claims at 6/30/15: ((E) x (F))	<u>\$2,958,000</u>

	<u>Marginally Acceptable</u>	<u>75%</u>	<u>Recommended</u>	<u>85%</u>	<u>Conservative</u>
Confidence Level of Adequacy:	70%	75%	80%	85%	90%
(H) Confidence Level Factor: (From Appendix I)	1.140	1.203	1.278	1.370	1.493
(I) Margin for Adverse Experience: ((G) x [(H) - 1])	414,000	600,000	822,000	1,094,000	1,458,000
(J) Total Required Available Funding at 6/30/15: ((G) + (I))	<u>\$3,372,000</u>	<u>\$3,558,000</u>	<u>\$3,780,000</u>	<u>\$4,052,000</u>	<u>\$4,416,000</u>



## Novato Fire Protection District - Workers' Compensation

## IBNR as of 6/30/16 at Expected Claims Level

Accident Year	Estimated Ultimate (A)	Reported as of 6/30/15 (B)	Estimated IBNR as of 6/30/15 (C)	Estimated Percent of IBNR Reported Between 7/1/15 and 6/30/16 (D)	Estimated IBNR Reported (E)	Estimated IBNR as of 6/30/16 (F)
Prior	\$2,172,000	\$2,170,131	\$1,869	42.7%	\$1,000	\$869
1995-1996	121,000	119,386	1,614	29.8%	0	1,614
1996-1997	601,000	592,817	8,183	22.8%	2,000	6,183
1997-1998	460,000	451,864	8,136	23.2%	2,000	6,136
1998-1999	961,000	938,818	22,182	28.7%	6,000	16,182
1999-2000	445,000	431,764	13,236	22.1%	3,000	10,236
2000-2001	575,000	552,688	22,312	21.8%	5,000	17,312
2001-2002	1,127,000	1,072,193	54,807	20.7%	11,000	43,807
2002-2003	191,000	177,091	13,909	32.1%	4,000	9,909
2003-2004	2,005,000	1,982,159	22,841	16.0%	4,000	18,841
2004-2005	221,000	198,520	22,480	17.5%	4,000	18,480
2005-2006	301,000	263,457	37,543	17.1%	6,000	31,543
2006-2007	492,982	492,982	0	15.3%	0	0
2007-2008	92,328	92,328	0	15.8%	0	0
2008-2009	731,000	624,699	106,301	14.8%	16,000	90,301
2009-2010	934,000	680,006	253,994	14.6%	37,000	216,994
2010-2011	817,000	526,423	290,577	14.1%	41,000	249,577
2011-2012	855,000	581,229	273,771	18.3%	50,000	223,771
2012-2013	632,000	231,169	400,831	17.8%	71,000	329,831
2013-2014	872,000	303,528	568,472	23.0%	131,000	437,472
2014-2015	0	0	0	46.0%	0	0
Totals	\$14,606,310	\$12,483,252	\$2,123,058		\$394,000	\$1,729,058

## 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 7/1/15 and 6/30/16. 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 6/30/16. 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	\$2,185,322	\$2,276,025	\$0	\$0	\$2,252,852	\$2,172,297
1995-1996	120,580	114,933			156,832	121,000
1996-1997	600,524	588,353			720,392	601,000
1997-1998	459,546	479,798			499,356	460,000
1998-1999	961,350	1,034,058			925,412	961,000
1999-2000	445,149	453,182			433,039	445,000
2000-2001	574,796	621,605			462,410	575,000
2001-2002	1,126,875	1,209,914			863,976	1,127,000
2002-2003	190,727	193,303			303,240	191,000
2003-2004	2,005,142	2,118,673			736,808	2,005,000
2004-2005	221,350	197,556			354,740	221,000
2005-2006	300,868	331,160	323,168	370,024	481,518	301,000
2006-2007	577,775	693,626	563,782	632,173	481,597	492,982
2007-2008	111,809	137,938	121,446	147,719	167,202	92,328
2008-2009	785,247	676,700	792,369	731,596	821,974	731,000
2009-2010	894,208	973,458	904,083	956,427	933,764	934,000
2010-2011	730,149	904,478	720,654	801,407	576,631	817,000
2011-2012	882,887	943,274	827,359	819,464	605,169	855,000
2012-2013	395,761	400,688	535,897	609,254	772,984	632,000
2013-2014	660,477	861,280	740,457	823,978	1,100,231	872,000
2014-2015						
Totals						\$14,606,607

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	\$1,845,722	\$1,858,565	\$0	\$0	\$1,834,636	\$1,834,714
1995-1996	120,341	108,833			120,000	120,000
1996-1997	547,433	501,778			546,992	547,000
1997-1998	376,015	365,992			376,012	376,000
1998-1999	702,024	711,707			691,641	691,649
1999-2000	321,376	297,995			321,005	321,000
2000-2001	339,542	340,314			340,002	340,000
2001-2002	617,812	619,935			618,000	618,000
2002-2003	182,050	165,195			182,010	182,000
2003-2004	449,557	461,308			435,209	435,196
2004-2005	206,064	162,229			206,000	206,000
2005-2006	275,049	265,174	275,007	265,928	274,995	275,000
2006-2007	284,211	295,839	283,669	293,674	270,411	270,420
2007-2008	97,775	102,484	97,502	101,475	92,322	92,328
2008-2009	446,158	444,955	446,348	445,248	445,993	446,000
2009-2010	498,012	462,975	497,969	468,245	498,004	498,000
2010-2011	353,491	360,206	354,288	361,164	302,214	353,000
2011-2012	495,257	467,238	483,332	446,299	311,619	495,000
2012-2013	225,387	213,402	243,751	260,810	391,184	219,000
2013-2014	383,152	427,294	385,195	412,030	533,571	420,000
Totals						\$8,740,307

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	275,000	1.839	505,725	111,831	4.522
2006-2007	270,420	1.717	464,311	122,241	3.798
2007-2008	92,328	1.574	145,324	144,137	1.008
2008-2009	446,000	1.445	644,470	150,561	4.280
2009-2010	498,000	1.297	645,906	132,961	4.858
2010-2011	353,000	1.230	434,190	113,623	3.821
2011-2012	495,000	1.216	601,920	114,090	5.276
2012-2013	219,000	1.196	261,924	112,229	2.334
2013-2014	420,000	1.128	473,760	112,052	4.228
Totals	\$3,068,748		\$4,177,530	\$1,113,725	\$3.751
10/11-13/14	1,487,000		1,771,794	451,994	3.920
11/12-13/14	1,134,000		1,337,604	338,371	3.953
			(F) Selected Limited Rate:		\$3.950
			Prior 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 6/30/15 (B)	Reported Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Reported Losses of 6/30/15 (E)	Reported Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$1,834,714	1.006	\$1,845,722	\$2,170,131	1.007	\$2,185,322
1995-1996	119,386	1.008	120,341	119,386	1.010	120,580
1996-1997	542,013	1.010	547,433	592,817	1.013	600,524
1997-1998	371,556	1.012	376,015	451,864	1.017	459,546
1998-1999	691,649	1.015	702,024	938,818	1.024	961,350
1999-2000	315,694	1.018	321,376	431,764	1.031	445,149
2000-2001	332,558	1.021	339,542	552,688	1.040	574,796
2001-2002	603,332	1.024	617,812	1,072,193	1.051	1,126,875
2002-2003	177,091	1.028	182,050	177,091	1.077	190,727
2003-2004	435,196	1.033	449,557	247,127	1.093	2,005,142
2004-2005	198,520	1.038	206,064	198,520	1.115	221,350
2005-2006	263,457	1.044	275,049	263,457	1.142	300,868
2006-2007	270,420	1.051	284,211	492,982	1.172	577,775
2007-2008	92,328	1.059	97,775	92,328	1.211	111,809
2008-2009	417,360	1.069	446,158	624,699	1.257	785,247
2009-2010	461,122	1.080	498,012	680,006	1.315	894,208
2010-2011	324,006	1.091	353,491	526,423	1.387	730,149
2011-2012	447,387	1.107	495,257	581,229	1.519	882,887
2012-2013	196,673	1.146	225,387	231,169	1.712	395,761
2013-2014	301,220	1.272	383,152	303,528	2.176	660,477
Totals	\$8,395,682		\$8,766,428	\$10,748,220		\$14,230,542

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
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	263,457
2006-2007				199,119	199,163	195,834	191,002	269,969	270,420	
2007-2008			90,329	103,531	101,166	92,328	92,328	92,328		
2008-2009		251,445	320,622	316,228	334,158	406,082	417,360			
2009-2010	232,664	366,450	405,916	439,557	439,557	461,122				
2010-2011	83,426	313,206	322,614	327,175	324,006					
2011-2012	394,274	400,745	461,963	447,387						
2012-2013	143,788	205,320	196,673							
2013-2014	192,931	301,220								
2014-2015										

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
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	1.000
2005-2006					0.961	1.022	1.018	1.000	1.000	
2006-2007				1.000	0.983	0.975	1.413	1.002		
2007-2008			1.146	0.977	0.913	1.000	1.000			
2008-2009		1.275	0.986	1.057	1.215	1.028				
2009-2010	1.575	1.108	1.083	1.000	1.049					
2010-2011	3.754	1.030	1.014	0.990						
2011-2012	1.016	1.153	0.968							
2012-2013	1.428	0.958								
2013-2014	1.561									
	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	1.105	1.039	1.005	1.024	1.041	1.107	1.005	1.028	0.994
3-yr	1.241	1.067	1.020	1.014	1.097	1.009	1.154	1.007	1.000	1.000
4-yr	1.499	1.079	1.013	1.010	1.076	1.013	1.142	1.004	1.021	1.000
Industry Factors	1.470	1.120	1.025	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Prior	1.500	1.130	1.040	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Selected	1.550	1.110	1.035	1.015	1.010	1.010	1.009	1.008	1.007	1.006
Cumulated	1.972	1.272	1.146	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 6/30/15 (B)	Paid Loss Development Factor (C)	Ultimate Limited Losses (D)	Program Paid Losses of 6/30/15 (E)	Paid Loss Development Factor (F)	Ultimate Program Losses (G)
Prior	\$1,834,714	1.013	\$1,858,565	\$2,161,467	1.053	\$2,276,025
1995-1996	107,014	1.017	108,833	107,014	1.074	114,933
1996-1997	491,457	1.021	501,778	542,261	1.085	588,353
1997-1998	357,065	1.025	365,992	437,373	1.097	479,798
1998-1999	691,649	1.029	711,707	933,265	1.108	1,034,058
1999-2000	288,196	1.034	297,995	404,266	1.121	453,182
2000-2001	327,540	1.039	340,314	547,670	1.135	621,605
2001-2002	593,239	1.045	619,935	1,045,734	1.157	1,209,914
2002-2003	157,029	1.052	165,195	157,029	1.231	193,303
2003-2004	435,196	1.060	461,308	303,754	1.263	2,118,673
2004-2005	151,616	1.070	162,229	151,616	1.303	197,556
2005-2006	245,304	1.081	265,174	245,304	1.350	331,160
2006-2007	270,420	1.094	295,839	492,982	1.407	693,626
2007-2008	92,328	1.110	102,484	92,328	1.494	137,938
2008-2009	393,070	1.132	444,955	419,269	1.614	676,700
2009-2010	396,044	1.169	462,975	551,222	1.766	973,458
2010-2011	296,222	1.216	360,206	457,500	1.977	904,478
2011-2012	365,887	1.277	467,238	421,481	2.238	943,274
2012-2013	149,232	1.430	213,402	149,232	2.685	400,688
2013-2014	238,979	1.788	427,294	238,979	3.604	861,280
Totals	\$7,882,201		\$8,633,418	\$9,859,746		\$15,210,002

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
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	245,304
2006-2007				168,817	169,486	170,008	177,620	269,969	270,420	
2007-2008			83,481	89,548	92,317	92,328	92,328	92,328		
2008-2009		210,080	256,345	290,708	300,987	369,391	393,070			
2009-2010	124,420	310,072	383,196	384,354	385,613	396,044				
2010-2011	69,290	250,949	273,840	283,239	296,222					
2011-2012	204,347	308,818	317,510	365,887						
2012-2013	53,919	78,803	149,232							
2013-2014	132,066	238,979								
2014-2015										

Paid Loss Development Factors:

Accident Year	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
	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	1.001
2005-2006					1.016	1.002	1.023	1.001	1.000	
2006-2007				1.004	1.003	1.045	1.520	1.002		
2007-2008			1.073	1.031	1.000	1.000	1.000			
2008-2009		1.220	1.134	1.035	1.227	1.064				
2009-2010	2.492	1.236	1.003	1.003	1.027					
2010-2011	3.622	1.091	1.034	1.046						
2011-2012	1.511	1.028	1.152							
2012-2013	1.462	1.894								
2013-2014	1.810									

	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	1.294	1.079	1.024	1.055	1.024	1.110	1.002	1.010	1.001
3-yr	1.605	1.160	1.060	1.026	1.101	1.050	1.192	1.002	1.001	1.001
4-yr	1.909	1.185	1.076	1.026	1.084	1.037	1.150	1.001	1.007	1.000
Industry Factors	2.500	1.400	1.170	1.090	1.050	1.033	1.020	1.015	1.012	1.010
Prior	2.350	1.200	1.100	1.050	1.040	1.033	1.020	1.015	1.012	1.010
Selected	2.150	1.250	1.120	1.050	1.040	1.033	1.020	1.015	1.012	1.010
Cumulated	3.844	1.788	1.430	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 6/30/15 (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	111,831	263,457	1.142	0.124	4.306	59,711	323,168
2006-2007	122,241	492,982	1.172	0.147	3.940	70,800	563,782
2007-2008	144,137	92,328	1.211	0.174	1.161	29,118	121,446
2008-2009	150,561	624,699	1.257	0.204	5.459	167,670	792,369
2009-2010	132,961	680,006	1.315	0.240	7.022	224,077	904,083
2010-2011	113,623	526,423	1.387	0.279	6.127	194,231	720,654
2011-2012	114,090	581,229	1.519	0.342	6.308	246,130	827,359
2012-2013	112,229	231,169	1.712	0.416	6.527	304,728	535,897
2013-2014	112,052	303,528	2.176	0.540	7.221	436,929	740,457
Totals	\$1,113,725	\$3,795,821				\$1,733,394	\$5,529,215

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 6/30/15 (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	111,831	245,304	1.350	0.259	4.306	124,720	370,024
2006-2007	122,241	492,982	1.407	0.289	3.940	139,191	632,173
2007-2008	144,137	92,328	1.494	0.331	1.161	55,391	147,719
2008-2009	150,561	419,269	1.614	0.380	5.459	312,327	731,596
2009-2010	132,961	551,222	1.766	0.434	7.022	405,205	956,427
2010-2011	113,623	457,500	1.977	0.494	6.127	343,907	801,407
2011-2012	114,090	421,481	2.238	0.553	6.308	397,983	819,464
2012-2013	112,229	149,232	2.685	0.628	6.527	460,022	609,254
2013-2014	112,052	238,979	3.604	0.723	7.221	584,999	823,978
Totals	\$1,113,725	\$3,068,297				\$2,823,745	\$5,892,042

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	111,831	275,000	1.839	505,725	4.522	2.459	1.751	4.306
2006-2007	122,241	270,420	1.717	464,311	3.798	2.212	1.781	3.940
2007-2008	144,137	92,328	1.574	145,324	1.008	0.641	1.811	1.161
2008-2009	150,561	446,000	1.445	644,470	4.280	2.962	1.843	5.459
2009-2010	132,961	498,000	1.297	645,906	4.858	3.745	1.875	7.022
2010-2011	113,623	353,000	1.230	434,190	3.821	3.211	1.908	6.127
2011-2012	114,090	495,000	1.216	601,920	5.276	3.248	1.942	6.308
2012-2013	112,229	219,000	1.196	261,924	2.334	3.303	1.976	6.527
2013-2014	112,052	427,000	1.128	481,656	4.299	3.502	2.062	7.221
Total/Avg	\$1,113,725	\$3,075,748		\$4,185,426	\$3.758			
10/11-/	451,994	1,494,000		1,779,690	\$3.937			
11/12-/	338,371	1,141,000		1,345,500	\$3.976			
				Selected Limited Rate:	\$3.950			
				Prior 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 2009-2010 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	\$9,233	244	\$2,252,852
1995-1996	4,901	32	156,832
1996-1997	21,188	34	720,392
1997-1998	19,206	26	499,356
1998-1999	29,852	31	925,412
1999-2000	13,969	31	433,039
2000-2001	17,785	26	462,410
2001-2002	35,999	24	863,976
2002-2003	10,108	30	303,240
2003-2004	23,768	31	736,808
2004-2005	17,737	20	354,740
2005-2006	17,834	27	481,518
2006-2007	20,939	23	481,597
2007-2008	9,289	18	167,202
2008-2009	35,738	23	821,974
2009-2010	35,914	26	933,764
2010-2011	30,349	19	576,631
2011-2012	31,851	19	605,169
2012-2013	33,608	23	772,984
2013-2014	37,939	29	1,100,231
Total		736	\$13,650,127

## 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	\$1,834,714	244	\$7,519	3.264	\$24,542	\$7,519	1.228	\$9,233
1995-1996	120,000	32	3,750	2.749	10,309	3,750	1.307	4,901
1996-1997	547,000	34	16,088	2.402	38,643	16,088	1.317	21,188
1997-1998	376,000	26	14,462	2.030	29,358	14,462	1.328	19,206
1998-1999	691,649	31	22,311	1.758	39,223	22,311	1.338	29,852
1999-2000	321,000	31	10,355	1.529	15,833	10,355	1.349	13,969
2000-2001	340,000	26	13,077	1.399	18,295	13,077	1.360	17,785
2001-2002	618,000	24	25,750	1.367	35,200	25,750	1.398	35,999
2002-2003	182,000	30	6,067	1.408	8,542	6,067	1.666	10,108
2003-2004	435,196	31	14,039	1.704	23,922	14,039	1.693	23,768
2004-2005	206,000	20	10,300	2.140	22,042	10,300	1.722	17,737
2005-2006	275,000	27	10,185	2.244	22,855	10,185	1.751	17,834
2006-2007	270,420	23	11,757	2.053	24,137	11,757	1.781	20,939
2007-2008	92,328	18	5,129	1.844	9,458	5,129	1.811	9,289
2008-2009	446,000	23	19,391	1.660	32,189	19,391	1.843	35,738
2009-2010	498,000	26	19,154	1.461	27,984	19,154	1.875	35,914
2010-2011	353,000	19	18,579	1.358	25,230	15,906	1.908	30,349
2011-2012	495,000	19	26,053	1.317	34,312	16,401	1.942	31,851
2012-2013	219,000	23	9,522	1.270	12,093	17,008	1.976	33,608
2013-2014	420,000	29	14,483	1.174	17,003	18,399	2.062	37,939

Average Limited Severity: \$23,559  
Average 10/11-13/14 Limited Severity: \$22,160  
Average 11/12-13/14 Limited Severity: \$21,136

Selected Limited Severity: \$21,600  
Prior 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	244	244	244	0		0.655	
1995-1996	32	31	32	0		0.668	
1996-1997	34	32	34	0		0.682	
1997-1998	26	25	26	0		0.696	
1998-1999	31	30	31	0		0.710	
1999-2000	31	29	31	0		0.725	
2000-2001	26	25	26	0		0.740	
2001-2002	24	22	24	0		0.755	
2002-2003	30	29	30	0		0.769	
2003-2004	31	30	31	0		0.785	
2004-2005	20	19	20	0		0.801	
2005-2006	27	27	27	11	2.414	0.817	1.972
2006-2007	23	24	23	12	1.882	0.834	1.570
2007-2008	18	19	18	14	1.249	0.851	1.063
2008-2009	23	21	23	15	1.528	0.868	1.326
2009-2010	26	24	26	13	1.955	0.886	1.732
2010-2011	19	17	19	11	1.672	0.904	1.511
2011-2012	19	16	19	11	1.665	0.922	1.535
2012-2013	23	25	23	11	2.049	0.942	1.930
2013-2014	29	29	29	11	2.588	0.961	2.487
Total	736	718	736	111.373			1.650

(H) Selected 2015-2016 Frequency: 2.000  
Prior 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 2.000 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 6/30/2015 (A)	Reported Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	244	1.000	244	
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	1.973
2006-2007	23	1.000	23	1.569
2007-2008	18	1.000	18	1.063
2008-2009	23	1.001	23	1.326
2009-2010	26	1.002	26	1.733
2010-2011	19	1.004	19	1.512
2011-2012	19	1.007	19	1.535
2012-2013	23	1.011	23	1.931
2013-2014	28	1.018	29	2.487
Total	735		736	1.650

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 6/30/2015 (A)	Closed Claim Development Factor (B)	Ultimate Claims (C)	Trended Claim Frequency (D)
Prior	243	1.005	244	
1995-1996	31	1.006	31	
1996-1997	32	1.007	32	
1997-1998	25	1.008	25	
1998-1999	30	1.009	30	
1999-2000	29	1.010	29	
2000-2001	25	1.011	25	
2001-2002	22	1.012	22	
2002-2003	29	1.013	29	
2003-2004	30	1.015	30	
2004-2005	19	1.018	19	
2005-2006	26	1.022	27	1.973
2006-2007	23	1.027	24	1.637
2007-2008	18	1.035	19	1.122
2008-2009	20	1.045	21	1.211
2009-2010	23	1.061	24	1.599
2010-2011	16	1.088	17	1.353
2011-2012	14	1.121	16	1.293
2012-2013	21	1.177	25	2.098
2013-2014	23	1.271	29	2.487
Total	699		718	1.610

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
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	30
2003-2004							35	35	35	35	31	31	
2004-2005						25	25	25	25	20	20		
2005-2006					29	29	29	29	27	27			
2006-2007				24	24	25	25	23	23				
2007-2008			20	20	20	20	18	18					
2008-2009		22	22	23	23	23	23						
2009-2010	24	26	26	27	26	26							
2010-2011	24	25	25	19	19								
2011-2012	23	24	19	19									
2012-2013	21	23	23										
2013-2014	28	28											
2014-2015													

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
1994-1995													
1995-1996													
1996-1997													
1997-1998													1.000
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	
2003-2004							1.000	1.000	1.000	0.886	1.000		
2004-2005						1.000	1.000	1.000	0.800	1.000			
2005-2006					1.000	1.000	1.000	0.931	1.000				
2006-2007				1.000	1.042	1.000	0.920	1.000					
2007-2008			1.000	1.000	1.000	0.900	1.000						
2008-2009		1.000	1.045	1.000	1.000	1.000							
2009-2010	1.083	1.000	1.038	0.963	1.000								
2010-2011	1.042	1.000	0.760	1.000									
2011-2012	1.043	0.792	1.000										
2012-2013	1.095	1.000											
2013-2014	1.000												
Average	1.053	0.958	0.969	0.993	1.008	0.980	0.984	0.986	0.960	0.977	1.000	0.992	0.986
Claim-weighted Averages													
3-yr	1.042	0.931	0.929	0.986	1.000	0.971	0.972	0.974	0.943	0.953	1.000	0.988	0.976
4-yr	1.042	0.949	0.957	0.989	1.011	0.979	0.979	0.982	0.957	0.964	1.000	0.991	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	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
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
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

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
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	29
2003-2004							32	32	32	32	30	30	
2004-2005						24	24	24	24	19	19		
2005-2006					27	27	27	28	26	26			
2006-2007				21	21	23	24	22	23				
2007-2008			18	18	19	20	18	18					
2008-2009		19	19	20	20	21	20						
2009-2010	17	21	22	24	23	23							
2010-2011	19	20	21	15	16								
2011-2012	11	19	13	14									
2012-2013	15	19	21										
2013-2014	23	23											
2014-2015													

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
1994-1995													
1995-1996													
1996-1997													
1997-1998													1.000
1998-1999												1.000	1.000
1999-2000											1.000	1.000	0.968
2000-2001										1.037	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	
2003-2004							1.000	1.000	1.000	0.938	1.000		
2004-2005						1.000	1.000	1.000	0.792	1.000			
2005-2006					1.000	1.000	1.037	0.929	1.000				
2006-2007				1.000	1.095	1.043	0.917	1.045					
2007-2008			1.000	1.056	1.053	0.900	1.000						
2008-2009		1.000	1.053	1.000	1.050	0.952							
2009-2010	1.235	1.048	1.091	0.958	1.000								
2010-2011	1.053	1.050	0.714	1.067									
2011-2012	1.727	0.684	1.077										
2012-2013	1.267	1.105											
2013-2014	1.000												
Average	1.256	0.977	0.987	1.016	1.040	0.979	0.991	0.995	0.967	0.995	1.000	0.991	0.972
Claim-weighted Averages													
3-yr	1.245	0.948	0.946	1.000	1.032	0.969	0.986	0.986	0.939	0.975	1.000	0.988	0.951
4-yr	1.191	0.975	0.973	1.013	1.048	0.978	0.989	0.991	0.955	0.981	1.000	0.991	0.965
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	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
Selected	1.500	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	1.907	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
		2015-2016 Loss Rate Level (B)	2016-2017 Loss Rate Level (C)	2017-2018 Loss Rate Level (D)	2018-2019 Loss Rate Level (E)	2015-2016 Frequency Level (F)	2016-2017 Frequency Level (G)	2017-2018 Frequency Level (H)	2018-2019 Frequency Level (I)	2015-2016 Severity Level (J)
1993-1994	1.944	2.153	2.193	2.233	2.274	0.655	0.642	0.629	0.616	3.264
1995-1996	1.678	1.849	1.883	1.917	1.953	0.668	0.655	0.642	0.629	2.749
1996-1997	1.503	1.647	1.677	1.708	1.740	0.682	0.669	0.655	0.642	2.402
1997-1998	1.302	1.419	1.445	1.471	1.499	0.696	0.682	0.668	0.655	2.030
1998-1999	1.156	1.253	1.276	1.299	1.323	0.710	0.696	0.682	0.668	1.758
1999-2000	1.031	1.112	1.132	1.153	1.174	0.725	0.710	0.696	0.682	1.529
2000-2001	0.966	1.038	1.057	1.076	1.096	0.740	0.725	0.710	0.696	1.399
2001-2002	0.968	1.035	1.054	1.073	1.093	0.755	0.740	0.724	0.710	1.367
2002-2003	1.022	1.087	1.107	1.127	1.148	0.769	0.754	0.739	0.724	1.408
2003-2004	1.267	1.342	1.367	1.392	1.418	0.785	0.770	0.754	0.739	1.704
2004-2005	1.631	1.719	1.751	1.783	1.816	0.801	0.785	0.769	0.754	2.140
2005-2006	1.753	1.839	1.873	1.907	1.943	0.817	0.801	0.785	0.769	2.244
2006-2007	1.644	1.717	1.748	1.780	1.813	0.834	0.818	0.801	0.785	2.053
2007-2008	1.514	1.574	1.603	1.632	1.662	0.851	0.834	0.817	0.801	1.844
2008-2009	1.396	1.445	1.471	1.498	1.526	0.868	0.851	0.834	0.817	1.660
2009-2010	1.260	1.297	1.321	1.345	1.370	0.886	0.869	0.851	0.834	1.461
2010-2011	1.200	1.230	1.252	1.275	1.299	0.904	0.886	0.868	0.851	1.358
2011-2012	1.193	1.216	1.239	1.261	1.285	0.922	0.904	0.886	0.868	1.317
2012-2013	1.179	1.196	1.218	1.241	1.264	0.942	0.923	0.904	0.886	1.270
2013-2014	1.117	1.128	1.149	1.170	1.192	0.961	0.942	0.922	0.904	1.174
2014-2015	1.033	1.038	1.057	1.076	1.096	0.980	0.960	0.941	0.922	1.059
2015-2016	1.000	1.000	1.018	1.037	1.056	1.000	0.980	0.960	0.941	1.000
2016-2017	0.987	--	1.000	1.018	1.037	--	1.000	0.980	0.960	--
2017-2018	0.974	--	--	1.000	1.018	--	--	1.000	0.980	--
2018-2019	0.961	--	--	--	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

Accident Year	Calendar Period										
	As of 6/30/2015	7/1/2015 to 6/30/2016	7/1/2016 to 6/30/2017	7/1/2017 to 6/30/2018	7/1/2018 to 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
<b>Prior</b>											
Ultimate Loss	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000	\$4,315,000
Paid in Calendar Period	-	17,531	22,052	12,991	11,661	10,238	8,743	7,469	6,379	5,438	4,637
Paid to Date	4,181,380	4,198,911	4,220,963	4,233,954	4,245,615	4,255,853	4,264,596	4,272,065	4,278,444	4,283,882	4,288,519
Outstanding Liability	133,620	116,089	94,037	81,046	69,385	59,147	50,404	42,935	36,556	31,118	26,481
<b>1999-2000</b>											
Ultimate Loss	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000	\$445,000
Paid in Calendar Period	-	3,951	3,421	3,803	3,547	3,473	3,313	2,826	2,427	2,068	1,762
Paid to Date	404,266	408,217	411,638	415,441	418,988	422,461	425,774	428,600	431,027	433,095	434,857
Outstanding Liability	40,734	36,783	33,362	29,559	26,012	22,539	19,226	16,400	13,973	11,905	10,143
<b>2000-2001</b>											
Ultimate Loss	\$575,000	\$575,000	\$575,000	\$575,000	\$575,000	\$575,000	\$575,000	\$575,000	\$575,000	\$575,000	\$575,000
Paid in Calendar Period	-	2,542	2,404	2,362	2,283	2,129	2,084	1,988	1,696	1,457	1,241
Paid to Date	547,670	550,212	552,616	554,978	557,261	559,390	561,474	563,462	565,158	566,615	567,856
Outstanding Liability	27,330	24,788	22,384	20,022	17,739	15,610	13,526	11,538	9,842	8,385	7,144
<b>2001-2002</b>											
Ultimate Loss	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000	\$1,127,000
Paid in Calendar Period	-	9,996	6,628	6,270	6,158	5,952	5,551	5,435	5,186	4,423	3,799
Paid to Date	1,045,734	1,055,730	1,062,358	1,068,628	1,074,786	1,080,738	1,086,289	1,091,724	1,096,910	1,101,333	1,105,132
Outstanding Liability	81,266	71,270	64,642	58,372	52,214	46,262	40,711	35,276	30,090	25,667	21,868
<b>2002-2003</b>											
Ultimate Loss	\$191,000	\$191,000	\$191,000	\$191,000	\$191,000	\$191,000	\$191,000	\$191,000	\$191,000	\$191,000	\$191,000
Paid in Calendar Period	-	9,410	3,021	2,003	1,895	1,861	1,799	1,678	1,643	1,567	1,337
Paid to Date	157,029	166,439	169,460	171,463	173,358	175,219	177,018	178,696	180,339	181,906	183,243
Outstanding Liability	33,971	24,561	21,540	19,537	17,642	15,781	13,982	12,304	10,661	9,094	7,757
<b>2003-2004</b>											
Ultimate Loss	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000	\$2,005,000
Paid in Calendar Period	-	23,810	60,024	19,270	12,778	12,088	11,872	11,475	10,702	10,478	9,997
Paid to Date	1,764,496	1,788,306	1,848,330	1,867,600	1,880,378	1,892,466	1,904,338	1,915,813	1,926,515	1,936,993	1,946,990
Outstanding Liability	240,504	216,694	156,670	137,400	124,622	112,534	100,662	89,187	78,485	68,007	58,010

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

Accident Year	Calendar Period										
	As of 6/30/2015	7/1/2015 to 6/30/2016	7/1/2016 to 6/30/2017	7/1/2017 to 6/30/2018	7/1/2018 to 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
2004-2005											
Ultimate Loss	\$221,000	\$221,000	\$221,000	\$221,000	\$221,000	\$221,000	\$221,000	\$221,000	\$221,000	\$221,000	\$221,000
Paid in Calendar Period	-	7,285	6,148	15,498	4,976	3,299	3,121	3,066	2,963	2,763	2,705
Paid to Date	151,616	158,901	165,049	180,547	185,523	188,822	191,943	195,009	197,972	200,735	203,440
Outstanding Liability	69,384	62,099	55,951	40,453	35,477	32,178	29,057	25,991	23,028	20,265	17,560
2005-2006											
Ultimate Loss	\$301,000	\$301,000	\$301,000	\$301,000	\$301,000	\$301,000	\$301,000	\$301,000	\$301,000	\$301,000	\$301,000
Paid in Calendar Period	-	5,737	5,246	8,540	10,020	3,217	2,133	2,018	1,982	1,916	1,786
Paid to Date	245,304	251,041	256,287	264,827	274,847	278,064	280,197	282,215	284,197	286,113	287,899
Outstanding Liability	55,696	49,959	44,713	36,173	26,153	22,936	20,803	18,785	16,803	14,887	13,101
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
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
Outstanding Liability											
2008-2009											
Ultimate Loss	\$731,000	\$731,000	\$731,000	\$731,000	\$731,000	\$731,000	\$731,000	\$731,000	\$731,000	\$731,000	\$731,000
Paid in Calendar Period	-	40,837	33,862	24,651	21,875	20,003	32,566	38,209	12,267	8,134	7,695
Paid to Date	419,269	460,106	493,968	518,619	540,494	560,497	593,063	631,272	643,539	651,673	659,368
Outstanding Liability	311,731	270,894	237,032	212,381	190,506	170,503	137,937	99,728	87,461	79,327	71,632
2009-2010											
Ultimate Loss	\$934,000	\$934,000	\$934,000	\$934,000	\$934,000	\$934,000	\$934,000	\$934,000	\$934,000	\$934,000	\$934,000
Paid in Calendar Period	-	47,082	43,976	36,465	26,547	23,557	21,541	35,070	41,146	13,209	8,759
Paid to Date	551,222	598,304	642,280	678,745	705,292	728,849	750,390	785,460	826,606	839,815	848,574
Outstanding Liability	382,778	335,696	291,720	255,255	228,708	205,151	183,610	148,540	107,394	94,185	85,426

Novato Fire Protection District - Workers' Compensation

Payment and Reserve Forecast

Accident Year	Calendar Period											
	As of 6/30/2015	7/1/2015 to 6/30/2016	7/1/2016 to 6/30/2017	7/1/2017 to 6/30/2018	7/1/2018 to 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	
<b>2010-2011</b>												
Ultimate Loss	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000	\$817,000
Paid in Calendar Period	-	43,859	38,824	36,263	30,069	21,890	19,425	17,763	28,919	33,929	10,893	
Paid to Date	457,500	501,359	540,183	576,446	606,515	628,405	647,830	665,593	694,512	728,441	739,334	
Outstanding Liability	359,500	315,641	276,817	240,554	210,485	188,595	169,170	151,407	122,488	88,559	77,666	
<b>2011-2012</b>												
Ultimate Loss	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000	\$855,000
Paid in Calendar Period	-	46,387	47,230	41,808	39,050	32,381	23,573	20,918	19,128	31,141	36,537	
Paid to Date	421,481	467,868	515,098	556,906	595,956	628,337	651,910	672,828	691,956	723,097	759,634	
Outstanding Liability	433,519	387,132	339,902	298,094	259,044	226,663	203,090	182,172	163,044	131,903	95,366	
<b>2012-2013</b>												
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	-	57,449	45,509	46,337	41,017	38,312	31,768	23,127	20,523	18,766	30,552	
Paid to Date	149,232	206,681	252,190	298,527	339,544	377,856	409,624	432,751	453,274	472,040	502,592	
Outstanding Liability	482,768	425,319	379,810	333,473	292,456	254,144	222,376	199,249	178,726	159,960	129,408	
<b>2013-2014</b>												
Ultimate Loss	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000	\$872,000
Paid in Calendar Period	-	82,926	65,461	51,856	52,799	46,737	43,655	36,198	26,352	23,385	21,383	
Paid to Date	238,979	321,905	387,366	439,222	492,021	538,758	582,413	618,611	644,963	668,348	689,731	
Outstanding Liability	633,021	550,095	484,634	432,778	379,979	333,242	289,587	253,389	227,037	203,652	182,269	
<b>Summary</b>												
Ultimate Loss	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310	\$14,606,310
Ultimate Loss at 80%	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000	15,520,000
Paid at Expected in Calendar Period	-	398,802	383,806	308,117	264,675	225,137	211,144	207,240	181,313	158,674	143,083	
Paid at 80% in Calendar Period		509,900	490,504	393,774	338,255	287,725	269,842	264,853	231,718	202,785	182,860	
Total Paid to Date at Expected	11,320,488	11,719,290	12,103,096	12,411,213	12,675,888	12,901,025	13,112,169	13,319,409	13,500,722	13,659,396	13,802,479	
Total Paid to Date at 80%		11,830,388	12,320,893	12,714,666	13,052,921	13,340,646	13,610,488	13,875,341	14,107,059	14,309,844	14,492,704	
Outstanding Liability at Expected	3,285,822	2,887,020	2,503,214	2,195,097	1,930,422	1,705,285	1,494,141	1,286,901	1,105,588	946,914	803,831	
Outstanding Liability at 80%	4,199,281	3,689,612	3,199,107	2,805,334	2,467,079	2,179,354	1,909,512	1,644,659	1,412,941	1,210,156	1,027,296	
Total Outstanding ULAE at Expected	254,299	202,109	163,421	132,608	107,183	86,633	70,023	56,597	45,746	36,975	29,886	
Total Outstanding ULAE at 80%	324,994	258,295	208,852	169,473	136,980	110,717	89,489	72,331	58,463	47,254	38,194	
Total Outstanding Liability at Expected	3,540,121	3,089,129	2,666,635	2,327,705	2,037,605	1,791,918	1,564,164	1,343,498	1,151,334	983,889	833,717	
Total Outstanding Liability at 80%	4,524,275	3,947,907	3,407,960	2,974,807	2,604,059	2,290,071	1,999,001	1,716,991	1,471,405	1,257,410	1,065,490	

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, \$82,926 is expected to be paid between 7/1/15 and 6/30/16, \$321,905 will have been paid by 6/30/16, and the reserve for remaining payments on these claims should be \$550,095.
- 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, \$65,461 = \$550,095 x 11.9%.
- Paid to Date is Paid in Calendar Period plus Paid to Date from previous calendar period. For example, \$387,366 = \$65,461 + \$321,905.
- Outstanding Liability is Ultimate Loss minus Paid to Date. For example, \$550,095 = \$872,000 - \$321,905.

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 6/30/15:</u>		<u>Expected</u>	<u>Discounted</u>
<u>Current (Short Term)</u>	Loss and ALAE:	\$398,802	\$393,909
	ULAE:	52,190	51,550
	Short-Term Loss and LAE:	<u>\$450,992</u>	<u>\$445,459</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$2,887,020	\$2,351,377
	ULAE:	202,109	160,915
	Long-Term Loss and LAE:	<u>\$3,089,129</u>	<u>\$2,512,292</u>
<u>Total Liability</u>	Loss and ALAE:	\$3,285,822	\$2,745,286
	ULAE:	254,299	212,465
	Total Loss and LAE:	<u>\$3,540,121</u>	<u>\$2,957,751</u>

<u>Liabilities as of 6/30/16:</u>			
<u>Current (Short Term)</u>	Loss and ALAE:	\$383,806	\$379,097
	ULAE:	38,688	38,213
	Short-Term Loss and LAE:	<u>\$422,494</u>	<u>\$417,310</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$2,503,214	\$2,042,767
	ULAE:	163,421	131,332
	Long-Term Loss and LAE:	<u>\$2,666,635</u>	<u>\$2,174,099</u>
<u>Total Liability</u>	Loss and ALAE:	\$2,887,020	\$2,421,864
	ULAE:	202,109	169,545
	Total Loss and LAE:	<u>\$3,089,129</u>	<u>\$2,591,409</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 6/30/15:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$449,056	\$473,873	\$503,416	\$539,655	\$588,106
	ULAE:	58,767	62,015	65,881	70,624	76,964
	Short-Term Loss and LAE:	<u>\$507,823</u>	<u>\$535,888</u>	<u>\$569,297</u>	<u>\$610,279</u>	<u>\$665,070</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$2,680,570	\$2,828,706	\$3,005,060	\$3,221,387	\$3,510,606
	ULAE:	183,443	193,580	205,649	220,453	240,246
	Long-Term Loss and LAE:	<u>\$2,864,013</u>	<u>\$3,022,286</u>	<u>\$3,210,709</u>	<u>\$3,441,840</u>	<u>\$3,750,852</u>
<u>Total Liability</u>	Loss and ALAE:	\$3,129,626	\$3,302,579	\$3,508,476	\$3,761,042	\$4,098,712
	ULAE:	242,210	255,595	271,530	291,077	317,210
	Total Loss and LAE:	<u>\$3,371,836</u>	<u>\$3,558,174</u>	<u>\$3,780,006</u>	<u>\$4,052,119</u>	<u>\$4,415,922</u>
<u>Liabilities as of 6/30/16:</u>						
<u>Current (Short Term)</u>	Loss and ALAE:	\$432,171	\$456,054	\$484,486	\$519,363	\$565,992
	ULAE:	43,563	45,970	48,836	52,352	57,052
	Short-Term Loss and LAE:	<u>\$475,734</u>	<u>\$502,024</u>	<u>\$533,322</u>	<u>\$571,715</u>	<u>\$623,044</u>
<u>Non-Current (Long Term)</u>	Loss and ALAE:	\$2,328,754	\$2,457,448	\$2,610,656	\$2,798,591	\$3,049,851
	ULAE:	149,718	157,993	167,843	179,924	196,079
	Long-Term Loss and LAE:	<u>\$2,478,472</u>	<u>\$2,615,441</u>	<u>\$2,778,499</u>	<u>\$2,978,515</u>	<u>\$3,245,930</u>
<u>Total Liability</u>	Loss and ALAE:	\$2,760,925	\$2,913,502	\$3,095,142	\$3,317,954	\$3,615,843
	ULAE:	193,281	203,963	216,679	232,276	253,131
	Total Loss and LAE:	<u>\$2,954,206</u>	<u>\$3,117,465</u>	<u>\$3,311,821</u>	<u>\$3,550,230</u>	<u>\$3,868,974</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 6/30/15 (A)	Discount Factor (B)	Discounted Reserve at 6/30/15 (C)	Full Value of Reserve at 6/30/16 (D)	Discount Factor (E)	Discounted Reserve at 6/30/16 (F)
Prior	\$10,533	0.988	\$10,404	\$8,985	0.988	\$8,875
1995-1996	13,986	0.966	13,513	10,210	0.988	10,085
1996-1997	58,739	0.947	55,600	51,690	0.966	49,941
1997-1998	22,627	0.929	21,015	20,048	0.947	18,977
1998-1999	27,735	0.912	25,298	25,156	0.929	23,364
1999-2000	40,734	0.897	36,528	36,783	0.912	33,551
2000-2001	27,330	0.883	24,133	24,788	0.897	22,229
2001-2002	81,266	0.870	70,677	71,270	0.883	62,933
2002-2003	33,971	0.859	29,180	24,561	0.870	21,361
2003-2004	240,504	0.850	204,397	216,694	0.859	186,134
2004-2005	69,384	0.843	58,467	62,099	0.850	52,776
2005-2006	55,696	0.836	46,564	49,959	0.843	42,098
2006-2007	0	0.831	0	0	0.836	0
2007-2008	0	0.830	0	0	0.831	0
2008-2009	311,731	0.831	258,906	270,894	0.830	224,903
2009-2010	382,778	0.829	317,423	335,696	0.831	278,810
2010-2011	359,500	0.828	297,755	315,641	0.829	261,748
2011-2012	433,519	0.825	357,455	387,132	0.828	320,641
2012-2013	482,768	0.823	397,332	425,319	0.825	350,694
2013-2014	633,021	0.822	520,639	550,095	0.823	452,744
2014-2015	0	0.832	0	0	0.822	0
2015-2016	0	-	-	0	0.832	0
Totals	\$3,285,822		\$2,745,286	\$2,887,020		\$2,421,864

(G) Discount Factor at 6/30/15 for Overall Reserve: 0.835  
(H) Discount Factor at 6/30/16 for Overall Reserve: 0.839

Notes:

- (A) From Appendix F, Outstanding Liability at 6/30/15.
- (B) Based on Appendix H, Page 2, Column (E).
- (C) (A) x (B).
- (D) From Appendix F, Outstanding Liability at 6/30/16.
- (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 0.835, the discounted liability for outstanding claims is 83.5% 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	12.3%	0.121	0.123	0.988
21	1.4%	0.133	0.137	0.966
20	1.3%	0.142	0.150	0.947
19	1.3%	0.152	0.164	0.929
18	1.3%	0.161	0.177	0.912
17	1.3%	0.171	0.190	0.897
16	1.5%	0.181	0.205	0.883
15	1.4%	0.191	0.219	0.870
14	1.8%	0.204	0.237	0.859
13	2.0%	0.219	0.258	0.850
12	2.4%	0.237	0.282	0.843
11	2.6%	0.257	0.307	0.836
10	2.9%	0.280	0.337	0.831
9	4.2%	0.315	0.379	0.830
8	5.0%	0.356	0.429	0.831
7	5.1%	0.398	0.480	0.829
6	5.8%	0.446	0.538	0.828
5	5.4%	0.489	0.593	0.825
4	6.7%	0.543	0.659	0.823
3	7.8%	0.606	0.737	0.822
2	14.2%	0.732	0.879	0.832
1	12.1%	0.833	1.000	0.833

(F) Discount Factor for Future Funding: 0.844

\* 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, 73.2% = [60.6% / 1.025] + [14.2% / (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 0.84, 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	1.696
90	2.339	1.493
85	1.828	1.370
80	1.495	1.278
75	1.253	1.203
70	1.065	1.140
65	0.912	1.084
60	0.785	1.033
55	0.675	0.987
50	0.580	0.942
45	0.496	0.900
40	0.421	0.859
35	0.353	0.817
30	0.291	0.776
25	0.234	0.732

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	6/30/1995	Prior	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 6/30/15

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 to SIR Layer \$100,000 (I)	Incurred Capped at SIR (J)	Incurred Capped at SIR & Aggregate (K)
Prior	\$2,190,492	\$0	\$20,361	\$2,170,131	\$0	\$335,417	\$1,834,714	\$335,417	\$2,170,131	\$2,170,131
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	451,864	0	0	451,864	0	80,309	371,556	80,309	451,864	451,864
1998-1999	938,818	0	0	938,818	0	247,170	691,649	247,170	938,818	938,818
1999-2000	431,764	0	0	431,764	0	116,070	315,694	116,070	431,764	431,764
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	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	624,699	0	0	624,699	0	207,339	417,360	207,339	624,699	624,699
2009-2010	680,006	0	0	680,006	0	218,884	461,122	218,884	680,006	680,006
2010-2011	526,423	0	0	526,423	0	202,417	324,006	202,417	526,423	526,423
2011-2012	581,229	0	0	581,229	0	133,843	447,387	133,843	581,229	581,229
2012-2013	231,169	0	0	231,169	0	34,495	196,673	34,495	231,169	231,169
2013-2014	303,528	0	0	303,528	0	2,308	301,220	2,308	303,528	303,528
2014-2015	0	0	0	0	0	0	0	0	0	0
2015-2016	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>\$12,509,975</b>	<b>\$0</b>	<b>\$21,055</b>	<b>\$12,488,919</b>	<b>\$5,667</b>	<b>\$4,093,238</b>	<b>\$8,395,681</b>	<b>\$4,087,571</b>	<b>\$12,483,252</b>	<b>\$12,483,252</b>

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 6/30/15

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 to SIR Layer \$100,000 (I)	Paid Capped at SIR (J)	Paid Capped at SIR & Aggregate (K)
Prior	\$2,181,828	\$0	\$20,361	\$2,161,467	\$0	\$326,752	\$1,834,714	\$326,752	\$2,161,467	\$2,161,467
1995-1996	107,014	0	0	107,014	0	0	107,014	0	107,014	107,014
1996-1997	542,261	0	0	542,261	0	50,804	491,457	50,804	542,261	542,261
1997-1998	437,373	0	0	437,373	0	80,309	357,065	80,309	437,373	437,373
1998-1999	933,265	0	0	933,265	0	241,617	691,649	241,617	933,265	933,265
1999-2000	404,266	0	0	404,266	0	116,070	288,196	116,070	404,266	404,266
2000-2001	553,337	0	0	553,337	5,667	225,797	327,540	220,129	547,670	547,670
2001-2002	1,046,428	0	694	1,045,734	0	452,495	593,239	452,495	1,045,734	1,045,734
2002-2003	157,029	0	0	157,029	0	0	157,029	0	157,029	157,029
2003-2004	1,764,496	0	0	1,764,496	0	1,329,300	435,196	1,329,300	1,764,496	1,764,496
2004-2005	151,616	0	0	151,616	0	0	151,616	0	151,616	151,616
2005-2006	245,304	0	0	245,304	0	0	245,304	0	245,304	245,304
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	419,269	0	0	419,269	0	26,199	393,070	26,199	419,269	419,269
2009-2010	551,222	0	0	551,222	0	155,178	396,044	155,178	551,222	551,222
2010-2011	457,500	0	0	457,500	0	161,279	296,222	161,279	457,500	457,500
2011-2012	421,481	0	0	421,481	0	55,594	365,887	55,594	421,481	421,481
2012-2013	149,232	0	0	149,232	0	0	149,232	0	149,232	149,232
2013-2014	238,979	0	0	238,979	0	0	238,979	0	238,979	238,979
2014-2015	0	0	0	0	0	0	0	0	0	0
2015-2016	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>\$11,347,212</b>	<b>\$0</b>	<b>\$21,055</b>	<b>\$11,326,156</b>	<b>\$5,667</b>	<b>\$3,443,956</b>	<b>\$7,882,200</b>	<b>\$3,438,289</b>	<b>\$11,320,489</b>	<b>\$11,320,489</b>

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 6/30/15

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 to SIR Layer \$100,000 (I)	Reserves Capped at SIR (J)	Reserves Capped at SIR & Aggregate (K)
Prior	\$8,664	\$0	\$0	\$8,664	\$0	\$8,664	\$0	\$8,664	\$8,664	\$8,664
1995-1996	12,372	0	0	12,372	0	0	12,372	0	12,372	12,372
1996-1997	50,556	0	0	50,556	0	0	50,556	0	50,556	50,556
1997-1998	14,491	0	0	14,491	0	0	14,491	0	14,491	14,491
1998-1999	5,553	0	0	5,553	0	5,553	0	5,553	5,553	5,553
1999-2000	27,498	0	0	27,498	0	0	27,498	0	27,498	27,498
2000-2001	5,018	0	0	5,018	0	0	5,018	0	5,018	5,018
2001-2002	26,460	0	0	26,460	0	16,367	10,093	16,367	26,460	26,460
2002-2003	20,062	0	0	20,062	0	0	20,062	0	20,062	20,062
2003-2004	217,664	0	0	217,664	0	217,664	0	217,664	217,664	217,664
2004-2005	46,904	0	0	46,904	0	0	46,904	0	46,904	46,904
2005-2006	18,153	0	0	18,153	0	0	18,153	0	18,153	18,153
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	205,430	0	0	205,430	0	181,140	24,290	181,140	205,430	205,430
2009-2010	128,784	0	0	128,784	0	63,706	65,078	63,706	128,784	128,784
2010-2011	68,923	0	0	68,923	0	41,138	27,784	41,138	68,923	68,923
2011-2012	159,748	0	0	159,748	0	78,248	81,500	78,248	159,748	159,748
2012-2013	81,936	0	0	81,936	0	34,495	47,441	34,495	81,936	81,936
2013-2014	64,549	0	0	64,549	0	2,308	62,241	2,308	64,549	64,549
2014-2015	0	0	0	0	0	0	0	0	0	0
2015-2016	0	0	0	0	0	0	0	0	0	0
Total	\$1,162,763	\$0	\$0	\$1,162,763	\$0	\$649,283	\$513,480	\$649,283	\$1,162,763	\$1,162,763

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 6/30/15

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	264	0	20	244	263	0	20	243	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	29	0	0	29	2	2
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	25	0	2	23	0	0
2007-2008	20	0	2	18	20	0	2	18	0	0
2008-2009	24	0	1	23	21	0	1	20	3	3
2009-2010	27	0	1	26	24	0	1	23	3	3
2010-2011	25	0	6	19	22	0	6	16	3	3
2011-2012	24	0	5	19	19	0	5	14	5	5
2012-2013	24	0	1	23	22	0	1	21	2	2
2013-2014	32	0	4	28	27	0	4	23	5	5
2014-2015	0	0	0	0	0	0	0	0	0	0
2015-2016	0	0	0	0	0	0	0	0	0	0
Total	804	0	69	735	768	0	69	699	36	36

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)
Prior			
1995-1996			
1996-1997			
1997-1998			
1998-1999			
1999-2000			
2000-2001			
2001-2002			
2002-2003			
2003-2004			
2004-2005			
2005-2006	87,368	1.280	111,831
2006-2007	97,871	1.249	122,241
2007-2008	118,242	1.219	144,137
2008-2009	126,628	1.189	150,561
2009-2010	114,621	1.160	132,961
2010-2011	100,374	1.132	113,623
2011-2012	103,342	1.104	114,090
2012-2013	104,205	1.077	112,229
2013-2014	106,615	1.051	112,052
2014-2015	108,079	1.025	110,781
2015-2016	108,079	1.000	108,079
2016-2017			

## Notes:

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