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April 26, 2004

Mr. Roberto Pena  
Retirement Administrator  
Fresno County Employees' Retirement Association  
2281 Tulare Street, Room 102  
Fresno, CA 93714  
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## **RE: PROPOSED CHANGE TO CALCULATION OF MEMBER CONTRIBUTION RATES**

Dear Roberto:

Active employees who participate in the Fresno County Employees Retirement Association (FCERA) make contributions into FCERA under provisions of the County Employees' Retirement Law of 1937 (1937 Act) and the Ventura Settlement Agreement. Both the 37 Act and the Ventura Settlement Agreement give guidance related to the calculation of member contribution rates, but neither specifies in detail how those contributions are to be calculated.

On April 15, 2004, we met with the FCERA Retirement Board to discuss the methodology that was used to calculate member contribution rates and propose some refinements in the calculation methodology. This letter summarizes our understanding of the methodology adopted by the FCERA Retirement Board at the April 15, 2004 meeting for the development of member contribution rates.

### ***Composition of Member Contribution Rates***

Member contributions are made up of three components: Basic Contributions, Cost of Living (COL) Contributions and Settlement Contributions.

- **Basic Contributions** are amounts, defined in the 1937 Act, that are generally designed to pay for approximately one-quarter of the Regular Benefit that the member is projected to receive if he or she retires at the normal retirement age. Basic contribution rates are calculated as a percentage of the member's pay, on the basis of the member's age at entry into System, the classification of the member, the Plan's economic assumptions and the member's life expectancy at the retirement age specified for this purpose in the 1937 Act. Basic Contribution rates do not vary from year-to-year based on demographic or investment experience.

- **COL Contributions** are defined in Article 16.5 of the 1937 Act and are designed to pay for 50% of the Cost of Living (COL) Benefit. They are determined on the basis of the value of COL Benefits for current Plan Members and the amount of assets set aside in the Plan to pay for these benefits. These contributions are determined in proportion to the Basic Contribution Rates paid by members and are affected by changes in assumptions as well as demographic and investment experience.
- **Settlement Contributions** are supplemental contributions required to help pay for the additional benefits agreed to under the Ventura Settlement Agreement. The language in the Ventura Settlement Agreement does not provide detailed guidance on how these contributions are to be calculated. Based on the Retirement Board's understanding of the intent of the Ventura Settlement Agreement, we have looked at the proposed legislation designed by the parties to the Settlement to implement Section 7 of the Ventura Settlement (Assembly Bill 2063). Although the bill was vetoed by the Governor, it proposes an approach to calculating Member Contributions for this purpose in a manner similar to the method used for Basic Contributions. In this valuation, the Settlement Contributions for Members are those amount which, when added to the Basic Contributions, would be sufficient to pay for a projected retirement benefit equal to 1/160<sup>th</sup> of the Member's projected final compensation for each year of service paid on a monthly basis beginning at age 55 for General Members or age 50 for Safety Members. Settlement Contributions also include a COL component calculated in a manner similar to the COL Contributions above.

### ***Proposed Methodology***

At the April 15, 2004 meeting, the FCERA Retirement Board adopted changes to the methodology that would be used to calculate COL Contributions for member and the Total Contribution Rate. These changes would take effect beginning with the member contribution rates for the Fiscal Year beginning July 1, 2004.

#### **Changes to Calculation of COL Contribution Rates**

Member COL Contribution rates will be calculated using a methodology similar to that used to develop employer contribution rates under FCERA. The calculation of member COL contribution rates will use the same assumptions, funding method, and amortization methodology used to develop employer contribution rates. For the June 30, 2003 Actuarial Valuation, these include:

- **Funding Method:** Entry Age Funding Method.
- **Amortization Period:** Thirty years as a level percentage of projected payroll.
- **Key Assumptions:** 8.16% effective interest rate, 4.00% inflation assumption.

The methodology will not be identical to that utilized in the development of employer contribution rates. The key differences in methodology are:

- **Adjustment for Probability of Refund:** A preliminary total COL contribution calculated using the methodology outlined above. That preliminary rate will be adjusted to reflect the proportion of the total contributions projected to be refunded to members who leave FCERA.
- **Individual Allocation:** We will calculate a projected contribution amount for the year in total utilizing the methodology outlined above. Contributions will be allocated to individual members based on their ages at entry into FCERA (as required under Section 31873) in proportion to the sum of the member's Basic and Settlement Contribution rates.

### **Changes to Calculation of Total Contribution Rates**

The Total Contribution Rate is the sum of the Basic, COL and Settlement Contribution Rates expected to be paid by the members in the coming fiscal year. The Total Contribution Rates for General Members for the fiscal year beginning July 1, 2004 increased by approximately 140% over the rates from the prior fiscal year. The Total Contribution Rates for Safety Members for the fiscal year beginning July 1, 2004 increased by approximately 70% over the rates from the prior fiscal year.\*

The Total Contribution Rate may vary significantly from year to year. The fluctuations may be even greater than that of the employer contribution rates especially during years in which there are no Undistributed Earnings available to pay Settlement Contributions.

In an effort to limit the volatility of member contribution rates, the FCERA Retirement Board adopted a rate smoothing methodology that would apply to the Total Contribution Rates. After the Total Contribution Rates have been calculated using the revised methodology described above, the Rates (as a percentage of pensionable compensation) are compared with the Rates for the prior fiscal year. If any rates have increased by more than 50% (for example, from 6% of pay to more than 9% of pay), the increase for each group of members hired at a specific age at entry over the rates from the prior year will be limited to 50%.

Under no event will this limitation cause the COL Contribution Rates to be less than zero. In other words, if there are no Undistributed Earnings available to pay Settlement Contributions, the Total Contribution Rates will not be less than the sum of the Basic Contribution Rates and the Settlement Contribution Rates. If Undistributed Earnings are available to pay some or all of the Settlement Contributions for the year, the Total Contribution Rates will not be less than the sum of the Basic Contribution Rates and any Settlement Contribution Rates required of members for that year.

The contribution shortfall (the difference between the Total Contribution Rates that would have been paid if there were no limit and the rates limited by the 50% increase),

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\* The actuarial valuation report used to determine the contribution rates for the fiscal year beginning July 1, 2004 showed the increase for Safety members as 170%. This was a typographical error. The individual rates showing in that report are correct.

will become part of the Unfunded Actuarial Accrued Liability allocated to Member COL Contribution Rates in the next valuation.

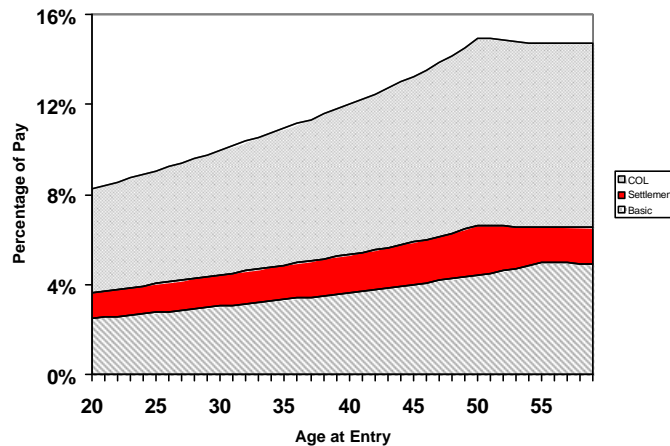
## ***Proposed Rates***

We have attached exhibits at the end of this letter showing the member contribution rates and the impact of the methodology changes described above.

### **Prior Methodology**

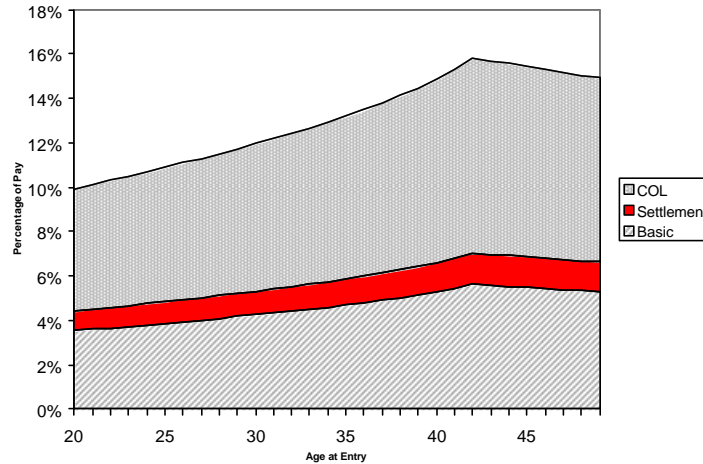
Exhibits 1A, 1B, 1C and 1D show the Basic Contribution Rates, the Settlement Contribution Rates, the COL Contribution Rates and the Total Contribution Rates, respectively for General Members under the prior methodology utilized by FCERA. The development of Total Contribution Rates is shown in Graph 1 below.

***Graph 1  
Development of Total Contribution Rates  
Prior Methodology  
General Members***



Exhibits 2A, 2B, 2C and 2D show the Basic Contribution Rates, the Settlement Contribution Rates, the COL Contribution Rates and the Total Contribution Rates, respectively for Safety Members under the prior methodology utilized by FCERA. The development of Total Contribution Rates is shown in Graph 2 below.

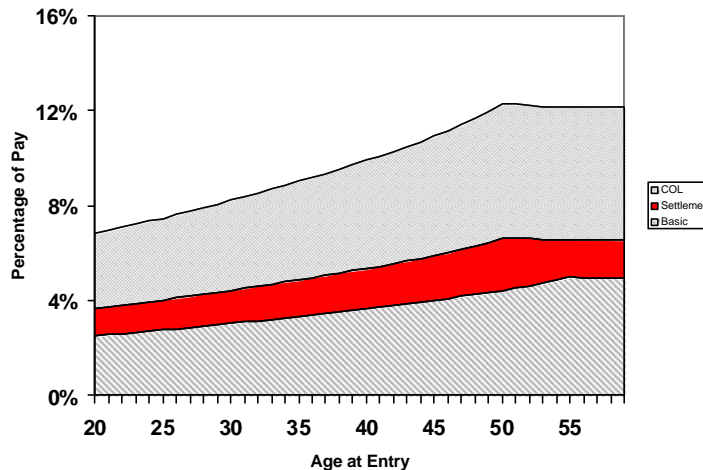
**Graph 2**  
**Development of Total Contribution Rates**  
**Prior Methodology**  
**Safety Members**



**Proposed Methodology without Smoothing**

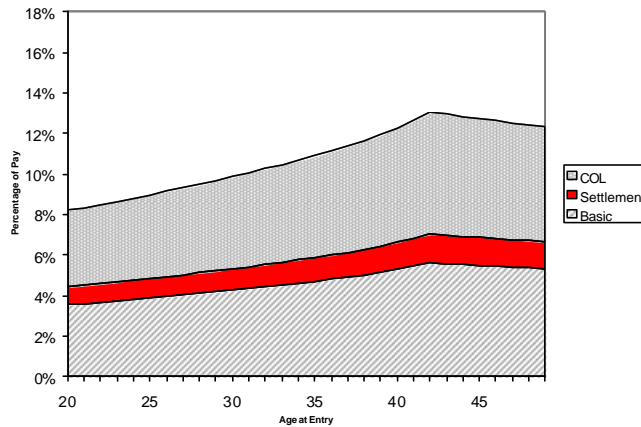
Exhibits 3A, 3B, 3C and 3D show the Basic Contribution Rates, the Settlement Contribution Rates, the COL Contribution Rates and the Total Contribution Rates, respectively for General Members without rate smoothing limitations under the proposed methodology adopted by FCERA. The development of Total Contribution Rates is shown in Graph 3 below.

**Graph 3**  
**Development of Total Contribution Rates**  
**Proposed Methodology without Smoothing**  
**General Members**



Exhibits 4A, 4B, 4C and 4D show the Basic Contribution Rates, the Settlement Contribution Rates, the COL Contribution Rates and the Total Contribution Rates, respectively for Safety Members without rate smoothing limitations under the proposed methodology adopted by FCERA. The development of Total Contribution Rates is shown in Graph 4 below.

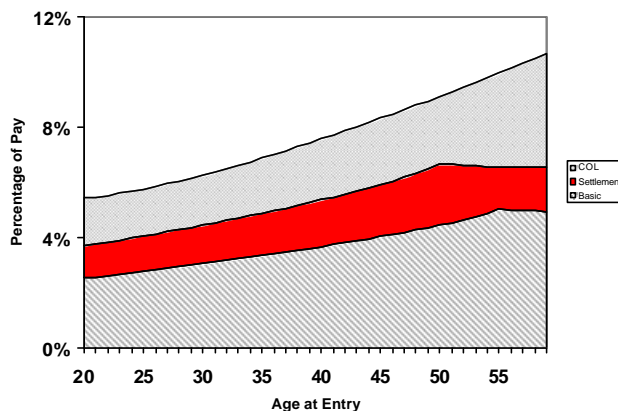
**Graph 4**  
***Development of Total Contribution Rates***  
***Proposed Methodology without Smoothing***  
***Safety Members***



**Proposed Methodology with Smoothing**

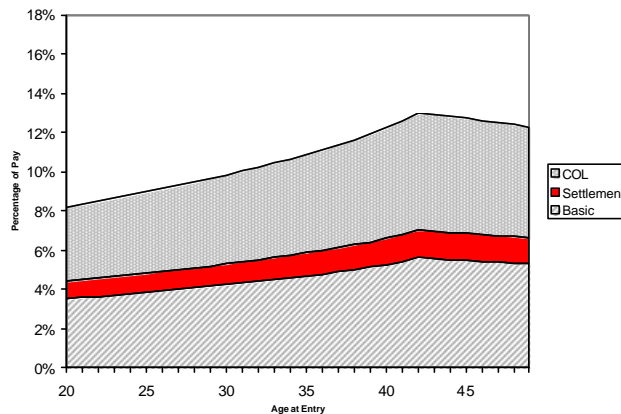
Exhibits 5A, 5B, 5C and 5D show the Basic Contribution Rates, the Settlement Contribution Rates, the COL Contribution Rates and the Total Contribution Rates, respectively for General Members using the volatility limitations and the proposed methodology adopted by FCERA. The development of Total Contribution Rates is shown in Graph 5 below.

**Graph 5**  
***Development of Total Contribution Rates***  
***Proposed Methodology with Smoothing***  
***General Members***



Exhibits 6A, 6B, 6C and 6D show the Basic Contribution Rates, the Settlement Contribution Rates, the COL Contribution Rates and the Total Contribution Rates, respectively for Safety Members using the volatility limitations and the proposed methodology adopted by FCERA. The development of Total Contribution Rates is shown in Graph 6 below.

**Graph 6**  
**Development of Total Contribution Rates**  
**Proposed Methodology with Smoothing**  
**Safety Members**



### **Review by Legal Counsel**

The changes in methodology that were adopted by the FCERA Retirement Board on the basis of our recommendation are significant. While we believe the new methodology does not violate any guidelines in the 1937 Act or the Ventura Settlement Agreement, we do not know of any other 1937 Act retirement system that calculates member contribution rates in this way. We believe that it would be prudent to have the methodology that was adopted by the FCERA Retirement Board reviewed by legal counsel.

Please let us know if you have any questions or need any additional information.

Sincerely,

Ira M. Summer, FSA  
President

Attachment

## Exhibit 1A

### General Member Basic Contribution Rates

#### Prior Methodology

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	1.67%	2.50%	40	2.43%	3.65%
21	1.70%	2.55%	41	2.48%	3.72%
22	1.73%	2.60%	42	2.53%	3.79%
23	1.77%	2.65%	43	2.57%	3.86%
24	1.80%	2.70%	44	2.63%	3.94%
25	1.83%	2.75%	45	2.67%	4.01%
26	1.87%	2.81%	46	2.73%	4.09%
27	1.91%	2.86%	47	2.78%	4.17%
28	1.95%	2.92%	48	2.83%	4.25%
29	1.98%	2.97%	49	2.89%	4.33%
30	2.02%	3.03%	50	2.95%	4.42%
31	2.06%	3.09%	51	3.01%	4.52%
32	2.10%	3.15%	52	3.08%	4.62%
33	2.14%	3.21%	53	3.15%	4.72%
34	2.18%	3.27%	54	3.23%	4.85%
35	2.22%	3.33%	55	3.33%	4.99%
36	2.26%	3.39%	56	3.31%	4.97%
37	2.30%	3.45%	57	3.30%	4.95%
38	2.35%	3.52%	58	3.29%	4.93%
39	2.39%	3.59%	59	3.27%	4.91%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.



## Exhibit 1B

### General Member Settlement Contribution Rates

#### Prior Methodology

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	0.78%	1.17%	40	1.12%	1.69%
21	0.79%	1.19%	41	1.15%	1.72%
22	0.81%	1.21%	42	1.17%	1.76%
23	0.82%	1.23%	43	1.20%	1.79%
24	0.84%	1.26%	44	1.22%	1.83%
25	0.85%	1.28%	45	1.25%	1.88%
26	0.87%	1.30%	46	1.28%	1.92%
27	0.88%	1.33%	47	1.32%	1.98%
28	0.90%	1.35%	48	1.36%	2.04%
29	0.92%	1.38%	49	1.41%	2.12%
30	0.93%	1.40%	50	1.48%	2.22%
31	0.95%	1.43%	51	1.40%	2.10%
32	0.97%	1.45%	52	1.32%	1.98%
33	0.99%	1.48%	53	1.23%	1.84%
34	1.01%	1.51%	54	1.13%	1.70%
35	1.02%	1.54%	55	1.04%	1.55%
36	1.04%	1.56%	56	1.05%	1.57%
37	1.06%	1.59%	57	1.06%	1.59%
38	1.08%	1.62%	58	1.07%	1.61%
39	1.10%	1.65%	59	1.09%	1.63%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 1C

### General Member COL Contribution Rates

#### Prior Methodology

	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>		<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
<b>Age</b>			<b>Age</b>		
20	3.05%	4.58%	40	4.45%	6.67%
21	3.11%	4.67%	41	4.53%	6.80%
22	3.17%	4.76%	42	4.62%	6.93%
23	3.23%	4.85%	43	4.71%	7.07%
24	3.30%	4.95%	44	4.81%	7.22%
25	3.36%	5.04%	45	4.91%	7.36%
26	3.43%	5.14%	46	5.01%	7.52%
27	3.49%	5.23%	47	5.13%	7.69%
28	3.56%	5.34%	48	5.25%	7.87%
29	3.62%	5.43%	49	5.37%	8.06%
30	3.69%	5.54%	50	5.53%	8.30%
31	3.77%	5.65%	51	5.52%	8.28%
32	3.83%	5.75%	52	5.50%	8.25%
33	3.91%	5.86%	53	5.47%	8.21%
34	3.98%	5.97%	54	5.45%	8.18%
35	4.05%	6.08%	55	5.45%	8.18%
36	4.13%	6.19%	56	5.45%	8.18%
37	4.20%	6.30%	57	5.45%	8.18%
38	4.29%	6.43%	58	5.45%	8.18%
39	4.37%	6.56%	59	5.45%	8.17%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 1D

### General Member Total Contribution Rates

#### Prior Methodology

	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>		<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
<b>Age</b>			<b>Age</b>		
20	5.50%	8.25%	40	8.00%	12.01%
21	5.61%	8.41%	41	8.16%	12.24%
22	5.71%	8.57%	42	8.32%	12.48%
23	5.82%	8.73%	43	8.48%	12.72%
24	5.94%	8.91%	44	8.66%	12.99%
25	6.05%	9.07%	45	8.83%	13.25%
26	6.17%	9.25%	46	9.02%	13.53%
27	6.28%	9.42%	47	9.23%	13.84%
28	6.41%	9.61%	48	9.44%	14.16%
29	6.52%	9.78%	49	9.67%	14.51%
30	6.65%	9.97%	50	9.96%	14.94%
31	6.78%	10.17%	51	9.94%	14.90%
32	6.90%	10.35%	52	9.90%	14.85%
33	7.03%	10.55%	53	9.85%	14.77%
34	7.17%	10.75%	54	9.82%	14.73%
35	7.30%	10.95%	55	9.82%	14.72%
36	7.43%	11.14%	56	9.81%	14.72%
37	7.56%	11.34%	57	9.81%	14.72%
38	7.72%	11.57%	58	9.81%	14.72%
39	7.87%	11.80%	59	9.81%	14.71%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 2A

### Safety Member Basic Contribution Rates

#### Prior Methodology

	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>		<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
<b>Age</b>			<b>Age</b>		
20	2.35%	3.53%	35	3.13%	4.70%
21	2.40%	3.60%	36	3.20%	4.80%
22	2.45%	3.67%	37	3.27%	4.91%
23	2.49%	3.73%	38	3.35%	5.02%
24	2.53%	3.80%	39	3.43%	5.15%
25	2.58%	3.87%	40	3.53%	5.29%
26	2.63%	3.94%	41	3.63%	5.45%
27	2.68%	4.02%	42	3.75%	5.63%
28	2.73%	4.09%	43	3.72%	5.58%
29	2.78%	4.17%	44	3.69%	5.53%
30	2.83%	4.25%	45	3.66%	5.49%
31	2.89%	4.33%	46	3.63%	5.44%
32	2.95%	4.42%	47	3.60%	5.40%
33	3.01%	4.51%	48	3.57%	5.35%
34	3.07%	4.60%	49	3.54%	5.31%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 2B

### Safety Member Settlement Contribution Rates

#### Prior Methodology

	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>		<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
<b>Age</b>			<b>Age</b>		
20	0.59%	0.88%	35	0.78%	1.17%
21	0.60%	0.90%	36	0.80%	1.20%
22	0.61%	0.92%	37	0.82%	1.23%
23	0.62%	0.93%	38	0.84%	1.26%
24	0.63%	0.95%	39	0.86%	1.29%
25	0.65%	0.97%	40	0.88%	1.32%
26	0.66%	0.99%	41	0.91%	1.36%
27	0.67%	1.00%	42	0.94%	1.41%
28	0.68%	1.02%	43	0.93%	1.40%
29	0.69%	1.04%	44	0.92%	1.38%
30	0.71%	1.06%	45	0.91%	1.37%
31	0.72%	1.08%	46	0.91%	1.36%
32	0.73%	1.10%	47	0.90%	1.35%
33	0.75%	1.13%	48	0.89%	1.34%
34	0.77%	1.15%	49	0.89%	1.33%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 2C

### Safety Member COL Contribution Rates

#### Prior Methodology

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	3.68%	5.52%	35	4.89%	7.34%
21	3.75%	5.62%	36	5.00%	7.50%
22	3.82%	5.73%	37	5.11%	7.67%
23	3.89%	5.83%	38	5.23%	7.85%
24	3.96%	5.94%	39	5.37%	8.05%
25	4.03%	6.05%	40	5.51%	8.26%
26	4.11%	6.16%	41	5.67%	8.51%
27	4.19%	6.28%	42	5.86%	8.79%
28	4.27%	6.40%	43	5.81%	8.72%
29	4.35%	6.52%	44	5.77%	8.65%
30	4.43%	6.64%	45	5.72%	8.58%
31	4.51%	6.77%	46	5.67%	8.51%
32	4.61%	6.91%	47	5.62%	8.43%
33	4.69%	7.04%	48	5.57%	8.36%
34	4.79%	7.19%	49	5.53%	8.29%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 2D

### Safety Member Total Contribution Rates

#### Prior Methodology

<b>Age</b>	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>	<b>Age</b>	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
20	6.63%	9.94%	35	8.81%	13.21%
21	6.75%	10.12%	36	9.00%	13.50%
22	6.87%	10.31%	37	9.20%	13.80%
23	7.00%	10.50%	38	9.42%	14.13%
24	7.13%	10.69%	39	9.65%	14.48%
25	7.26%	10.89%	40	9.91%	14.87%
26	7.39%	11.09%	41	10.21%	15.31%
27	7.53%	11.30%	42	10.55%	15.83%
28	7.67%	11.51%	43	10.47%	15.70%
29	7.82%	11.73%	44	10.38%	15.57%
30	7.97%	11.96%	45	10.29%	15.44%
31	8.13%	12.19%	46	10.21%	15.31%
32	8.29%	12.43%	47	10.12%	15.18%
33	8.45%	12.68%	48	10.04%	15.06%
34	8.63%	12.94%	49	9.95%	14.93%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 3A

### General Member Basic Contribution Rates

### Proposed Methodology without Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	1.67%	2.50%	40	2.43%	3.65%
21	1.70%	2.55%	41	2.48%	3.72%
22	1.73%	2.60%	42	2.53%	3.79%
23	1.77%	2.65%	43	2.57%	3.86%
24	1.80%	2.70%	44	2.63%	3.94%
25	1.83%	2.75%	45	2.67%	4.01%
26	1.87%	2.81%	46	2.73%	4.09%
27	1.91%	2.86%	47	2.78%	4.17%
28	1.95%	2.92%	48	2.83%	4.25%
29	1.98%	2.97%	49	2.89%	4.33%
30	2.02%	3.03%	50	2.95%	4.42%
31	2.06%	3.09%	51	3.01%	4.52%
32	2.10%	3.15%	52	3.08%	4.62%
33	2.14%	3.21%	53	3.15%	4.72%
34	2.18%	3.27%	54	3.23%	4.85%
35	2.22%	3.33%	55	3.33%	4.99%
36	2.26%	3.39%	56	3.31%	4.97%
37	2.30%	3.45%	57	3.30%	4.95%
38	2.35%	3.52%	58	3.29%	4.93%
39	2.39%	3.59%	59	3.27%	4.91%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.



## Exhibit 3B

### General Member Settlement Contribution Rates

#### Proposed Methodology without Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	0.78%	1.17%	40	1.12%	1.69%
21	0.79%	1.19%	41	1.15%	1.72%
22	0.81%	1.21%	42	1.17%	1.76%
23	0.82%	1.23%	43	1.20%	1.79%
24	0.84%	1.26%	44	1.22%	1.83%
25	0.85%	1.28%	45	1.25%	1.88%
26	0.87%	1.30%	46	1.28%	1.92%
27	0.88%	1.33%	47	1.32%	1.98%
28	0.90%	1.35%	48	1.36%	2.04%
29	0.92%	1.38%	49	1.41%	2.12%
30	0.93%	1.40%	50	1.48%	2.22%
31	0.95%	1.43%	51	1.40%	2.10%
32	0.97%	1.45%	52	1.32%	1.98%
33	0.99%	1.48%	53	1.23%	1.84%
34	1.01%	1.51%	54	1.13%	1.70%
35	1.02%	1.54%	55	1.04%	1.55%
36	1.04%	1.56%	56	1.05%	1.57%
37	1.06%	1.59%	57	1.06%	1.59%
38	1.08%	1.62%	58	1.07%	1.61%
39	1.10%	1.65%	59	1.09%	1.63%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 3C

### General Member COL Contribution Rates

#### Proposed Methodology without Smoothing

	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>		<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
<b>Age</b>			<b>Age</b>		
20	2.09%	3.13%	40	3.04%	4.56%
21	2.13%	3.19%	41	3.10%	4.65%
22	2.17%	3.26%	42	3.16%	4.74%
23	2.21%	3.32%	43	3.22%	4.83%
24	2.25%	3.38%	44	3.29%	4.93%
25	2.29%	3.44%	45	3.35%	5.03%
26	2.34%	3.51%	46	3.43%	5.14%
27	2.39%	3.58%	47	3.50%	5.25%
28	2.43%	3.65%	48	3.58%	5.37%
29	2.47%	3.71%	49	3.67%	5.51%
30	2.52%	3.78%	50	3.78%	5.67%
31	2.57%	3.86%	51	3.77%	5.66%
32	2.62%	3.93%	52	3.76%	5.64%
33	2.67%	4.01%	53	3.74%	5.61%
34	2.72%	4.08%	54	3.73%	5.59%
35	2.77%	4.16%	55	3.73%	5.59%
36	2.82%	4.23%	56	3.73%	5.59%
37	2.87%	4.31%	57	3.73%	5.59%
38	2.93%	4.39%	58	3.73%	5.59%
39	2.99%	4.48%	59	3.73%	5.59%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 3D

### General Member Total Contribution Rates

#### Proposed Methodology without Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	4.53%	6.80%	40	6.60%	9.90%
21	4.62%	6.93%	41	6.73%	10.09%
22	4.71%	7.07%	42	6.86%	10.29%
23	4.80%	7.20%	43	6.99%	10.48%
24	4.89%	7.34%	44	7.14%	10.70%
25	4.98%	7.47%	45	7.28%	10.92%
26	5.08%	7.62%	46	7.44%	11.15%
27	5.18%	7.77%	47	7.60%	11.40%
28	5.28%	7.92%	48	7.77%	11.66%
29	5.37%	8.06%	49	7.97%	11.96%
30	5.47%	8.21%	50	8.21%	12.31%
31	5.58%	8.38%	51	8.19%	12.28%
32	5.69%	8.53%	52	8.16%	12.24%
33	5.80%	8.70%	53	8.12%	12.17%
34	5.91%	8.86%	54	8.09%	12.14%
35	6.02%	9.03%	55	8.09%	12.13%
36	6.12%	9.18%	56	8.09%	12.13%
37	6.24%	9.35%	57	8.09%	12.13%
38	6.36%	9.53%	58	8.09%	12.13%
39	6.48%	9.72%	59	8.09%	12.13%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 4A

### Safety Member Basic Contribution Rates Proposed Methodology without Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	2.35%	3.53%	35	3.13%	4.70%
21	2.40%	3.60%	36	3.20%	4.80%
22	2.45%	3.67%	37	3.27%	4.91%
23	2.49%	3.73%	38	3.35%	5.02%
24	2.53%	3.80%	39	3.43%	5.15%
25	2.58%	3.87%	40	3.53%	5.29%
26	2.63%	3.94%	41	3.63%	5.45%
27	2.68%	4.02%	42	3.75%	5.63%
28	2.73%	4.09%	43	3.72%	5.58%
29	2.78%	4.17%	44	3.69%	5.53%
30	2.83%	4.25%	45	3.66%	5.49%
31	2.89%	4.33%	46	3.63%	5.44%
32	2.95%	4.42%	47	3.60%	5.40%
33	3.01%	4.51%	48	3.57%	5.35%
34	3.07%	4.60%	49	3.54%	5.31%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 4B

### Safety Member Settlement Contribution Rates

#### Proposed Methodology without Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	0.59%	0.88%	35	0.78%	1.17%
21	0.60%	0.90%	36	0.80%	1.20%
22	0.61%	0.92%	37	0.82%	1.23%
23	0.62%	0.93%	38	0.84%	1.26%
24	0.63%	0.95%	39	0.86%	1.29%
25	0.65%	0.97%	40	0.88%	1.32%
26	0.66%	0.99%	41	0.91%	1.36%
27	0.67%	1.00%	42	0.94%	1.41%
28	0.68%	1.02%	43	0.93%	1.40%
29	0.69%	1.04%	44	0.92%	1.38%
30	0.71%	1.06%	45	0.91%	1.37%
31	0.72%	1.08%	46	0.91%	1.36%
32	0.73%	1.10%	47	0.90%	1.35%
33	0.75%	1.13%	48	0.89%	1.34%
34	0.77%	1.15%	49	0.89%	1.33%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

**Exhibit 4C**  
**Safety Member COL Contribution Rates**  
**Proposed Methodology without Smoothing**

<b>Age</b>	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>	<b>Age</b>	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
20	2.51%	3.77%	35	3.34%	5.01%
21	2.56%	3.84%	36	3.41%	5.12%
22	2.61%	3.91%	37	3.49%	5.24%
23	2.66%	3.99%	38	3.57%	5.36%
24	2.71%	4.06%	39	3.67%	5.50%
25	2.75%	4.13%	40	3.77%	5.65%
26	2.81%	4.21%	41	3.87%	5.81%
27	2.86%	4.29%	42	4.01%	6.01%
28	2.91%	4.37%	43	3.97%	5.96%
29	2.97%	4.45%	44	3.94%	5.91%
30	3.03%	4.54%	45	3.91%	5.86%
31	3.09%	4.63%	46	3.87%	5.81%
32	3.15%	4.72%	47	3.84%	5.76%
33	3.21%	4.81%	48	3.81%	5.72%
34	3.27%	4.91%	49	3.78%	5.67%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

**Exhibit 4D**

**Safety Member Total Contribution Rates**

**Proposed Methodology without Smoothing**

<b>Age</b>	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>	<b>Age</b>	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
20	5.46%	8.19%	35	7.26%	10.89%
21	5.56%	8.34%	36	7.41%	11.12%
22	5.66%	8.49%	37	7.58%	11.37%
23	5.77%	8.65%	38	7.76%	11.64%
24	5.87%	8.81%	39	7.95%	11.93%
25	5.98%	8.97%	40	8.17%	12.26%
26	6.09%	9.14%	41	8.41%	12.62%
27	6.21%	9.31%	42	8.69%	13.04%
28	6.33%	9.49%	43	8.62%	12.93%
29	6.45%	9.67%	44	8.55%	12.83%
30	6.57%	9.85%	45	8.48%	12.72%
31	6.69%	10.04%	46	8.41%	12.62%
32	6.83%	10.24%	47	8.34%	12.51%
33	6.97%	10.45%	48	8.27%	12.41%
34	7.11%	10.66%	49	8.20%	12.30%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 5A

### General Member Basic Contribution Rates

#### Proposed Methodology with Smoothing

	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>		<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
<b>Age</b>			<b>Age</b>		
20	1.67%	2.50%	40	2.43%	3.65%
21	1.70%	2.55%	41	2.48%	3.72%
22	1.73%	2.60%	42	2.53%	3.79%
23	1.77%	2.65%	43	2.57%	3.86%
24	1.80%	2.70%	44	2.63%	3.94%
25	1.83%	2.75%	45	2.67%	4.01%
26	1.87%	2.81%	46	2.73%	4.09%
27	1.91%	2.86%	47	2.78%	4.17%
28	1.95%	2.92%	48	2.83%	4.25%
29	1.98%	2.97%	49	2.89%	4.33%
30	2.02%	3.03%	50	2.95%	4.42%
31	2.06%	3.09%	51	3.01%	4.52%
32	2.10%	3.15%	52	3.08%	4.62%
33	2.14%	3.21%	53	3.15%	4.72%
34	2.18%	3.27%	54	3.23%	4.85%
35	2.22%	3.33%	55	3.33%	4.99%
36	2.26%	3.39%	56	3.31%	4.97%
37	2.30%	3.45%	57	3.30%	4.95%
38	2.35%	3.52%	58	3.29%	4.93%
39	2.39%	3.59%	59	3.27%	4.91%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.



## Exhibit 5B

### General Member Settlement Contribution Rates

#### Proposed Methodology with Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	0.78%	1.17%	40	1.12%	1.69%
21	0.79%	1.19%	41	1.15%	1.72%
22	0.81%	1.21%	42	1.17%	1.76%
23	0.82%	1.23%	43	1.20%	1.79%
24	0.84%	1.26%	44	1.22%	1.83%
25	0.85%	1.28%	45	1.25%	1.88%
26	0.87%	1.30%	46	1.28%	1.92%
27	0.88%	1.33%	47	1.32%	1.98%
28	0.90%	1.35%	48	1.36%	2.04%
29	0.92%	1.38%	49	1.41%	2.12%
30	0.93%	1.40%	50	1.48%	2.22%
31	0.95%	1.43%	51	1.40%	2.10%
32	0.97%	1.45%	52	1.32%	1.98%
33	0.99%	1.48%	53	1.23%	1.84%
34	1.01%	1.51%	54	1.13%	1.70%
35	1.02%	1.54%	55	1.04%	1.55%
36	1.04%	1.56%	56	1.05%	1.57%
37	1.06%	1.59%	57	1.06%	1.59%
38	1.08%	1.62%	58	1.07%	1.61%
39	1.10%	1.65%	59	1.09%	1.63%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 5C

### General Member COL Contribution Rates

#### Proposed Methodology with Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	1.15%	1.72%	40	1.48%	2.21%
21	1.14%	1.71%	41	1.50%	2.25%
22	1.13%	1.70%	42	1.53%	2.30%
23	1.13%	1.69%	43	1.56%	2.34%
24	1.13%	1.70%	44	1.58%	2.37%
25	1.14%	1.71%	45	1.61%	2.41%
26	1.14%	1.71%	46	1.62%	2.44%
27	1.15%	1.73%	47	1.64%	2.46%
28	1.16%	1.74%	48	1.65%	2.47%
29	1.18%	1.77%	49	1.65%	2.48%
30	1.20%	1.80%	50	1.63%	2.45%
31	1.22%	1.83%	51	1.75%	2.63%
32	1.24%	1.86%	52	1.88%	2.83%
33	1.27%	1.90%	53	2.02%	3.03%
34	1.30%	1.95%	54	2.15%	3.22%
35	1.33%	1.99%	55	2.27%	3.40%
36	1.36%	2.04%	56	2.38%	3.58%
37	1.39%	2.08%	57	2.50%	3.75%
38	1.42%	2.12%	58	2.62%	3.94%
39	1.44%	2.16%	59	2.75%	4.12%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 5D

### General Member Total Contribution Rates

#### Proposed Methodology with Smoothing

	<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>		<b>Rate on First \$350 of Monthly Compensation</b>	<b>Rate on Compensation in Excess of \$350 per Month</b>
<b>Age</b>			<b>Age</b>		
20	3.59%	5.39%	40	5.03%	7.55%
21	3.63%	5.45%	41	5.13%	7.70%
22	3.67%	5.51%	42	5.23%	7.84%
23	3.72%	5.58%	43	5.33%	7.99%
24	3.77%	5.65%	44	5.43%	8.14%
25	3.82%	5.74%	45	5.53%	8.29%
26	3.88%	5.82%	46	5.63%	8.45%
27	3.95%	5.92%	47	5.74%	8.61%
28	4.01%	6.01%	48	5.84%	8.77%
29	4.08%	6.12%	49	5.95%	8.93%
30	4.15%	6.23%	50	6.06%	9.09%
31	4.23%	6.34%	51	6.17%	9.26%
32	4.31%	6.46%	52	6.28%	9.42%
33	4.39%	6.59%	53	6.40%	9.60%
34	4.48%	6.72%	54	6.51%	9.77%
35	4.57%	6.86%	55	6.63%	9.94%
36	4.66%	6.99%	56	6.74%	10.12%
37	4.75%	7.13%	57	6.86%	10.30%
38	4.84%	7.27%	58	6.98%	10.48%
39	4.94%	7.41%	59	7.10%	10.66%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 1/3 male and 2/3 female), with adjustment for white collar workers.

## Exhibit 6A

### Safety Member Basic Contribution Rates Proposed Methodology with Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	2.35%	3.53%	35	3.13%	4.70%
21	2.40%	3.60%	36	3.20%	4.80%
22	2.45%	3.67%	37	3.27%	4.91%
23	2.49%	3.73%	38	3.35%	5.02%
24	2.53%	3.80%	39	3.43%	5.15%
25	2.58%	3.87%	40	3.53%	5.29%
26	2.63%	3.94%	41	3.63%	5.45%
27	2.68%	4.02%	42	3.75%	5.63%
28	2.73%	4.09%	43	3.72%	5.58%
29	2.78%	4.17%	44	3.69%	5.53%
30	2.83%	4.25%	45	3.66%	5.49%
31	2.89%	4.33%	46	3.63%	5.44%
32	2.95%	4.42%	47	3.60%	5.40%
33	3.01%	4.51%	48	3.57%	5.35%
34	3.07%	4.60%	49	3.54%	5.31%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 6B

### Safety Member Settlement Contribution Rates

#### Proposed Methodology with Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	0.59%	0.88%	35	0.78%	1.17%
21	0.60%	0.90%	36	0.80%	1.20%
22	0.61%	0.92%	37	0.82%	1.23%
23	0.62%	0.93%	38	0.84%	1.26%
24	0.63%	0.95%	39	0.86%	1.29%
25	0.65%	0.97%	40	0.88%	1.32%
26	0.66%	0.99%	41	0.91%	1.36%
27	0.67%	1.00%	42	0.94%	1.41%
28	0.68%	1.02%	43	0.93%	1.40%
29	0.69%	1.04%	44	0.92%	1.38%
30	0.71%	1.06%	45	0.91%	1.37%
31	0.72%	1.08%	46	0.91%	1.36%
32	0.73%	1.10%	47	0.90%	1.35%
33	0.75%	1.13%	48	0.89%	1.34%
34	0.77%	1.15%	49	0.89%	1.33%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 6C

### Safety Member COL Contribution Rates

#### Proposed Methodology with Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	2.51%	3.77%	35	3.34%	5.01%
21	2.56%	3.84%	36	3.41%	5.12%
22	2.61%	3.91%	37	3.49%	5.24%
23	2.66%	3.99%	38	3.57%	5.36%
24	2.71%	4.06%	39	3.67%	5.50%
25	2.75%	4.13%	40	3.77%	5.65%
26	2.81%	4.21%	41	3.87%	5.81%
27	2.86%	4.29%	42	3.96%	5.94%
28	2.91%	4.37%	43	3.97%	5.96%
29	2.97%	4.45%	44	3.94%	5.91%
30	3.03%	4.54%	45	3.91%	5.86%
31	3.09%	4.63%	46	3.87%	5.81%
32	3.15%	4.72%	47	3.84%	5.76%
33	3.21%	4.81%	48	3.81%	5.72%
34	3.27%	4.91%	49	3.78%	5.67%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.

## Exhibit 6D

### Safety Member Total Contribution Rates

### Proposed Methodology with Smoothing

Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month	Age	Rate on First \$350 of Monthly Compensation	Rate on Compensation in Excess of \$350 per Month
20	5.46%	8.19%	35	7.26%	10.89%
21	5.56%	8.34%	36	7.41%	11.12%
22	5.66%	8.49%	37	7.58%	11.37%
23	5.77%	8.65%	38	7.76%	11.64%
24	5.87%	8.81%	39	7.95%	11.93%
25	5.98%	8.97%	40	8.17%	12.26%
26	6.09%	9.14%	41	8.41%	12.62%
27	6.21%	9.31%	42	8.65%	12.98%
28	6.33%	9.49%	43	8.62%	12.93%
29	6.45%	9.67%	44	8.55%	12.83%
30	6.57%	9.85%	45	8.48%	12.72%
31	6.69%	10.04%	46	8.41%	12.62%
32	6.83%	10.24%	47	8.34%	12.51%
33	6.97%	10.45%	48	8.27%	12.41%
34	7.11%	10.66%	49	8.20%	12.30%

The above rates are based on 8.16% interest and RP-2000 Healthy Annuitant Mortality (weighted 5/6 male and 1/6 female), with adjustment for blue collar workers.