To: Andrea Tevlin, Independent Budget Analyst
From: Joseph Esuchanko, Consulting Actuary JE
Subject: SDCERS Design Alternatives with Savings
Date: April 7, 2008

At your request, we have performed an actuarial valuation of various retirement program design alternatives being considered for general employees hired after the ratification of new labor contracts. This project consisted of two major tasks.

Our first goal was to design an interactive Excel program to be used by the Independent Budget Analyst to test design alternatives to determine the amount of final compensation replaced with implementation of a particular combination of design parameters. Accordingly, we created a program where the values of certain variables were allowed to be changed independently, thus permitting consideration of a number of various combinations. Those variables made available were:

- Defined benefit multiplier at age 65. Under the current SDCERS design the multiplier is 2.8%. Lower multipliers were able to be chosen.

- Defined benefit multipliers at individual retirement ages 55 through 64. Choice of these multipliers allowed the reductions for retirement ages before age 65 to be such that they created a greater incentive for the employee to remain employed until age 65.

- Maximum aggregate defined benefit multiplier. Currently, there is no such maximum, thus making it possible for an employee to retire with a benefit greater than his or her final compensation.

- Number of years included in final average compensation. The current SDCERS formula utilizes only the highest compensation received in any 12 consecutive months of employment. Longer periods of time were considered in the new design alternatives.

- SPSP mandatory and voluntary employee and City contribution rates. These four factors comprise a significant part of a retiree's income. They must be considered in the design of a complete retirement program.

- Investment rate of return on SPSP investments. Since SPSP investments are directed by the employee, the amount of retirement income is directly impacted by the results achieved. The 8%

assumption used by the actuary in determining the defined benefit ARC is not necessarily appropriate for SPSP investments.

- Inflation factor. Care must be given to assure that IRS limits on employee contributions and benefits are not exceeded. The inflation factor is used to increase those limits appropriately in the future.

- Annuity rate of return. In order to compute a replacement ratio for an individual, we must convert the accumulated SPSP accounts to defined benefits. This does not require the retiree to take his or her benefits in the form of an annuity. Rather, it allows us to set an income value on those funds.

- Age at hire. Since retirement income is, in part, a function of length of employment, we can determine replacement ratios applicable to various lengths of service.

Using this program, the Independent Budget Analyst developed five different design combinations for valuation. A sixth design was added, analogous to the CalPERS 2% at age 60 option. We then added four additional alternatives, bringing the total to ten. The ten designs had different features and goals, as described here:

1. 2% defined benefit multiplier at age 65, with true actuarial reduction applied to determine factors at earlier ages; 3% mandatory SPSP contributions by both the employee and the City; 0% voluntary SPSP contributions by both the employee and the City. The goal was to create an incentive for employees to stay until age 65 and then receive retirement income sufficient to replace at least 80% of pre-retirement final compensation.

2. 2% defined benefit multiplier at age 65, with a uniform reduction applied to determine factors at earlier ages; 3% mandatory SPSP contributions by both the employee and the City; 0% voluntary SPSP contributions by both the employee and the City. Since the early retirement reductions were smaller, less incentive is given for staying to age 65, but the reductions are still greater than SDCERS currently employs.

3. 2.25% defined benefit multiplier at age 65, with true actuarial reduction applied to determine factors at earlier ages; 3% mandatory SPSP contributions by both the employee and the City; 0% voluntary SPSP contributions by both the employee and the City. This creates a greater incentive for later retirement, while placing most of the risk associated with adverse experience in areas such as investment return, salary increases and life expectancy on the City.

4. 1.75% defined benefit multiplier at age 65, with true actuarial reduction applied to determine factors at earlier ages; 5% mandatory SPSP contributions by the employee, 2.5% mandatory SPSP contributions by the City; 3% voluntary SPSP contributions by the employee, 1.5% voluntary SPSP contributions by the City. This is transferring more of the risk associated with adverse experience to the employee.

5. 2% defined benefit multiplier at age 65, with true actuarial reduction applied to determine factors at earlier ages; 0% mandatory SPSP contributions by both the employee and the City; up to 5% voluntary SPSP contributions by the employee and 4% voluntary SPSP contributions by the City. The City match on voluntary SPSP contributions would be 100% of the first 3% contributed by the employee and 50% of the next 2% contributed by the employee. This is similar to design 1, but it shifts more responsibility to the employee by removing mandatory SPSP contributions and replacing them with voluntary SPSP contributions.

6. Same as design 5, with addition of 2% mandatory City SPSP contribution. This brings the total City contribution to approximately 12%. This design was added by Actuarial Service Company.

7. Designed to approximate CalPERS 2% at age 60 alternative. The retirement benefit matches CalPERS; however, no attempt has been made to match any ancillary benefits, since these are subject to choice by the City. Ancillary benefits were assumed to be the same as SDCERS.

8. The Mayor has proposed a design alternative. We have attempted to duplicate that proposal for comparative purposes, where all assumptions and methods are the same as the other designs.

9. Also for comparative purposes, the current SDCERS design has been illustrated.

10. Although City employees are not covered under Social Security, benefits for a person currently earning $35,000 annually at his or her date of hire are shown for comparison to our defined benefit designs.

For all designs, the following assumptions have been made:

- Investment return rate on SPSP: 6%
- Inflation factor: 3%
- Annuity rate of return: 6%

We have attached four exhibits to this report. Exhibit 1 assumes one year final average compensation and age 30 at hire (35 years of service at age 65). Exhibit 2 assumes one year final average compensation and age 35 at hire (30 years of service at age 65). Exhibit 3 assumes three year final average compensation and age 30 at hire. Exhibit 4 assumes three year final average compensation and age 35 at hire.

Of the first seven designs (those for consideration of alternatives), all but number 4 provide a defined benefit replacement of at least 70% at age 65. However, defined benefit replacement ratios for retirement at age 55, age at hire of 30, and three year final average compensation, range from 15.84% in design 4 to 34.87% in the CalPERS design. These compare to 62.5% currently under SDCERS.

Various studies have been published which conclude that the necessary replacement ratio at age 65 ranges from 75% to 90%, depending on the person's compensation level immediately preceding retirement. Replacement of income is assumed to come from three sources: employer retirement plan, Social Security and personal savings. Since City employees are not covered by Social Security, there remains the City defined benefit plan, the City SPSP and personal savings. All the designs considered provide replacement ratios at least equal to those necessary.

Having settled on the various designs to consider, it became necessary to value them, i.e. determine the savings to the City upon implementation. To do so, we have employed all the assumptions used by the SDCERS actuary in his annual actuarial valuation, with one exception. Since these designs provide an incentive to retire at a later date, we have changed the probabilities of retirement at ages 55 - 64 to reflect the success of the designs. This has led to reduced savings compared to no change in the assumption.

We have attached to this report four otherwise identical exhibits, with the following exceptions:

1. Based on one year final average compensation and 35 years of service at age 65

2. Based on one year final average compensation and 30 years of service at age 65

3. Based on three year final average compensation and 35 years of service at age 65

4. Based on three year final average compensation and 30 years of service at age 65

Concentrating on Exhibit 3, we observe the following:

- All designs, other than Social Security produce a replacement ratio at age 65 greater than 82%

- The current SDCERS replacement ratio at age 65 is almost 134%. This is far greater than the range of replacement ratios in designs one through six and the Mayor's design. The total CalPERS design would be dependent on the SPSP choice of variables.

- Other than design 6, the contribution rates are within the range of 9% to 10%, compared to almost 16% for the current SDCERS.

- Other than design 6, the contribution savings are within the range of $20 million to $23.6 million.

- The replacement ratio for any defined benefit / defined contribution combination is significantly higher than a combination of lesser City benefits and Social Security.

- Variation of designs one, two or three, with no mandatory SPSP contributions, but with 3% voluntary contributions, would produce the same replacement ratios and greater savings. The savings would be greater since not all employees would contribute the maximum voluntary amount. This would place more responsibility on the employee to save for retirement.

We have also calculated the annual savings based on changing only the final average compensation from one year to three years. That amount is $1.2 million.

Savings will increase annually as the active post-ratification population grows and the active pre-ratification population shrinks.

The results of this study are to be used only for approximating savings created by various retirement plan designs. They are not intended to produce a measurement of the future value of the defined benefit ARC. Any use of these results, other than for the purpose intended, would be inappropriate.

Retirement Plan Design Alternatives with One Year FAC and 35 Years Service at Age 65

	Design One	Design Two	Design Three	Design Four	Design Five	Design Six	CalPERS Design	Mayor Design	Current SDCERS	Soc. Sec. Design
Defined Benefit Multiplier										
Age 65	2.00%	2.00%	2.25%	1.75%	2.00%	2.00%	2.418%	1.60%	2.80%	N/A
Age 62	1.48%	1.70%	1.67%	1.30%	1.48%	1.48%	2.272%	1.18%	2.65%	N/A
Age 60	1.22%	1.50%	1.37%	1.07%	1.22%	1.22%	2.000%	0.97%	2.55%	N/A
Age 55	0.76%	1.00%	0.85%	0.66%	0.76%	0.76%	1.460%	0.61%	2.50%	N/A
Defined Benefit Cap	75%	75%	75%	75%	75%	75%	N/A	N/A	N/A	N/A
Years in Final Average Compensation	1	1	1	1	1	1	3	3	1	N/A
SPSP Mandatory Employee Contribution Rate	3.00%	3.00%	3.00%	5.00%	0.00%	0.00%	N/A	1.00%	3.00%	N/A
SPSP Mandatory Employer Contribution Rate	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
SPSP Voluntary Employee Contribution Rate	0.00%	0.00%	0.00%	3.00%	5.00%	5.00%	N/A	5.00%	3.05%	N/A
SPSP Voluntary Employer Contribution Rate	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	Points	3.05%	N/A
Investment Return Rate on SPSP	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Inflation Factor	3%	3%	3%	3%	3%	3%	N/A	3%	3%	N/A
Annuity Rate of Return	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Age at Hire	30	30	30	30	30	30	30	30	30	30
Income Replacement Ratio										
Age 65										
Defined Benefit	70.00%	70.00%	75.00%	61.25%	70.00%	70.00%	80.85%	53.50%	98.00%	39.00%
Defined Contribution	17.78%	17.78%	17.78%	35.55%	26.66%	32.59%	N/A	28.74%	35.85%	N/A
Total	87.78%	87.78%	92.78%	96.80%	96.66%	102.59%	N/A	82.24%	133.85%	N/A
Age 62										
Defined Benefit	47.40%	54.56%	53.32%	41.47%	47.40%	47.40%	69.46%	36.22%	84.80%	31.50%
Defined Contribution	14.92%	14.92%	14.92%	29.83%	22.38%	27.35%	N/A	23.77%	30.08%	N/A
Total	62.32%	69.48%	68.24%	71.30%	69.78%	74.75%	N/A	59.99%	114.88%	N/A
Age 60										
Defined Benefit	36.54%	45.15%	41.10%	31.97%	36.54%	36.54%	57.32%	27.92%	76.50%	N/A
Defined Contribution	13.26%	13.26%	13.26%	26.52%	19.89%	24.31%	N/A	20.90%	26.75%	N/A
Total	49.80%	58.41%	54.36%	58.49%	56.43%	60.85%	N/A	48.82%	103.25%	N/A
Age 55										
Defined Benefit	18.95%	25.12%	21.31%	16.58%	18.95%	18.95%	34.87%	14.48%	62.50%	N/A
Defined Contribution	9.81%	9.81%	9.81%	19.62%	14.72%	17.99%	N/A	14.90%	19.79%	N/A
Total	28.76%	34.93%	31.12%	36.20%	33.67%	36.94%	N/A	29.38%	82.29%	N/A
Defined Benefit Contribution Percent	6.20%	6.80%	6.70%	5.70%	6.20%	6.20%	7.62%	5.10%	9.89%	6.20%
Mandatory Defined Contribution Percent	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
Voluntary Defined Contribution Percent	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	1.50%	3.05%	N/A
Total Contribution Percent	9.20%	9.80%	9.70%	9.70%	10.20%	12.20%	N/A	9.60%	15.94%	N/A
Defined Benefit Annual City Savings (in millions)*	$12.9	$11.0	$11.1	$14.8	$12.9	$12.9	$7.9	$16.8	N/A	$12.7
Mandatory Defined Contribution Annual City Savings (in millions)*	$0.0	$0.0	$0.0	$1.8	$10.7	$3.6	N/A	$0.0	N/A	N/A
Voluntary Defined Contribution Annual City Savings (in millions)*	$9.8	$9.8	$9.8	$4.4	-$4.5	-$4.5	N/A	$5.5	N/A	N/A
Total Annual City Savings (in millions)*	$22.7	$20.8	$20.9	$21.0	$19.1	$12.0	N/A	$22.3	N/A	N/A
Total First Year City Savings*	$1.1	$1.0	$0.9	$1.0	$0.9	$0.5	$0.3	$1.2	N/A	$0.8

* Savings for CalPERS and Social Security are for defined benefit only, savings are based on the current value of a dollar

Exhibit 1

ATTACHMENT

Retirement Plan Design Alternatives with One Year FAC and 30 Years Service at Age 65

	Design One	Design Two	Design Three	Design Four	Design Five	Design Six	CalPERS Design	Mayor Design	Current SDCERS	Soc. Sec. Design
Defined Benefit Multiplier										
Age 65	2.00%	2.00%	2.25%	1.75%	2.00%	2.00%	2.418%	1.60%	2.80%	N/A
Age 62	1.48%	1.70%	1.67%	1.30%	1.48%	1.48%	2.272%	1.18%	2.65%	N/A
Age 60	1.22%	1.50%	1.37%	1.07%	1.22%	1.22%	2.000%	0.97%	2.55%	N/A
Age 55	0.76%	1.00%	0.85%	0.66%	0.76%	0.76%	1.460%	0.61%	2.50%	N/A
Defined Benefit Cap	75%	75%	75%	75%	75%	75%	N/A	N/A	N/A	N/A
Years in Final Average Compensation	1	1	1	1	1	1	3	3	1	N/A
SPSP Mandatory Employee Contribution Rate	3.00%	3.00%	3.00%	5.00%	0.00%	0.00%	N/A	1.00%	3.00%	N/A
SPSP Mandatory Employer Contribution Rate	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
SPSP Voluntary Employee Contribution Rate	0.00%	0.00%	0.00%	3.00%	5.00%	5.00%	N/A	5.00%	3.05%	N/A
SPSP Voluntary Employer Contribution Rate	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	Points	3.05%	N/A
Investment Return Rate on SPSP	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Inflation Factor	3%	3%	3%	3%	3%	3%	N/A	3%	3%	N/A
Annuity Rate of Return	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Age at Hire	35	35	35	35	35	35	35	35	35	35
Income Replacement Ratio										
Age 65										
Defined Benefit	60.00%	60.00%	67.50%	52.50%	60.00%	60.00%	69.30%	45.86%	84.00%	33.43%
Defined Contribution	14.75%	14.75%	14.75%	29.50%	22.13%	27.04%	N/A	24.14%	29.75%	N/A
Total	74.75%	74.75%	82.25%	82.00%	82.13%	87.04%	N/A	70.00%	113.75%	N/A
Age 62										
Defined Benefit	39.99%	46.03%	44.99%	34.99%	39.99%	39.99%	58.60%	30.56%	71.55%	27.00%
Defined Contribution	12.18%	12.18%	12.18%	24.37%	18.28%	22.34%	N/A	19.63%	24.57%	N/A
Total	52.17%	58.21%	57.17%	59.36%	58.27%	62.33%	N/A	50.19%	96.12%	N/A
Age 60										
Defined Benefit	30.45%	37.62%	34.25%	26.64%	30.45%	30.45%	47.77%	23.27%	63.75%	N/A
Defined Contribution	10.70%	10.70%	10.70%	21.40%	16.05%	19.61%	N/A	17.01%	21.58%	N/A
Total	41.15%	48.32%	44.95%	48.04%	46.50%	50.06%	N/A	40.28%	85.33%	N/A
Age 55										
Defined Benefit	15.16%	20.10%	17.05%	13.26%	15.16%	15.16%	27.90%	11.58%	50.00%	N/A
Defined Contribution	7.60%	7.60%	7.60%	15.19%	11.39%	13.93%	N/A	11.54%	15.32%	N/A
Total	22.76%	27.70%	24.65%	28.45%	26.55%	29.09%	N/A	23.12%	65.32%	N/A
Defined Benefit Contribution Percent	6.20%	6.80%	6.70%	5.70%	6.20%	6.20%	7.62%	5.10%	9.89%	6.20%
Mandatory Defined Contribution Percent	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
Voluntary Defined Contribution Percent	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	1.50%	3.05%	N/A
Total Contribution Percent	9.20%	9.80%	9.70%	9.70%	10.20%	12.20%	N/A	9.60%	15.94%	N/A
Defined Benefit Annual City Savings (in millions)*	$12.9	$11.0	$11.1	$14.8	$12.9	$12.9	$7.9	$16.8	N/A	$12.7
Mandatory Defined Contribution Annual City Savings (in millions)*	$0.0	$0.0	$0.0	$1.8	$10.7	$3.6	N/A	$0.0	N/A	N/A
Voluntary Annual City Savings (in millions)*	$9.8	$9.8	$9.8	$4.4	-$4.5	-$4.5	N/A	$5.5	N/A	N/A
Total Annual City Savings (in millions)*	$22.7	$20.8	$20.9	$21.0	$19.1	$12.0	N/A	$22.3	N/A	N/A
First Year City Savings*	$1.1	$1.0	$0.9	$1.0	$0.9	$0.5	$0.3	$1.2	N/A	$0.8

* Savings for CalPERS and Social Security are for defined benefit only, savings are based on the current value of a dollar

ATTACHMENT

Retirement Plan Design Alternatives with Three Year FAC and 35 Years Service at Age 65

	Design One	Design Two	Design Three	Design Four	Design Five	Design Six	CalPERS Design	Mayor Design	Current SDCERS	Soc. Sec. Design
Defined Benefit Multiplier										
Age 65	2.00%	2.00%	2.25%	1.75%	2.00%	2.00%	2.418%	1.60%	2.80%	N/A
Age 62	1.48%	1.70%	1.67%	1.30%	1.48%	1.48%	2.272%	1.18%	2.65%	N/A
Age 60	1.22%	1.50%	1.37%	1.07%	1.22%	1.22%	2.000%	0.97%	2.55%	N/A
Age 55	0.76%	1.00%	0.85%	0.66%	0.76%	0.76%	1.460%	0.61%	2.50%	N/A
Defined Benefit Cap	75%	75%	75%	75%	75%	75%	N/A	N/A	N/A	N/A
Years in Final Average Compensation	3	3	3	3	3	3	3	3	1	N/A
SPSP Mandatory Employee Contribution Rate	3.00%	3.00%	3.00%	5.00%	0.00%	0.00%	N/A	1.00%	3.00%	N/A
SPSP Mandatory Employer Contribution Rate	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
SPSP Voluntary Employee Contribution Rate	0.00%	0.00%	0.00%	3.00%	5.00%	5.00%	N/A	5.00%	3.05%	N/A
SPSP Voluntary Employer Contribution Rate	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	Points	3.05%	N/A
Investment Return Rate on SPSP	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Inflation Factor	3%	3%	3%	3%	3%	3%	N/A	3%	3%	N/A
Annuity Rate of Return	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Age at Hire	30	30	30	30	30	30	30	30	30	30
Income Replacement Ratio										
Age 65										
Defined Benefit	66.87%	66.87%	71.65%	58.51%	66.87%	66.87%	80.85%	53.50%	98.00%	39.00%
Defined Contribution	17.78%	17.78%	17.78%	35.55%	26.66%	32.59%	N/A	28.74%	35.85%	N/A
Total	84.65%	84.65%	89.84%	94.06%	93.53%	99.46%	N/A	82.24%	133.85%	N/A
Age 62										
Defined Benefit	45.28%	52.12%	50.94%	39.62%	45.28%	45.28%	69.46%	36.22%	84.80%	31.50%
Defined Contribution	14.92%	14.92%	14.92%	29.83%	22.38%	27.35%	N/A	23.77%	30.08%	N/A
Total	60.20%	67.04%	65.86%	69.45%	67.66%	72.63%	N/A	59.99%	114.88%	N/A
Age 60										
Defined Benefit	34.91%	43.13%	39.27%	30.54%	34.91%	34.91%	57.32%	27.92%	76.50%	N/A
Defined Contribution	13.26%	13.26%	13.26%	26.52%	19.89%	24.31%	N/A	20.90%	26.75%	N/A
Total	48.17%	56.39%	52.53%	57.06%	54.80%	59.22%	N/A	48.82%	103.25%	N/A
Age 55										
Defined Benefit	18.10%	24.00%	20.36%	15.84%	18.10%	18.10%	34.87%	14.48%	62.50%	N/A
Defined Contribution	9.81%	9.81%	9.81%	19.62%	14.72%	17.99%	N/A	14.90%	19.79%	N/A
Total	27.91%	33.81%	30.17%	35.46%	32.82%	36.09%	N/A	29.38%	82.29%	N/A
Defined Benefit Contribution Percent	6.00%	6.50%	6.50%	5.40%	6.00%	6.00%	7.62%	5.10%	9.89%	6.20%
Mandatory Defined Contribution Percent	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
VoluntaryDefined Contribution Percent	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	1.50%	3.05%	N/A
Total Contribution Percent	9.00%	9.50%	9.50%	9.40%	10.00%	12.00%	N/A	9.60%	15.94%	N/A
Defined Benefit Annual City Savings (in millions)*	$13.8	$12.0	$12.1	$15.7	$13.8	$13.8	$7.9	$16.8	N/A	$12.7
Mandatory Defined Contribution Annual City Savings (in millions)*	$0.0	$0.0	$0.0	$1.8	$10.7	$3.6	N/A	$0.0	N/A	N/A
Voluntary Defined Contribution Annual City Savings (in millions)*	$9.8	$9.8	$9.8	$4.4	-$4.5	-$4.5	N/A	$5.5	N/A	N/A
Total Annual City Savings (in millions)*	$23.6	$21.8	$21.9	$21.9	$20.0	$12.9	N/A	$22.3	N/A	N/A
First Year City Savings*	$1.1	$1.0	$1.0	$1.0	$0.9	$0.6	$0.3	$1.2	N/A	$0.8

* Savings for CalPERS and Social Security are for defined benefit only, savings are based on the current value of a dollar

ATTACHMENT

Retirement Plan Design Alternatives with Three Year FAC and 30 Years Service at Age 65

	Design One	Design Two	Design Three	Design Four	Design Five	Design Six	CalPERS Design	Mayor Design	Current SDCERS	Soc. Sec. Design
Defined Benefit Multiplier										
Age 65	2.00%	2.00%	2.25%	1.75%	2.00%	2.00%	2.418%	1.60%	2.80%	N/A
Age 62	1.48%	1.70%	1.67%	1.30%	1.48%	1.48%	2.272%	1.18%	2.65%	N/A
Age 60	1.22%	1.50%	1.37%	1.07%	1.22%	1.22%	2.000%	0.97%	2.55%	N/A
Age 55	0.76%	1.00%	0.85%	0.66%	0.76%	0.76%	1.460%	0.61%	2.50%	N/A
Defined Benefit Cap	75%	75%	75%	75%	75%	75%	N/A	N/A	N/A	N/A
Years in Final Average Compensation	3	3	3	3	3	3	3	3	1	N/A
SPSP Mandatory Employee Contribution Rate	3.00%	3.00%	3.00%	5.00%	0.00%	0.00%	N/A	1.00%	3.00%	N/A
SPSP Mandatory Employer Contribution Rate	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
SPSP Voluntary Employee Contribution Rate	0.00%	0.00%	0.00%	3.00%	5.00%	5.00%	N/A	5.00%	3.05%	N/A
SPSP Voluntary Employer Contribution Rate	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	Points	3.05%	N/A
Investment Return Rate on SPSP	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Inflation Factor	3%	3%	3%	3%	3%	3%	N/A	3%	3%	N/A
Annuity Rate of Return	6%	6%	6%	6%	6%	6%	N/A	6%	6%	N/A
Age at Hire	35	35	35	35	35	35	35	35	35	35
Income Replacement Ratio										
Age 65										
Defined Benefit	57.32%	57.32%	64.49%	50.16%	57.32%	57.32%	69.30%	45.86%	84.00%	33.43%
Defined Contribution	14.75%	14.75%	14.75%	29.50%	22.13%	27.04%	N/A	24.14%	29.75%	N/A
Total	72.07%	72.07%	79.24%	79.66%	79.45%	84.36%	N/A	70.00%	113.75%	N/A
Age 62										
Defined Benefit	38.21%	43.98%	42.98%	33.43%	38.21%	38.21%	58.60%	30.56%	71.55%	27.00%
Defined Contribution	12.18%	12.18%	12.18%	24.37%	18.28%	22.34%	N/A	19.63%	24.57%	N/A
Total	50.39%	56.16%	55.16%	57.80%	56.49%	60.55%	N/A	50.19%	96.12%	N/A
Age 60										
Defined Benefit	29.09%	35.94%	32.72%	25.45%	29.09%	29.09%	47.77%	23.27%	63.75%	N/A
Defined Contribution	10.70%	10.70%	10.70%	21.40%	16.05%	19.61%	N/A	17.01%	21.58%	N/A
Total	39.79%	46.64%	43.42%	46.85%	45.14%	48.70%	N/A	40.28%	85.33%	N/A
Age 55										
Defined Benefit	14.48%	19.20%	16.29%	12.67%	14.48%	14.48%	27.90%	11.58%	50.00%	N/A
Defined Contribution	7.60%	7.60%	7.60%	15.19%	11.39%	13.93%	N/A	11.54%	15.32%	N/A
Total	22.08%	26.80%	23.89%	27.86%	25.87%	28.41%	N/A	23.12%	65.32%	N/A
Defined Benefit Contribution Percent	6.00%	6.50%	6.50%	5.40%	6.00%	6.00%	7.62%	5.10%	9.89%	6.20%
Mandatory Defined Contribution Percent	3.00%	3.00%	3.00%	2.50%	0.00%	2.00%	N/A	3.00%	3.00%	N/A
Voluntary Defined Contribution Percent	0.00%	0.00%	0.00%	1.50%	4.00%	4.00%	N/A	1.50%	3.05%	N/A
Total Contribution Percent	9.00%	9.50%	9.50%	9.40%	10.00%	12.00%	N/A	9.60%	15.94%	N/A
Defined Benefit Annual City Savings (in millions)*	$13.8	$12.0	$12.1	$15.7	$13.8	$13.8	$7.9	$16.8	N/A	$12.7
Mandatory Defined Contribution Annual City Savings (in millions)*	$0.0	$0.0	$0.0	$1.8	$10.7	$3.6	N/A	$0.0	N/A	N/A
Voluntary Defined Contribution Annual City Savings (in millions)*	$9.8	$9.8	$9.8	$4.4	-$4.5	-$4.5	N/A	$5.5	N/A	N/A
Total Annual City Savings (in millions)*	$23.6	$21.8	$21.9	$21.9	$20.0	$12.9	N/A	$22.3	N/A	N/A
First Year City Savings*	$1.1	$1.0	$1.0	$1.0	$0.9	$0.6	$0.3	$1.2	N/A	$0.8

* Savings for CalPERS and Social Security are for defined benefit only, savings are based on the current value of a dollar

Exhibit 4

ATTACHMENT