Ventura County Employees' Retirement Association

ACTUARIAL EXPERIENCE STUDY

Analysis of Actuarial Experience During the Period July 1, 2008 through June 30, 2011

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April 4, 2012

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura, CA 93003-6572

Re: Review of Non-Economic Actuarial Assumptions for the June 30, 2012 Actuarial Valuation

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience of the Ventura County Employees' Retirement Association. This study utilizes the census data of the last four actuarial valuations to review plan experience during the period from July 1, 2008 through June 30, 2011. The study develops the proposed actuarial assumptions to be used in future actuarial valuations starting with the June 30, 2012 actuarial valuation.

Please note that we are also currently reviewing the economic assumptions. The economic actuarial assumption recommendations for the June 30, 2012 valuation will be provided in a separate report.

We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

Jaul Cryla

Paul Angelo, FSA, EA, MAAA, FCA Senior Vice President & Actuary

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John Monroe, ASA, EA, MAAA Vice President & Associate Actuary

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TABLE OF CONTENTS

I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS1
II. BACKGROUND AND METHODOLOGY4
III. ACTUARIAL ASSUMPTIONS
A. ECONOMIC ASSUMPTIONS5
B. RETIREMENT RATES5
C. MORTALITY RATES - HEALTHY12
D. MORTALITY RATES - DISABLED17
E. TERMINATION RATES23
F. DISABILITY INCIDENCE RATES
G. PROMOTIONAL AND MERIT SALARY INCREASES
H. IN-SERVICE REDEMPTIONS43
I. AVERAGE ENTRY AGE (FOR MEMBER CONTRIBUTIONS)44
IV. COST IMPACT OF ASSUMPTION CHANGES45
APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS
APPENDIX B PROPOSED ACTUARIAL ASSUMPTIONS

I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the pension plan, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are modified, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Taking into account one year's gains or losses without making a change in the assumptions means that that year's experience was temporary and that, over the long run, experience will return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than recognizing gains or losses as they occur.

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying the promised benefit amounts to participants already retired and to those near retirement. The actuarial assumptions used do not determine the "actual cost" of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the demographic actuarial assumptions and to compare the actual experience with that expected under the current assumptions during the three-year experience period from July 1, 2008 through June 30, 2011. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 35, "Selection of Demographic and Other Non-economic Assumptions for Measuring Pension Obligations" and, as appropriate, ASOP No. 27 "Selection of Economic Assumptions for Measuring Pension Obligations." These Standards of Practice put forth guidelines for the selection of the various actuarial assumptions utilized in a pension plan actuarial valuation. Based on the study's results and expected future experience, we are recommending various changes in the current actuarial assumptions.

We are recommending changes in the assumptions for retirement from active employment, average retirement age for deferred vested members, percent with survivor, pre-retirement mortality, healthy life post-retirement mortality, disabled life post-retirement mortality, turnover, disability (ordinary and duty), promotional and merit salary increases and in-service redemptions.

The economic assumptions are currently reviewed every three years at the same time as the non-economic assumptions. Our separate review of the economic assumptions will be provided at a later date.

Our recommendations for the major actuarial assumption categories are as follows:

Retirement Rates - The probability of retirement at each age at which participants are eligible to retire. *Recommendation: Adjust the current retirement rates to those developed in Section III(B). Both General and Safety members are assumed to retire at slightly later ages overall.*

Mortality Rates - The probability of dying at each age. Mortality rates are used to project life expectancies.

Recommendation: Decrease the pre- and post-retirement mortality rates for non-disabled General and Safety members to those developed in Section III(C). Decrease the mortality rates for disabled General and Safety members to those developed in Section III(D).

Termination Rates - The probability of leaving employment at each age and receiving either a refund of contributions or a deferred vested retirement benefit.

Recommendation: Decrease the current termination rates overall for both General members and Safety members to those developed in Section III(E). In addition, maintain the assumption that a member will choose between a refund of contributions and a deferred vested benefit based on which option is more valuable. Disability Incidence Rates - The probability of becoming disabled at each age.

Recommendation: Decrease the current disability rates overall for both General and Safety members to those developed in Section III(F).

Individual Salary Increases - Increases in the salary of a member between the date of the valuation to the date of separation from active service.

Recommendation: Change the promotional and merit salary increases to those developed in Section III(G). Overall, future promotional and merit salary increases are lower under the proposed assumptions.

In-Service Redemptions – Additional pay elements that are expected to be received during the member's final average earnings period.

Recommendation: Increase the current in-service redemption assumptions for General Tier 2 and Safety to those developed in Section III(H).

Average Entry Age (for member contributions) – Used for determining contribution rates for members hired after November 1974.

Recommendation: Maintain the current average entry age assumption as shown in Section III(I).

Section II provides some background on basic principles and the methodology used for the experience study and for the review of the demographic actuarial assumptions. A detailed discussion of each assumption and reasons for the proposed changes is found in Section III. Section IV shows the cost impact of the proposed non-economic assumption changes both overall and by tier.

We have estimated the impact of the proposed non-economic assumption changes as if they were applied to the June 30, 2011 actuarial valuation. If all of the proposed non-economic assumption changes were implemented, the average employer rate would have increased by 1.66% of compensation and the average member rate would have increased by 0.08% of compensation. The estimated cost increase is mainly a result of the recommended changes to the post-retirement mortality assumptions.

II. BACKGROUND AND METHODOLOGY

In this report, we analyzed the "demographic" or "non-economic" assumptions only. Our analysis of the "economic" assumptions for the June 30, 2012 valuation will be provided in a separate report. Demographic assumptions include the probabilities of certain events occurring in the population of members, referred to as "decrements," e.g., termination from service, disability retirement, service retirement, and death after retirement. We also review the individual salary increases net of inflation (i.e., the promotional and merit assumptions) in this report.

Demographic Assumptions

In order to determine the probability of an event occurring, we examine the "decrements" and "exposures" of that event. For example, taking termination from service, we compare the number of employees who actually terminate in a certain age and/or service category (i.e., the number of "decrements") with those "who could have terminated" (i.e., the number of "exposures"). For example, if there were 500 active employees in the 20-24 age group at the beginning of the year and 50 of them terminate during the year, we would say the probability of termination in that age group is $50 \div 500$ or 10%.

The reliability of the resulting probability is highly dependent on both the number of decrements and the number of exposures. For example, if there are only a few people in a high age category at the beginning of the year (number of exposures), we would not lend as much credence to the probability of termination developed for that age category, especially if it is out of line with the pattern shown for the other age groups. Similarly, if we are considering the death decrement, there may be a large number of exposures in, say, the age 20-24 category, but very few decrements (actual deaths); therefore, we would not be able to rely heavily on the probability developed for that category.

One reason we use several years of experience for such a study is to have more exposures and decrements, and therefore more statistical reliability. Another reason for using several years of data is to smooth out fluctuations that may occur from one year to the next. However, we also calculate the rates on a year-to-year basis to check for any trend that may be developing in the later years.

III. ACTUARIAL ASSUMPTIONS

A. ECONOMIC ASSUMPTIONS

The economic assumptions are currently reviewed every three years at the same time as the non-economic assumptions. See the separate report titled "Review of Economic Actuarial Assumptions for the June 30, 2012 Actuarial Valuation" that will be provided at a future date.

B. RETIREMENT RATES

The age at which a member retires from service (i.e., who did not retire on a disability pension) will affect both the amount of the benefits that will be paid to that member as well as the period over which funding must take place.

The table on the following page shows the observed service retirement rates for General members based on the actual experience over the past three years. The observed service retirement rates were determined by comparing those members who actually retired from service to those eligible to retire from service. This same methodology is followed throughout this report and was described in Section II. Also shown are the current rates assumed and the rates we propose:

General				
Age	Current Rate of Retirement	Actual Rate of Retirement	Proposed Rate of Retirement	
Under 50	0.00%	62.50%	0.00%	
50	4.00	2.32	3.00	
51	4.00	0.91	3.00	
52	5.00	2.38	4.00	
53	5.00	2.57	4.00	
54	7.00	2.76	6.00	
55	8.00	2.74	6.00	
56	8.00	4.82	7.00	
57	9.00	6.12	8.00	
58	10.00	8.31	10.00	
59	12.00	7.42	10.00	
60	14.00	12.79	14.00	
61	20.00	13.92	18.00	
62	25.00	20.27	22.00	
63	20.00	21.11	20.00	
64	30.00	22.05	25.00	
65	40.00	29.59	35.00	
66	35.00	35.82	35.00	
67	35.00	28.95	35.00	
68	35.00	7.69	25.00	
69	20.00	21.05	20.00	
70	20.00	17.65	20.00	
71	20.00	19.23	20.00	
72	20.00	33.33	20.00	
73	20.00	22.22	20.00	
74	50.00	0.00	40.00	
75 & Over	100.00	23.81	100.00	

As shown above, we are generally recommending minor decreases in the retirement rates for General members.

Chart 1 that follows later in this section compares actual experience with the current and proposed rates of retirement for General members.

The following table shows the observed retirement rates for Safety members over the past three years. Also shown are the current rates assumed and the rates we propose:

Safety				
Age	Current Rate of Retirement	Actual Rate of Retirement	Proposed Rate of Retirement	
Under 40	0.00%	0.00%	0.00%	
40	1.00	0.00	1.00	
41	1.00	9.09	1.00	
42	1.00	5.88	1.00	
43	1.00	4.35	1.00	
44	1.00	2.56	1.00	
45	1.00	0.00	1.00	
46	1.00	0.00	1.00	
47	1.00	1.75	1.00	
48	1.00	0.00	1.00	
49	1.00	0.00	1.00	
50	2.00	0.91	2.00	
51	2.00	0.88	2.00	
52	5.00	2.46	4.00	
53	8.00	4.03	6.00	
54	18.00	17.31	18.00	
55	20.00	28.38	25.00	
56	20.00	20.00	20.00	
57	18.00	20.00	20.00	
58	18.00	14.71	18.00	
59	30.00	22.22	25.00	
60	30.00	20.00	25.00	
61	30.00	31.58	30.00	
62	50.00	16.67	40.00	
63	50.00	40.00	50.00	
64	50.00	100.00	50.00	
65 & Over	100.00	50.00	100.00	

We are recommending minor changes in the retirement rates for Safety members.

Chart 2 compares actual experience with the current and proposed rates for Safety members.

Deferred Vested Members

In prior valuations, deferred vested General and Safety members were assumed to retire at age 57 and 53, respectively. The average age at retirement over the prior three years was 59 for General and 54 for Safety. We recommend increasing the General assumption to age 58 and increasing the Safety assumption to age 54.

Reciprocity

It was also assumed that 50% of inactive General and 65% of inactive Safety deferred vested participants would be covered under a reciprocal retirement system and receive 5.00% annual salary increases from termination until their date of retirement. During the last three years, actual experience shows that 23% of General members and 18% of Safety members who terminated vested went on to be covered by a reciprocal retirement system. However, we recommend a 50% reciprocal assumption continue to be used for General members and a 65% reciprocal assumption continue to be used for Safety members. This recommendation takes into account the fact that about 56% of all current General deferred vested members and 66% of all current Safety deferred vested members have gone on to be covered by a reciprocal retirement system. Furthermore, based on our recommended salary increase assumptions, we propose that the current 5.00% annual salary increase assumption be decreased to 4.75% to anticipate salary increases from termination from VCERA to the expected date of retirement.

Survivor Continuance Under Unmodified Option

In prior valuations, it was assumed that 75% of all active male members and 50% of all active female members would be married or have an eligible domestic partner when they retired. We reviewed new retirees during the three-year period and determined the actual percentage of these new retirees that had an eligible spouse or eligible domestic partner at the time of retirement. The results of that analysis are shown below.

Year Ending		
June 30	Male	Female
2009	68%	53%
2010	62%	57%
2011	72%	47%
Total	67%	53%

New Retirees – Actual Percent with Eligible Spouse or Domestic Partner

According to experience of members who retired during the last three years, about 67% of all male members and 53% of all female members were married or had a domestic partner at retirement. We recommend decreasing this assumption to 70% for male members and maintaining the assumption at 50% for female members. Note that there are two additional factors to consider when setting this assumption:

- 1) Starting January 1, 2000, spouses of members who marry for the first time or remarry after retirement are eligible for survivor continuance benefits as defined in Section 31760.2; and
- 2) Starting January 1, 2005, surviving domestic partners became eligible for this benefit, and we believe that more experience needs to be collected on those that retire and have a domestic partner.

Since the value of the survivor's benefit is dependent on the survivor's age and sex, we must also have assumptions for the age and sex of the survivor. Based on the experience during the three-year period and studies done for other retirement systems, we believe that it is reasonable to maintain the following current assumptions.

Since the majority of survivors are expected to be of the opposite sex, even with the inclusion of domestic partners, we will continue to assume that the survivor's sex is the opposite of the member.

The current assumption for the age of the survivor and recommended assumption are shown below. These assumptions will continue to be monitored in future experience studies.

	Survivor's Age as Compared to Member's A			
Beneficiary Sex	Current Assumption	Recommended Assumption		
Male Female	3 years older 3 years younger	No change		

Survivor Ages – Current Assumptions









C. MORTALITY RATES - HEALTHY

The "healthy" mortality rates project what proportion of members will die before retirement as well as the life expectancy of a member who retires from service (i.e., who did not retire on a disability pension). The table currently being used for post-service retirement mortality rates for both General and Safety service retirees is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females), with ages set back one year.

Pre-Retirement Mortality

The number of deaths among active and deferred vested members is not large enough to provide a statistically credible basis for a specific pre-retirement mortality analysis. Therefore, we continue to propose that pre-retirement mortality follow the same tables used for post-retirement mortality. All pre-retirement deaths are assumed to be ordinary (non-duty) based on recent data.

Post-Retirement Mortality (Service Retirements)

Among service retired members, the actual deaths compared to the expected deaths under the current and proposed assumptions for the last three years are as follows:

	General – Healthy		Sa	fety – Healt	hy	
Year Ended June 30	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
2009	77	74	63	6	6	4
2010	81	76	67	7	6	5
2011	84	77	71	9	7	7
Total	242	227	201	22	19	16
Actual / Expected	94%		113%	86%		119%

Chart 3 compares actual to expected deaths for General members under the current and proposed assumptions over the last three years. Experience shows that there were fewer deaths than predicted by the current table.

Chart 4 has the same comparison for Safety members. Experience shows that there were also fewer deaths than predicted by the current table.

For General service retirees the ratio of actual to expected deaths was 94%. We recommend changing to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale AA to 2025, with ages set back one year. This will bring the actual to expected ratio to 113%. This is consistent with standard actuarial practice to include some margin in the rates to anticipate expected future improvement in life expectancy. Generally, preferable practice is to have a margin of around 10%; that is, the actual deaths among current retirees are around 10% greater than the expected deaths during the study period. For that reason we will closely monitor this assumption in future studies.

For Safety service retirees the ratio of actual to expected deaths was 86%. We also recommend changing to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale AA to 2025, with ages set back one year. This will bring the actual to expected ratio to 119%. Because there is considerably less mortality experience available for Safety service retirees as compared to General service retirees, we believe that there is not yet enough experience available to establish that Safety service retirees have shorter life expectancies than General service retirees. Here again, we will closely monitor this assumption in future studies.

Chart 5 shows the life expectancies (i.e., expected future lifetime) under the current and the proposed tables for General and Safety members.

Mortality Table for Member Contributions

We recommend that the mortality table used for determining contributions for General members be changed from the RP-2000 Combined Healthy Mortality Table set back one year weighted 35% male and 65% female to the RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year weighted 35% male and 65% female. This is based on the proposed valuation mortality table for General members and the actual sex distribution of General members.

For Safety members, we recommend the mortality table be changed from the RP-2000 Combined Healthy Mortality Table set back one year weighted 80% male and 20% female to the RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year weighted 80% male and 20% female. This is based on the proposed valuation mortality table for Safety members and the actual sex distribution of Safety members.



Chart 3

Post - Retirement Deaths







D. MORTALITY RATES - DISABLED

Since death rates for disabled members can vary from those of healthy members, a different mortality assumption is often used. The table currently being used is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females), with ages set forward six years for General members and set back one year for Safety members.

Among disabled members, the actual deaths compared to the number expected for the last three years has been as follows:

	General – Disabled			Safety – Disable		ed	
Year Ended June 30	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	
2009	15	8	13	4	4	3	
2010	17	21	15	5	4	3	
2011	16	18	14	6	4	5	
Total	48	47	42	15	12	11	
Actual / Expected	98%		112%	80%		109%	

Based on this experience, we recommend that the mortality table for disabled General members be changed to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale AA to 2025, with ages set forward five years for males and seven years for females. We recommend that the mortality table for disabled Safety members be changed to the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale AA to 2025, with ages set back one year for both males and females. These are the same tables that are recommended for healthy Safety members. We have found that, in the aggregate, it is not uncommon in 1937 Act Plans for Safety disabled members to have similar mortality to their non-disabled counterparts and we have recommended similar changes for other systems. Nonetheless, we will continue to monitor disabled and non-disabled mortality separately for Safety members in future studies.

Chart 6 compares actual to expected deaths under both the current and proposed assumptions for disabled General members over the last three years. Experience shows that there were slightly fewer deaths than predicted by the current table. As discussed in the previous section, our recommendation incorporates a margin for future mortality improvement. Chart 7 has the same comparison for Safety members. Experience shows that there were fewer deaths than predicted by the current table. Our recommendation also incorporates a margin for future mortality improvement.

Chart 8 shows the life expectancies under both the current and proposed tables for General members.

Chart 9 shows the same information for Safety members.

Chart 6 Post - Retirement Deaths Disabled General Members















E. **TERMINATION RATES**

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions there is an overall incidence of termination assumed, combined with an assumption that a member will choose between a refund of contributions and a deferred vested benefit based on which option is more valuable. With this study, we continue to recommend that this same assumption structure be used. The termination experience over the last three years for General and Safety members, separated between those employees with under five years of service and those with five or more years of service, is as follows:

(Less than Five Years of Service)				
Years of Service	Current Rate	Observed Rate	Proposed Rate	
0	16.00%	13.23%	15.00%	
1	12.00	7.30	10.00	
2	10.00	6.09	8.00	
3	8.00	4.24	7.00	
4	8.00	3.84	6.00	

Rates of Termination (General)

Rates of Termination (Safety) (Less than Five Years of Service)

Years of Service	Current Rate	Observed Rate	Proposed Rate
0	10.00%	14.79%	12.00%
1	7.00	3.78	6.00
2	7.00	2.46	5.50
3	6.00	4.44	5.00
4	5.50	1.18	4.00

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Age	Current Rate	Observed Rate	Proposed Rate
20 - 24	8.00%	0.00%	6.00%
25 - 29	8.00	3.63	6.00
30 - 34	6.50	2.18	5.50
35 – 39	5.00	1.84	4.50
40 - 44	3.50	2.03	3.50
45 - 49	2.75	1.67	2.50
50 - 54	1.50	5.10	2.00
55 – 59	1.25	1.48	1.50
60 - 64	1.00	0.70	1.00
65 - 69	1.00	0.94	1.00
70 - 74	0.00	0.00	0.00

Rates of Termination (General) (Five or More Years of Service)

Rates of Termination (Safety) (Five or More Years of Service)

		-		
Age	Current Rate	Observed Rate	Proposed Rate	
20 - 24	5.00%	0.00%	4.00%	
25 - 29	4.50	1.25	4.00	
30 - 34	3.00	1.83	3.00	
35 - 39	2.00	1.38	2.00	
40 - 44	1.00	0.67	1.00	
45 - 49	0.50	1.54	0.50	
50 - 54	0.00	23.08	0.00	
55 – 59	0.00	0.00	0.00	
60 - 64	0.00	0.00	0.00	

It is important to note that not every age category has enough exposures and/or decrements such that the results in that category are statistically credible. This is mainly the case at the highest age categories since most members in those categories are eligible to retire, and so have been excluded from our review of this experience.

Chart 10 compares actual to expected terminations over the past three years for both the current and proposed assumptions for General members.

Chart 11 graphs the same information as Chart 10, but for Safety members.

Chart 12 shows the current, along with the proposed termination rates for General members with less than five years of service.

Chart 13 shows the same information as Chart 12, but for Safety members.

Chart 14 shows the current, along with the proposed termination rates for General members with five or more years of service.

Chart 15 shows the same information as Chart 14, but for Safety members.

Based upon the recent experience, the termination rates for General members with less than five years of service have been decreased. For General members with five or more years of service, we have decreased the termination rates under age 40 and either maintained or increased the rates at older ages. For Safety members with less than five years of service, the termination rates have been slightly decreased overall. For Safety members with five or more years of service, we have slightly decreased the termination rates under age 30.

The number of actual terminations during the three-year experience period were significantly less than expected. Our proposed termination rates reflect some of this decrease, and at the next experience study we will see if this trend continues.

We will also continue to assume that termination rates are zero at any age where members are assumed to retire. In other words, at those ages, members will retire in accordance with the retirement rate assumptions rather than terminate and defer their benefit.



















Chart 15 Termination Rates - Safety Members (Five or More Years of Service)



F. DISABILITY INCIDENCE RATES

When a member becomes disabled, he or she may be entitled to at least a 50% of pay pension (duty disability), or a pension that depends upon the member's years of service (ordinary disability). The following summarizes the actual incidence of combined duty and ordinary disabilities over the past three years compared to the current and proposed assumptions for both duty and ordinary disability incidence:

Rates of Disability Incidence (General)*					
Age	Current Rate	Observed Rate	Proposed Rate		
20 - 24	0.01%	0.00%	0.01%		
25 - 29	0.02	0.00	0.02		
30 - 34	0.05	0.05	0.05		
35 - 39	0.10	0.00	0.10		
40 - 44	0.15	0.16	0.15		
45 - 49	0.30	0.20	0.25		
50 - 54	0.60	0.32	0.50		
55 – 59	0.75	0.49	0.60		
60 - 64	0.75	0.69	0.75		
65 - 69	0.75	1.10	1.00		
70 - 74	0.75	1.10	1.00		

* Total current rate for duty and ordinary disabilities.

Rates of Disability Incidence (Safety)*`

	,	
Current Rate	Observed Rate	Proposed Rate
0.05%	0.00%	0.05%
0.15	0.19	0.20
0.30	0.00	0.30
0.75	0.36	0.60
1.00	1.13	1.10
1.25	0.91	1.20
2.75	0.67	2.50
5.00	1.14	4.00
6.25	4.05	5.00
	Current Rate 0.05% 0.15 0.30 0.75 1.00 1.25 2.75 5.00 6.25	Current RateObserved Rate0.05%0.00%0.150.190.300.000.750.361.001.131.250.912.750.675.001.146.254.05

* Total current rate for duty and ordinary disabilities.

Chart 16 compares the actual number of duty and ordinary disabilities over the past three years to that expected under both the current and proposed assumptions. The proposed disability rates were adjusted to reflect the past three years' experience. There are decreases in most of the rates proposed for General and Safety members.

Chart 17 shows actual disability incidence rates, compared to the assumed and proposed rates for General members.

Since 31% of disabled General members received a duty disability, we recommend reducing the current assumption from 45% to 40% of disabilities being entitled to a duty disability retirement. The remaining 60% of disabled General members are assumed to receive an ordinary disability retirement.

Chart 18 graphs the same information as Charts 17, but for Safety members. Since 79% of disabled Safety members received a duty disability, we recommend maintaining the current assumption that 90% of disabilities will receive a duty disability retirement. This recommendation is based partially on the fact that 96% of Safety members received as duty disability in the prior experience study period. The remaining 10% of disabled Safety members are assumed to receive an ordinary disability retirement.

Chart 16 Actual Number of Disabilities Compared to Expected 140 -120-100-80-131 60-117 40-80 71 63 60 54 51 20-29 0-Safety Total General 3 Year Totals (Both Service and Non-Service Connected)











G. PROMOTIONAL AND MERIT SALARY INCREASES

The Association's retirement benefits are determined in large part by a member's compensation just prior to retirement. For that reason, it is important to anticipate salary increases that employees will receive over their careers. These salary increases are made up of three components:

- > Inflationary increases;
- > Real "across the board" increases; and
- > Promotional and merit increases.

The inflationary increases are assumed to follow the general annual price inflation assumption that will be discussed in our separate economic assumptions report. Our recommendations for inflationary increases as well as "across the board" real pay increases will be provided in that report. The current inflation assumption is 3.50% and the current "across the board" real pay assumption is 0.75%. Therefore, the <u>total</u> current assumed inflation and real "across the board" pay increase (i.e., wage inflation) is 4.25%. This is the assumed annual rate of payroll growth at which payments to amortize the Unfunded Actuarial Accrued Liability (UAAL) are assumed to increase.

The annual promotional and merit increases are determined by measuring the actual increases received by members over the experience period, net of the inflationary and real "across the board" pay increases. Increases are measured separately for General and Safety members. This is accomplished by:

- Measuring each continuing member's actual salary increase over each year of the experience period;
- > Categorizing these increases according to member demographics;
- Removing the wage inflation component from these increases (equal to the increase in the members' average salary during the year);
- > Averaging these annual increases over the experience period; and
- Modifying current assumptions to reflect some portion of these measured increases reflective of their "credibility."

Note that, to be consistent with your experience, these merit and promotional assumptions should be used in combination with the proposed assumed inflation and real "across the board" increases that will be provided in our economic assumptions report.

We have excluded the most recent year of experience from this study due to the significant negative wage inflation during that year. Much of this is due to the elimination of an employer pickup of member contributions that would count towards the determination of compensation used for calculating retirement benefits. If this experience was included it would lead to inflated promotional and merit increase experience.

The following table shows the General members' actual average promotional and merit increases by years of service over the two-year period from July 1, 2008 through June 30, 2010 along with the actual average based on the current two-year and prior three-year period. The current and proposed assumptions are also shown. The increases from the current two-year period were reduced by 3.8%, the actual average inflation plus "across the board" increase (i.e., wage inflation, estimated as the increase in salaries) over the two-year experience period.

		General		
Years of Service	Current Assumptions	July 1, 2008 Through June 30, 2010 Average General Promotional and Merit Increases	Actual Average from Current and Prior Study	Proposed Assumptions
Less than 1	4.50%	6.62%	6.06%	5.00%
1	3.50	4.29	4.25	3.75
2	3.00	2.99	3.11	3.00
3	2.50	2.88	2.95	2.50
4	2.00	2.16	2.30	2.00
5	1.50	1.77	1.31	1.50
6	1.00	1.09	1.40	1.00
7	1.00	0.99	1.07	1.00
8	0.75	0.41	0.03	0.75
9	0.75	0.24	0.43	0.50
10	0.75	-0.23	0.06	0.50
11	0.75	0.65	0.34	0.50
12	0.75	0.47	0.39	0.50
13	0.75	-0.52	-0.28	0.50
14	0.75	-0.10	0.10	0.50
15	0.75	-0.05	0.32	0.50
16	0.75	-0.02	0.22	0.50
17	0.75	0.16	0.01	0.50
18	0.75	-0.35	0.03	0.50
19	0.75	-0.05	-0.21	0.50
20 & over	0.75	-0.75	-0.27	0.50
Average	1.75	1.64	N/A	1.69

The following table provides the same information for Safety members. These actual average promotional and merit increases from the current two-year period were determined by reducing the actual average total salary increases by 5.4%, which was the actual average inflation plus real "across the board" increase (i.e., wage inflation, estimated as the increase in salaries) over the two-year period.

Safety				
Years of Service	Current Assumptions	July 1, 2008 Through June 30, 2010 Average Safety Promotional and Merit Increases	Actual Average from Current and Prior Study	Proposed Assumptions
Less than 1	9.00%	7.43%	10.39%	8.50%
1	6.50	5.62	6.74	6.25
2	4.75	4.93	4.93	4.75
3	3.50	5.24	4.54	4.00
4	3.00	2.28	2.73	3.00
5	2.50	2.85	4.12	2.50
6	2.00	2.94	3.94	2.00
7	1.50	-0.09	0.94	1.50
8	1.25	0.10	1.11	1.25
9	1.00	1.00	1.07	1.00
10	0.75	1.22	1.10	0.75
11	0.75	0.18	0.05	0.75
12	0.75	1.15	1.39	0.75
13	0.75	1.12	1.60	0.75
14	0.75	0.32	1.26	0.75
15	0.75	1.43	0.84	0.75
16	0.75	-0.55	0.00	0.50
17	0.75	-0.64	0.00	0.50
18	0.75	0.30	0.56	0.50
19	0.75	-0.93	0.04	0.50
20 & over	0.75	-1.28	-0.45	0.50
Average	2.00	1.30	N/A	1.89

The proposed promotional and merit salary increase assumptions are a slight decrease overall compared to the current assumptions for both General and Safety members.

Charts 19 and 20 provide a graphical comparison of the actual promotional and merit increases, compared to the proposed assumptions. The charts also show the actual promotional and merit increases based on an average of both the current and previous experience periods. Chart 19 shows this information for General members and Chart 20 for Safety members.

We realize that the most recent experience period may not be typically indicative of future long-term promotional and merit salary increases even after excluding the most recent year of experience. Therefore, we also examined the promotional and merit salary experience used in the prior experience study. We believe that when the experience from these two studies are combined into an average result, it provides a reasonable representation of potential future promotional and merit salary increases over the long term.

Based on this experience, we are proposing slight decreases overall in the promotional and merit salary increases for both General and Safety members.

* SEGAL

Chart 19 Promotional and Merit Salary Increase Rates -General Members







H. IN-SERVICE REDEMPTIONS

In 1998, the Board of Retirement, in the course of actions related to the Ventura Settlement, determined that several additional pay elements should be included as Earnable Compensation. These additional pay elements fall into two categories:

- Ongoing Pay Elements Those that are expected to be received relatively uniformly over a member's employment years; and
- In-Service Redemption Elements Those that are expected to be received only during the member's final average earnings pay period.

The first category is recognized in the actuarial calculations by virtue of being included in the current pay of active members. The second category requires a separate actuarial assumption to anticipate its impact on a member's retirement benefit.

In this study, we have collected data for the last three years to estimate in-service redemptions for active members as a percentage of final average pay. The results are summarized in the following table:

	Actual Average In-Service Redemptions			
Year	General Tier 1	General Tier 2	Safety	
2009	7.40%	3.60%	7.03%	
2010	8.06%	3.59%	7.36%	
2011	7.02%	<u>3.66%</u>	<u>8.77%</u>	
Average	7.57%	3.62%	7.78%	
Current Assumptions	8.00%	3.25%	7.00%	
Proposed Assumption	8.00%	3.50%	7.50%	

For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect member contribution rates.

Based on the data in the above table, the in-service redemption assumption has been maintained for General Tier 1 members and increased for General Tier 2 members and Safety members.

*SEGAL

I. AVERAGE ENTRY AGE (FOR MEMBER CONTRIBUTIONS)

The assumption for average entry age of active members is used in determining the rate at which members who were hired after November 1974 contribute. The current assumption is age 36 for General members and age 27 for Safety members. The actual average entry ages for all active members as of June 30, 2011 is age 35.5 for General members and age 27.1 for Safety members.

Based on this experience we recommend that the average entry age for General members used for determining member contribution rates be maintained at age 36. For Safety members we recommend that the average entry age used for determining member contribution rates be maintained at age 27.

IV. COST IMPACT OF ASSUMPTION CHANGES

The tables below show the changes in the employer and member contribution rates due to the recommended demographic assumption changes as if they were applied in the June 30, 2011 actuarial valuation. If all of the proposed demographic assumption changes were implemented, the Plan's average employer rate would have increased by 1.66% of compensation. The average member rate would have increased by 0.08% of compensation. The Plan's UAAL would have increased by \$117 million.

Contributions	General Tier 1	General Tier 2	General Tier 2C	Safety	Overall
Normal Cost	0.12%	(0.02%)	0.06%	0.10%	0.04%
UAAL	<u>20.68%</u>	<u>0.47%</u>	<u>0.56%</u>	<u>2.80%</u>	<u>1.62%</u>
Total	20.80%	0.45%	0.62%	2.90%	1.66%

Employer Contribution Rate Impact (% of Compensation)

Employer Contribution Rate Impact (Estimated Annual Dollar Amounts in Thousands)

Contributions	General Tier 1	General Tier 2	General Tier 2C	Safety	Overall
Total	\$3,352	\$943	\$1,528	\$4,783	\$10,606

Member Contribution Rate Impact (% of Compensation)

Contributions	General Tier 1	General Tier 2	General Tier 2C	Safety	Overall
Total	0.05%	0.03%	0.03%	0.23%	0.08%

Member Contribution Rate Impact (Estimated Annual Dollar Amounts in Thousands)

Contributions	General Tier 1	General Tier 2	General Tier 2C	Safety	Overall
Total	\$8	\$63	\$74	\$379	\$524

The estimated cost increase is mainly a result of the recommended changes to the post-retirement mortality assumptions.

The above results are based on the current economic assumptions and so do not include the impact of any potential economic assumption changes that may be recommended in that separate report.

* SEGAL

APPENDIX A

CURRENT ACTUARIAL ASSUMPTIONS

Mortality Rates

Healthy:	For General Members: RP-2000 Combined Healthy Mortality Table set back one year.
	For Safety Members: RP-2000 Combined Healthy Mortality Table set back one year.
Disabled:	For General Members: RP-2000 Combined Healthy Mortality Table set forward six years.
	For Safety Members: RP-2000 Combined Healthy Mortality Table set back one year.
Member Contribution Rates:	For General Members: RP-2000 Combined Healthy Mortality Table set back one year weighted 35% male and 65% female.
	For Safety Members: RP-2000 Combined Healthy Mortality Table set back one year weighted 80% male and 20% female.

Termination Rates Before Retirement:

		Rate (%)		
		Mortality		
	Ger	neral	Sa	fety
Age	Male	Female	Male	Female
25	0.04	0.02	0.04	0.02
30	0.04	0.02	0.04	0.02
35	0.07	0.04	0.07	0.04
40	0.10	0.06	0.10	0.06
45	0.14	0.10	0.14	0.10
50	0.20	0.16	0.20	0.16
55	0.32	0.24	0.32	0.24
60	0.59	0.44	0.59	0.44
65	1.13	0.86	1.13	0.86

All pre-retirement deaths are assumed to be non-duty related.

Termination Rates Before Retirement (continued):

	Rate (%)		
	Disability		
Age	General ⁽¹⁾	Safety ⁽²⁾	<u> </u>
25	0.02	0.11	
30	0.04	0.24	
35	0.08	0.57	
40	0.13	0.90	
45	0.24	1.15	
50	0.48	2.15	
55	0.69	4.10	
60	0.75	5.75	
65	0.75	0.00	
70	0.75	0.00	

 $^{(1)}$ 45% of General disabilities are assumed to be duty disabilities and the other 55% are assumed to be ordinary disabilities.
 ⁽²⁾ 90% of Safety disabilities are assumed to be duty disabilities and the other 10% are assumed to be

ordinary disabilities.

	• •				
Withdrawal (< 5 Years of Service)					
Years of Service	General	Safety			
0	16.00	10.00			
1	12.00	7.00			
2	10.00	7.00			
3	8.00	6.00			
4	8.00	5.50			

Rate (%)

Termination Rates Before Retirement (continued):

Withdrawal (5+ Years of Service) *			
Age	General	Safety	
20	8.00	5.00	
25	8.00	4.70	
30	7.10	3.60	
35	5.60	2.40	
40	4.10	1.40	
45	3.05	0.70	
50	2.00	0.20	
55	1.35	0.00	
60	1.10	0.00	
65	1.00	0.00	
70	0.00	0.00	

*The greater of a refund of member contributions and a deferred annuity is valued when a member withdraws.

No withdrawal is assumed after a member is first assumed to retire.

Retirement Rates:

		Rate (%)	
	Age	General	Safety
	40	0.00	1.00
2	41	0.00	1.00
2	42	0.00	1.00
2	43	0.00	1.00
2	14	0.00	1.00
2	45	0.00	1.00
2	46	0.00	1.00
2	47	0.00	1.00
2	48	0.00	1.00
2	49	0.00	1.00
4	50	4.00	2.00
4	51	4.00	2.00
4	52	5.00	5.00
4	53	5.00	8.00
4	54	7.00	18.00
4	55	8.00	20.00
4	56	8.00	20.00
4	57	9.00	18.00
4	58	10.00	18.00
4	59	12.00	30.00
(50	14.00	30.00
(51	20.00	30.00
(52	25.00	50.00
(53	20.00	50.00
(54	30.00	50.00
(55	40.00	100.00
(56	35.00	100.00
(57	35.00	100.00
(58	35.00	100.00
(59	20.00	100.00
	70	20.00	100.00
, ,	71	20.00	100.00
	72	20.00	100.00
, ,	73	20.00	100.00
	74	50.00	100.00
-	75	100.00	100.00

Retirement Age and Benefit for Deferred Vested Members: For deferred vested members, we make the following retirement assumption: General Age: 57 Safety Age: 53 We assume that 50% and 65% of future General and Safety deferred vested members, respectively, will continue to work for a reciprocal employer. For reciprocals, we assume 5.00% compensation increases per annum. **Future Benefit Accruals:** 1.0 year of service per year. **Unknown Data for Members:** Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male. **Definition of Active Members:** All active members of VCERA as of the valuation date. **Percent Married:** 75% of male members and 50% of female members are assumed to be married at pre-retirement death or retirement. Age of Spouse: Female (or male) spouses are 3 years younger (or older) than their spouses. **Net Investment Return:** 7.75%, net of investment and administration expenses. **Member Contribution Crediting Rate:** 3.50% (Based on projected long term ten-year Treasury rate). **Consumer Price Index:** Increase of 3.50% per year; retiree COLA increases due to CPI are subject to a 3.0% maximum change per year for General Tier 1 and Safety. For General Tier 2, SEIU members receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI, that applies to future service after March 2003. **In-Service Redemptions:** The following assumptions for in-service redemptions pay as a percentage of final average pay are used: General Tier 1 8.00% General Tier 2 3.25% 7.00% Safety For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect

member contribution rates.

Salary Increases:

Inflation: 3.50% per year; plus "across the board" salary increases of 0.75% per year; plus the following promotional and merit increases:			
Years of Service	General	Safety	
Less than 1	4.50%	9.00%	
1	3.50	6.50	
2	3.00	4.75	
3	2.50	3.50	
4	2.00	3.00	
5	1.50	2.50	
6	1.00	2.00	
7	1.00	1.50	
8	0.75	1.25	
9	0.75	1.00	
10	0.75	0.75	
11	0.75	0.75	
12	0.75	0.75	
13	0.75	0.75	
14	0.75	0.75	
15	0.75	0.75	
16	0.75	0.75	
17	0.75	0.75	
18	0.75	0.75	
19	0.75	0.75	
20 and Over	0.75	0.75	

Member Contribution Rates:

The above salary increase assumptions are used to determine member contribution rates. In addition, for members hired after November 1974, they will pay a contribution corresponding to a General and Safety member hired at entry age 36 and 27, respectively.

APPENDIX B

PROPOSED ACTUARIAL ASSUMPTIONS

Mortality Rates	
Healthy:	For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year.
	For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year.
Disabled:	For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set forward five years for males and seven years for females.
	For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year.
Beneficiaries:	Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who has taken a service (non-disability) retirement.
Member Contribution Rates:	For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year weighted 35% male and 65% female.
	For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year weighted 80% male and 20% female.
Member Contribution Rates:	 General Member of the opposite sex who has taken a service (non-disability) retirement. For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year weighted 35% male and 65% female. For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale AA to 2025 set back one year weighted 80% male and 20% female.

Termination Rates Before Retirement:

Rate (%)				
Mortality				
	Ger	neral	Sa	fety
Age	Male	Female	Male	Female
25	0.03	0.01	0.03	0.01
30	0.04	0.02	0.04	0.02
35	0.06	0.03	0.06	0.03
40	0.09	0.04	0.09	0.04
45	0.10	0.07	0.10	0.07
50	0.13	0.10	0.13	0.10
55	0.19	0.19	0.19	0.19
60	0.40	0.39	0.40	0.39
65	0.79	0.76	0.79	0.76

All pre-retirement deaths are assumed to be non-duty related.

Termination Rates Before Retirement (continued):

	Rate (%)		
	Disability		
Age	General ⁽¹⁾	Safety ⁽²⁾	
25	0.02	0.14	
30	0.04	0.26	
35	0.08	0.48	
40	0.13	0.90	
45	0.21	1.16	
50	0.40	1.98	
55	0.56	3.40	
60	0.69	4.60	
65	0.90	0.00	
70	1.00	0.00	

⁽¹⁾ 40% of General disabilities are assumed to be duty disabilities and the other 60% are assumed to be ordinary disabilities.

⁽²⁾ 90% of Safety disabilities are assumed to be duty disabilities and the other 10% are assumed to be ordinary disabilities.

Withdrawal (< 5 Years of Service)		
Years of Service	General	Safety
0	15.00	12.00
1	10.00	6.00
2	8.00	5.50
3	7.00	5.00
4	6.00	4.00

Rate (%)

Termination Rates Before Retirement (continued):

Withdrawal (5+ Years of Service) *				
Age	General	Safety		
20	6.00	4.00		
25	6.00	4.00		
30	5.70	3.40		
35	4.90	2.40		
40	3.90	1.40		
45	2.90	0.70		
50	2.20	0.20		
55	1.70	0.00		
60	1.20	0.00		
65	1.00	0.00		
70	0.00	0.00		

*The greater of a refund of member contributions and a deferred annuity is valued when a member withdraws.

No withdrawal is assumed after a member is first assumed to retire.

Retirement Rates:

	Rate (%)		
Age	General	Safety	
40	0.00	1.00	
41	0.00	1.00	
42	0.00	1.00	
43	0.00	1.00	
44	0.00	1.00	
45	0.00	1.00	
46	0.00	1.00	
47	0.00	1.00	
48	0.00	1.00	
49	0.00	1.00	
50	3.00	2.00	
51	3.00	2.00	
52	4.00	4.00	
53	4.00	6.00	
54	6.00	18.00	
55	6.00	25.00	
56	7.00	20.00	
57	8.00	20.00	
58	10.00	18.00	
59	10.00	25.00	
60	14.00	25.00	
61	18.00	30.00	
62	22.00	40.00	
63	20.00	50.00	
64	25.00	50.00	
65	35.00	100.00	
66	35.00	100.00	
67	35.00	100.00	
68	25.00	100.00	
69	20.00	100.00	
70	20.00	100.00	
71	20.00	100.00	
72	20.00	100.00	
73	20.00	100.00	
74	40.00	100.00	
75	100.00	100.00	

Retirement Age and Benefit for Deferred Vested Members:	For deferred vested members, we make the following retirement assumption:	
	General Age:58Safety Age:54	
	We assume that 50% and 65% of future General and Safety deferred vested members, respectively, will continue to work for a reciprocal employer. For reciprocals, we assume 4.75% compensation increases per annum.	
Future Benefit Accruals:	1.0 year of service per year.	
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.	
Definition of Active Members:	All active members of VCERA as of the valuation date.	
Percent Married:	70% of male members and 50% of female members are assumed to be married at pre-retirement death or retirement.	
Age of Spouse:	Female (or male) spouses are 3 years younger (or older) than their spouses.	
Net Investment Return: ⁽¹⁾	8.00%, net of investment and administration expenses.	
Member Contribution Crediting Rate: ⁽¹⁾	3.50% (Based on projected long term ten-year Treasury rate).	
Consumer Price Index: ⁽¹⁾	Increase of 3.50% per year; retiree COLA increases due to CPI are subject to a 3.0% maximum change per year for General Tier 1 and Safety. For General Tier 2, SEIU members receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI, that applies to future service after March 2003.	
In-Service Redemptions:	The following assumptions for in-service redemptions pay as a percentage of final average pay are used:	
	General Tier 18.00%General Tier 23.50%Safety7.50%	
	For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect member contribution rates.	

⁽¹⁾ These assumptions may change as a result of the review of economic assumptions that will be completed at a future date.

Salary Increases:⁽¹⁾

Inflation: 3.50% per year; plus "across the board" salary

increases of 0.75% per year; plus the following		
promotional and merit increases:		
Years of Service	General	Safety
Less than 1	5.00%	8.50%
1	3.75	6.25
2	3.00	4.75
3	2.50	4.00
4	2.00	3.00
5	1.50	2.50
6	1.00	2.00
7	1.00	1.50
8	0.75	1.25
9	0.50	1.00
10	0.50	0.75
11	0.50	0.75
12	0.50	0.75
13	0.50	0.75
14	0.50	0.75
15	0.50	0.75
16	0.50	0.50
17	0.50	0.50
18	0.50	0.50
19	0.50	0.50
20 and Over	0.50	0.50

Member Contribution Rates:

The above salary increase assumptions are used to determine member contribution rates. In addition, for members hired after November 1974, they will pay a contribution corresponding to a General and Safety member hired at entry age 36 and 27, respectively.

⁽¹⁾ These assumptions may change as a result of the review of economic assumptions that will be completed at a future date.

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