

**San Diego City  
Employees' Retirement System**

**Experience Study**

**For the period covering  
July 1, 2007 to June 30, 2010**

**Produced by Cheiron**

**June 2011**

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## LETTER OF TRANSMITTAL

June 24, 2011

Board of Administration  
San Diego City Employees' Retirement System  
401 West A Street, Suite 400  
San Diego, CA 92101

Dear Members of the Board:

At your request, we have completed an experience study of the San Diego City Employees' Retirement System. Our study compared assumed versus actual experience with respect to mortality, membership turnover, disability, retirement, salary increase and investment returns between July 1, 2007 and June 30, 2010.

All findings and recommendations in this study, unless otherwise stated, are related to all three plan sponsors, the City, Unified Port District and Airport Authority. This report presents the results of our study as well as recommendations for changes to several of the actuarial assumptions to be employed in future valuations of SDCERS.

In preparing our report, we relied without audit, on information supplied by SDCERS' staff. This information includes, but is not limited to, plan provisions, employee data, and financial information.

I hereby certify that, to the best of my knowledge, this report and its contents, which are work products of Cheiron, Inc., are complete and accurate and have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as a credentialed actuary, I meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. I am not an attorney and our firm does not provide any legal services or advice.

Sincerely,  
Cheiron



Gene Kalwarski, FSA, EA, MAAA  
Principal Consulting Actuary



# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM EXPERIENCE STUDY

## SECTION I BOARD SUMMARY

At the request of the Board of Administration, Cheiron has performed a study of the experience of the San Diego City Employees' Retirement System. This experience study examines the System's experience during the three year period July 1, 2007 through June 30, 2010, "The Study Period." This report presents the results of our study as well as recommendations for changes to several of the actuarial assumptions to be employed in future valuations of SDCERS. In some cases we considered the results of the 2004-2007 experience study in setting our recommended assumptions since the current economic environment may have caused anomalies in the data (e.g., layoffs impacting termination and retirement rates). In addition, we also took into consideration how retirement rates may change in the future due to the changes made in the City's retiree medical program.

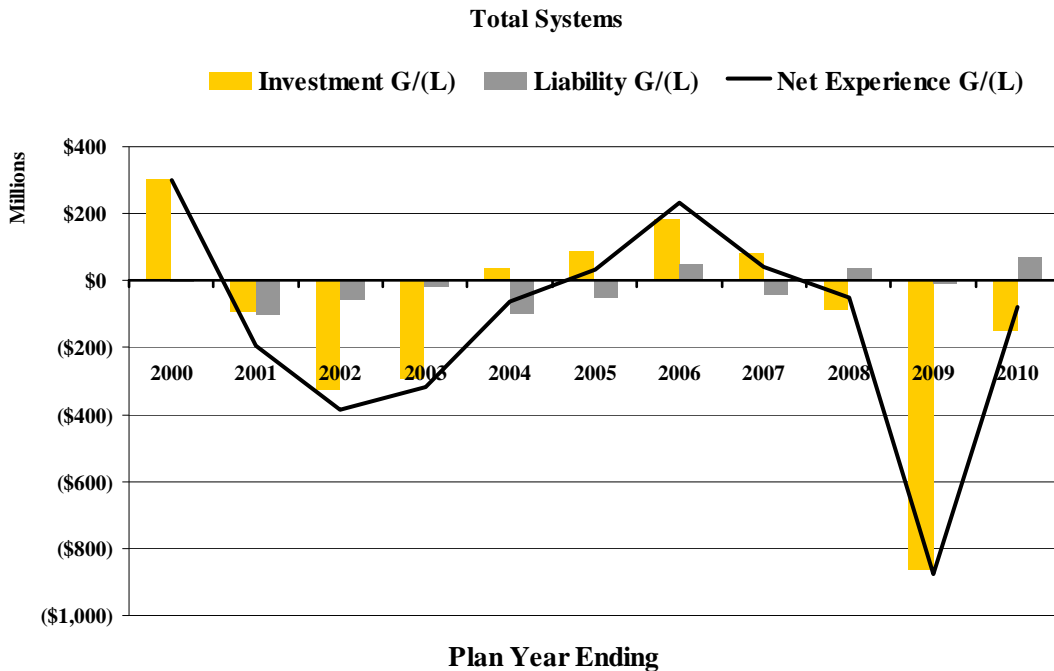
We studied the System's experience with respect to both "demographic" and "economic" assumptions. Demographic assumptions deal with expected membership behavior. These include the retirement rates, termination rates, disability rates, mortality, and miscellaneous assumptions including reciprocity, marital status, terminated vested retirement age, purchased service rates, and the Cost-of-Living (COL) Annuity. Economic assumptions deal with System-wide elements such as investment returns and wage inflation. Salary increases can be considered either demographic (membership oriented) or economic (given the inflation component). For this study we included salary experience under the demographic portion of the study.

In this study, it was requested that the individual experience for the Unified Port District (Port) and the Airport Authority (APA) be analyzed separately for demographic assumptions. To provide a broader base of experience, we also took into account experience from the last study, for a total of six years of information. Where experience deviated from the City's, separate assumptions are being recommended.

Before summarizing the key results of our experience study, we present in the chart that follows a historical review comparing for all plan sponsors combined, actual experience to anticipated experience based on the assumptions used in past actuarial valuations. The gold bars in the chart represent annual investment experience gains or losses (G/(L)), and the gray bars represent the annual liability (demographic) experience gains or losses (G/(L)).

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM EXPERIENCE STUDY

## SECTION I BOARD SUMMARY



In summary, the chart indicates that for eight of the eleven years, the demographic assumptions employed in each year's actuarial valuation produced a liability experience loss, which means that the assumptions underestimated liabilities. The average annual liability loss during this period was \$21.0 million or 0.44% of the average annual actuarial liability over that period.

On the investment side, the chart indicates that investment performance lagged the assumed rate of return in six of the eleven years. The average annual investment loss over the 11 year period was \$102.2 million, or 2.96% of the average annual market value of assets over that 11 year period. The fiscal year 2009 investment loss of \$863.2 million was by far the largest and accounted for nearly 80% of the total investment losses incurred during the period.

### Summary of principal experience study results and recommendations:

#### Demographic Assumptions:

- 1. Retirement Incidence.** We are adding an age-based component to the retirement rates, in part to account for the changes in the City's retiree health benefits. An age component is also recommended since it is a factor in determining a participant's likelihood of retirement, and is typically included in this assumption. The eligibility for retiree health benefits will be later than the earliest eligibility in the pension plan, and annual benefits are being reduced. These changes may ultimately cause some members to retire later than current experience indicates. However, actual retirements continue to exceed anticipated retirements. As a result, we recommend increasing the rates of retirement slightly at younger ages and more significantly at older ages. We also recommend separate retirement rates for UPD and APA since they have lower actual retirement rates

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM EXPERIENCE STUDY

## SECTION I BOARD SUMMARY

than the City. The recommended rates for UPD are higher than the current assumptions and lower for APA.

2. **Termination Incidence.** Actual terminations during the period were generally higher than assumed for the General groups. For the Safety groups, actual withdrawals during the period were lower than expected. However, during the last six years, there have been more than expected Safety terminations. We recommend increasing the termination rates for the General groups, but not changing the rates for Safety at this time. We also recommend separate termination rates for UPD General and APA since they have had higher actual termination rates than City General. Separate rates for UPD Safety are not recommended since there is no meaningful experience. Finally, we also recommend basing termination rates on service only, rather than age and service. The impact of increasing termination rates will reduce SDCERS' liabilities and costs.
3. **Disability Incidence.** Actual disability incidence was lower than expected for the study period, which has been the trend since the last study. We recommend decreasing the disability rates slightly. Separate rates for UPD and APA are not recommended since there is no meaningful experience. Lowering the disability rates will slightly decrease SDCERS' liabilities and costs.
4. **Mortality**
  - **Active mortality.** Active mortality for the study period was lower than expected. We recommend improving the mortality assumption slightly for all Safety and General groups. The aggregate experience of all three plan sponsors was used to determine mortality experience.
  - **Inactive mortality.** Healthy inactive mortality was consistent with the current assumptions for General. However, Safety members lived longer than expected during the study period. We recommend no change for General and an improvement in mortality for Safety. The impact using our proposed table will decrease the expected number of deaths for Safety and increase SDCERS' liabilities and costs.
  - **Disabled mortality.** Disabled members are living longer than expected at older ages, but less than expected at younger ages. We recommend using variations of the CalPERS Disabled Mortality Tables which accounts for higher mortality shortly after becoming disabled and lower mortality as the disabled member ages.
5. **Total salary increases** (Merit and Wage Inflation) were lower than expected for General members and higher than expected for Safety members. This result came about from inflation that was lower than the assumed 4.00% and merit increases that were higher than expected for both General and Safety members. Item seven below lists our inflation recommendation (3.75% inflation, or less, with an assumed two-year freeze). With respect to the merit component, we recommend no change.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM EXPERIENCE STUDY

## SECTION I BOARD SUMMARY

### Economic Assumptions:

- 6. Investment returns** both during the study period as well as for the last decade were less than assumed (7.75%). Future earnings expectations as reported by the investment consultant are 7.74% over the next 10 years and 7.91% over the next 30 years. However, there is an increasing trend by public sector plans nationwide to lower their discount rates, in order to reduce risk and respond to increasing pressures from various actuarial, economic, accounting, and governmental bodies. As a result, we recommend that the current 7.75% return be lowered by at least 0.25% to 7.50% or less. Lowering the discount rate assumption increases SDCERS' liabilities and costs.
- 7. Wage Inflation:** Based on a national study performed by the National Association of State Retirement Administrators (NASRA), the median inflation assumption used by large public sector retirement systems in FY 2009 was 3.5%, and a similar 2011 study by the National Conference on Public Employee Retirement Systems (NCPERS) also showed an average inflation assumption of 3.5%. Although other sources (such as the inflation rate implicit in the Treasury Yield Curve) show lower expectations, we recommend lowering the current assumption by 0.25%, in conjunction with the investment return, recognizing that there presently is a real risk of rising inflation. We also recommend assuming a freeze on wage inflation for the next two years, subject to discussion and feedback from the Board.

The financial impact of all recommended changes will be determined after the June 30, 2011 actuarial valuation is completed. However, based on the June 30, 2010 valuation, in Table I-1 below, we estimate the impact of our recommended changes on plan costs and liabilities.

<b>Table I - 1</b>						
(\$ in millions)						
	City of San Diego		Unified Port District		Airport Authority	
	Current Assumptions	Proposed Assumptions	Current Assumptions	Proposed Assumptions	Current Assumptions	Proposed Assumptions
Actuarial Liability	\$ 6,527.2	\$ 6,703.7	\$ 310.5	\$ 313.2	\$ 76.4	\$ 75.4
Actuarial Value of Assets	4,382.0	4,382.0	233.8	233.8	73.4	73.4
Unfunded Actuarial Liability	2,145.2	2,321.7	76.7	79.4	3.0	2.0
Funding Ratio	67.1%	65.4%	75.3%	74.7%	96.0%	97.3%
Employer Contribution Rate	42.68%	45.54%	33.16%	32.26%	14.54%	12.89%
Annual Required Contribution (beginning of year)	\$ 231.2	\$ 237.2	\$ 12.6	\$ 12.1	\$ 3.8	\$ 3.2

For the City, the increase in costs from the reduction in the discount rate is roughly offset by the reduction in inflation and the assumed two-year pay freeze. The demographic and miscellaneous assumptions would produce a slight increase in costs, with the change in mortality being the largest component.

For the Port, costs would decrease, consisting mostly of an increase due to a reduced discount rate and decreases from lower assumed inflation (with a two-year freeze), and higher termination rates.

# **SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM EXPERIENCE STUDY**

## **SECTION I BOARD SUMMARY**

Finally, for the Airport our recommended changes would reduce the ARC, with cost reductions from retirement, termination and inflation assumption changes more than offsetting the cost increase from reducing the discount rate.

On the following page we present Table I-2 summarizing all keys findings and recommendations arising from this study.

The balance of this report presents the rationale for our recommendations. In Section II, we present detailed analysis and exhibits supporting the various changes to the demographic assumptions. In Section III, we present similar information with respect to the economic assumptions. The current and proposed assumptions can be found in their entirety in Appendices A and B, respectively.



# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM EXPERIENCE STUDY

## SECTION I BOARD SUMMARY

**Table I – 2**  
**Recommended Changes to Economic and Demographic Assumptions**  
**(All General and Safety Employees)**

	<b>Current Assumption</b>	<b>Recommended Change</b>
<b><u>Demographic</u></b>		
Retirement Rates	Retirement Rates by Service	Add Age-Based Component; increase rates for City/UPD, decrease for APA
Termination Rates	Termination Rates by Age and Service	Termination Rates by Service Only, increased termination rates for General, no change for Safety
Disability Rates	Disability Rates by Age	Disability Rates by Age; decreased Disability Rates; no change to Industrial Disability assumption
Active Mortality Rates	General: RP2000 Combined Healthy table projected to 2008 Safety: RP2000 Combined Healthy Male table projected to 2008 with a 2 Year Set Forward	General: Same table, projected to 2013 Safety: Same table, projected to 2013 with no Set Forward. Use Female version for females. Reduction in duty-related death assumption for Safety
Healthy Retiree Mortality Rates	General: RP2000 M/F Combined Healthy table Safety: RP2000 M/F Combined Healthy with 2 Year Set Forward	General: No change Safety males: Same Table with no Set Forward Safety females: Same Table with 1 Year Set Forward
Disabled Mortality Rates	General: UP1994 Male table with 5 Year Set Forward Safety: UP1994 Male table with 2 Year Set Forward	Variations of the CalPERS disability tables
Salary Increase Rate	4.00% Inflation plus additional Merit Component based on Service	3.75% Inflation plus additional Merit Component based on Service
<b><u>Miscellaneous Demographic</u></b>		
Reciprocity	20%	20% for the City; 10% for the UPD and APA
Marital Status	80% Men / 50% Women; Males 4 years older than female spouse	80% Men / 55% Women; Males 3 years older than female spouse
Term Vested Retirement Age and Refund Election	Retire at earliest eligible age Not assumed to elect a refund	No Change
Purchased Service Rates	Age and Service Based	No Change
Cost-of-Living Annuity	Load factors on active liabilities for retirement allowances	Direct valuation for existing accounts; load factors for future contributions
<b><u>Economic</u></b>		
Investment Return	7.75%	7.50%, or less
Wage Inflation	4.00%	3.75%, or less; 2-year freeze

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

In this section, we present the key findings of our experience review of the demographic assumptions used by SDCERS, including our recommended changes for each assumption. The demographic assumptions included in this review were:

1. Retirement (from Service and DROP)
2. Termination from Active Employment (Other than Death, Disability, or Retirement)
3. Disability (Industrial and Non Industrial)
4. Mortality (Active, Retired Healthy, and Retired Disabled)
5. Salary Growth
6. Miscellaneous
  - Reciprocity (members who terminate and work for a subsequent eligible employer)
  - Joint and Survivor Election Percentage and Spouse Age Difference
  - Deferred vested retirement age
  - Purchased service rates
  - Cost-of-Living (COL) Annuity

For each of the first four sets of assumptions noted above, we determined an actual to expected occurrence ratio at each age (sometimes further segregated by service or sex). For example, if during the study period there were 1,000 General employees at age 50, and of that group six became disabled, we would compare that result to the number of disablements expected under our disability assumption. If the expected value was five members, the ratio of actual to expected would be 1.2 (i.e., 6/5).

If the actual to expected ratio is greater than one, our assumption may be too low; if it is less than one, the assumption may be too high.

### **1. Retirement**

#### *All General Employees*

Normal Retirement assumptions for City General employees start at the earlier of age 62 with 10 years of service or age 55 with 20 years of service. UPD and Airport Authority General employees start at the earlier of age 62 with 5 years of service or age 55 with 20 years of service.

#### *All Safety Employees*

Normal Retirement assumptions for City Safety employees start at the earlier of age 55 with 10 years of service or age 50 with 20 years of service. UPD Safety employees start at the earlier of age 55 with 5 years of service or age 50 with 20 years of service.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

The current retirement rates for all employee groups vary based on service only. Once an employee reaches age 70, we assume 100% probability of retirement. The current and proposed retirement assumptions for all employee groups are presented in detail in Appendices A and B.

Table II-1 is split by employee group by plan sponsor and compares the number of actual to expected retirements over the study period. The ratio reflects how well the assumption performed, as the closer it is to 100%, the more accurate it was in predicting participant retirement behavior.

**Table II – 1  
Retirement Experience, 7/1/2007 through 6/30/2010**

Group	Actual Rate	Actual Retirements	Current Expected	Proposed Expected	Current A/E Ratio	Proposed A/E Ratio
<b>GENERAL</b>						
City	58%	630	509	574	124%	110%
Port (UPD)	38%	36	32	36	113%	100%
Airport	20%	8	13	10	62%	81%
<b>Total General</b>	<b>56%</b>	<b>674</b>	<b>554</b>	<b>620</b>	<b>122%</b>	<b>109%</b>
<b>SAFETY</b>						
City	56%	331	218	260	152%	127%
Port (UPD)	56%	10	6	7	175%	147%
<b>Total Safety</b>	<b>56%</b>	<b>341</b>	<b>224</b>	<b>267</b>	<b>152%</b>	<b>128%</b>

The actual retirement experience for all groups, except the Airport Authority, was higher than anticipated, especially for Safety members.

We recommend adding an age-based component to the retirement rates in part to account for the changes in the City's Retiree Health Benefits. An age component is also recommended since it is a factor in determining a participant's likelihood of retirement, and is typically included in the retirement assumption. Effective July 1, 2011, the eligibility to receive retiree health benefits will be age 60 for General (currently age 55) and age 55 for Safety (currently 50) and the annual benefits are decreasing from \$8,880 to \$5,500. For the study period, 78% of the General and 96% of Safety retirements occurred before age 62 and age 55, respectively. These changes may ultimately cause some members to retire later than current experience indicates. Thus, different retirement rates are being recommended for General members prior to age 62 compared to those age 62 or more; and for Safety members prior to age 55 compared to those age 55 or more.

Overall, for both the General and Safety employees, the actual retirements during the study period were higher than expected. We recommend increasing the rates of retirement about half way to the actual experience at younger ages (prior to age 62 for General and prior to age 55 for Safety) and increasing the rates at older ages to the actual level of retirements during the study period.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

The overall actual retirement rates for the period were 58% for City General, 38% for UPD General and 20% for APA. The experience from the last study also showed different rates and retirement patterns by plan sponsor. Thus, we are recommending separate retirement assumptions for UPD General and APA. For UPD General, we are proposing no change to the current assumptions if a member is less than age 62 and an overall increase in retirement rates for members 62 or more. Airport Authority was the only plan sponsor that experienced fewer retirements than expected. We are recommending a decrease in retirement rates prior to age 62 and no change in rates after age 62.

The City and UPD Safety groups had the same overall rate of retirement. Since there is very little experience for UPD Safety, their proposed retirement rates are the same as City Safety.

In addition to the comparison of expected versus actual experience for total retirements, we also studied the number of DROP retirements compared to normal retirements. Table II-2 shows the split of DROP versus normal retirements for all General and Safety employees. For General employees and especially for Safety employees, a significantly larger number of retirements were from DROP. This trend is consistent with the previous study.

**Table II – 2  
Retirement Experience, 7/1/2007 through 6/30/2010**

Group	Normal Retirements	DROP Retirements	Total Retirements
<b>GENERAL</b>			
City	162	468	630
UPD	9	27	36
Airport	4	4	8
<b>Total General</b>	<b>175</b>	<b>499</b>	<b>674</b>
<b>SAFETY</b>			
City	40	291	331
UPD	1	9	10
<b>Total Safety</b>	<b>41</b>	<b>300</b>	<b>341</b>

The next ten graphs show the current and proposed retirement assumptions compared to the actual experience during the study period for all retirees in both General and Safety and by plan sponsor.

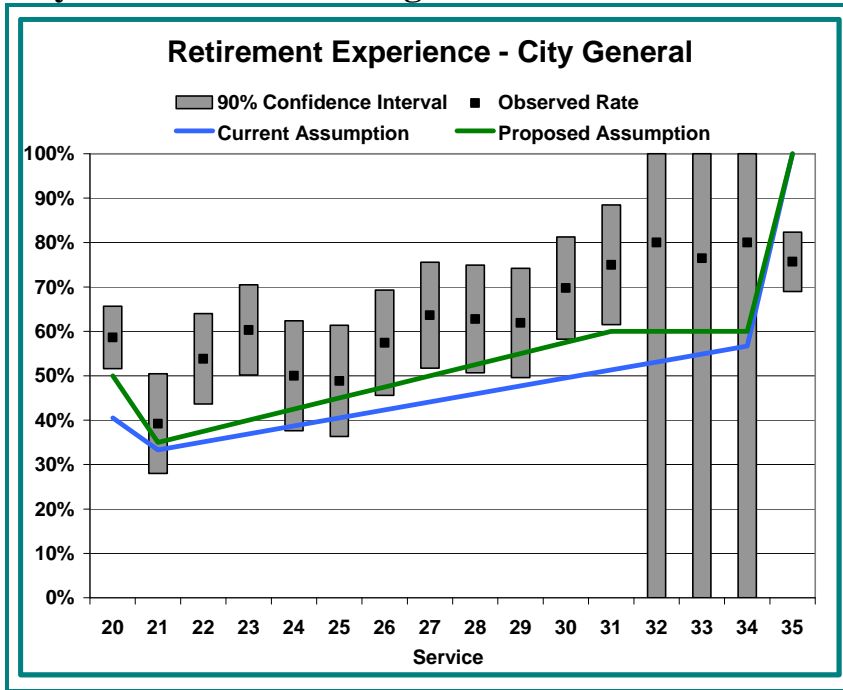
The gray bars are built around the observed rate and provide a measure of the credibility of the data. The smaller the bar, the more data that was available to set the assumption, and vice versa.

The A/E ratios shown below the graphs are the ratio of actual to expected retirements during the study period.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

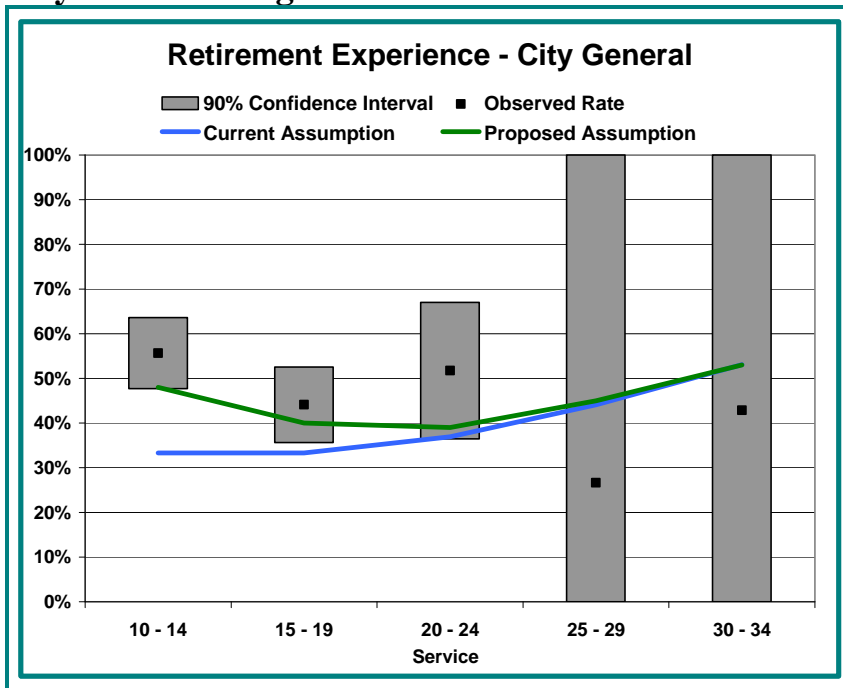
### City General - Prior to Age 62



Service	Current	Proposed
20	40.5%	50.0%
21	33.3%	35.0%
22	35.1%	37.5%
23	36.9%	40.0%
24	38.7%	42.5%
25	40.5%	45.0%
26	42.3%	47.5%
27	44.1%	50.0%
28	45.9%	52.5%
29	47.7%	55.0%
30	49.5%	57.5%
31	51.3%	60.0%
32	53.1%	60.0%
33	54.9%	60.0%
34	56.7%	60.0%
35	100.0%	100.0%

Current A/E Ratio: 1.23      Proposed A/E Ratio: 1.12

### City General – Age 62 or more



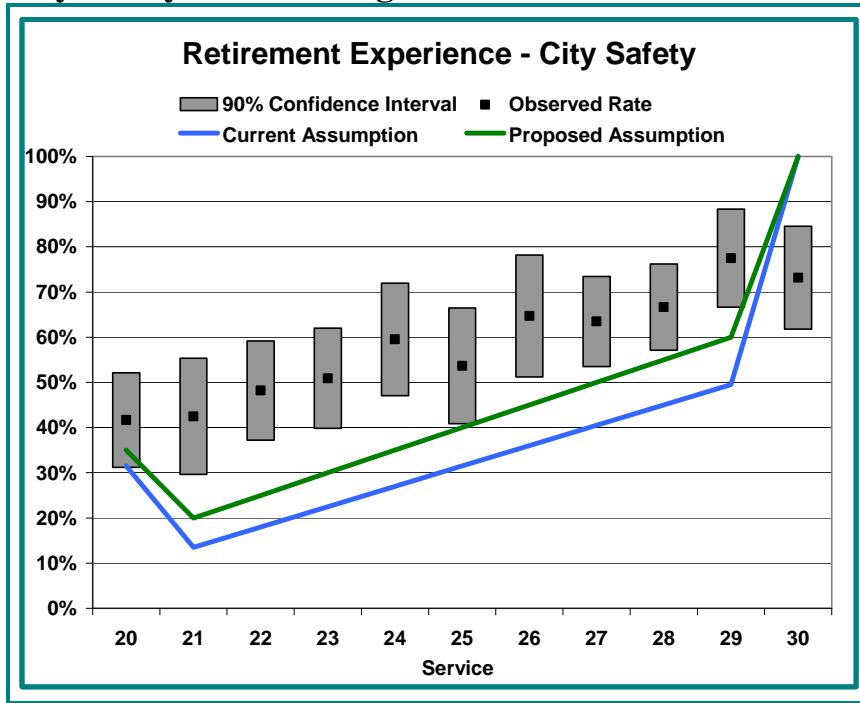
Service	Current	Proposed
10	33.3%	60.0%
11	33.3%	45.0%
12	33.3%	45.0%
13	33.3%	45.0%
14	33.3%	45.0%
15	33.3%	40.0%
16	33.3%	40.0%
17	33.3%	40.0%
18	33.3%	40.0%
19	33.3%	40.0%
20	40.5%	55.0%
21	33.3%	35.0%
22	35.1%	35.0%
23	36.9%	35.0%
24	38.7%	35.0%
25	40.5%	45.0%
26	42.3%	45.0%
27	44.1%	45.0%
28	45.9%	45.0%
29	47.7%	45.0%
30	49.5%	50.0%
31	51.3%	50.0%
32	53.1%	55.0%
33	54.9%	55.0%
34	56.7%	55.0%

Current A/E Ratio: 1.27      Proposed A/E Ratio: 1.01

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

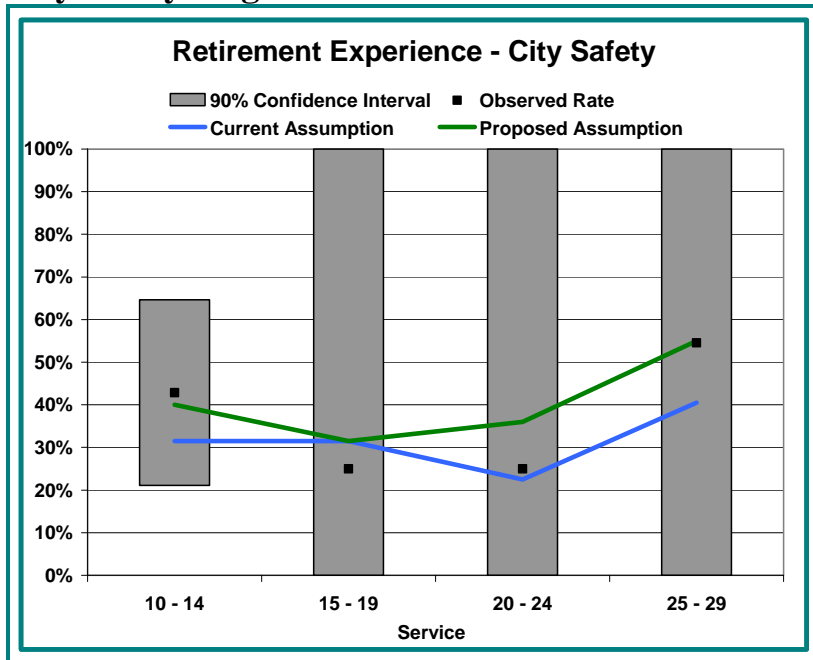
### City Safety - Prior to Age 55



Service	Current	Proposed
20	31.5%	35.0%
21	13.5%	20.0%
22	18.0%	25.0%
23	22.5%	30.0%
24	27.0%	35.0%
25	31.5%	40.0%
26	36.0%	45.0%
27	40.5%	50.0%
28	45.0%	55.0%
29	49.5%	60.0%
30	100.0%	100.0%

Current A/E Ratio: 1.56      Proposed A/E Ratio: 1.30

### City Safety - Age 55 or more



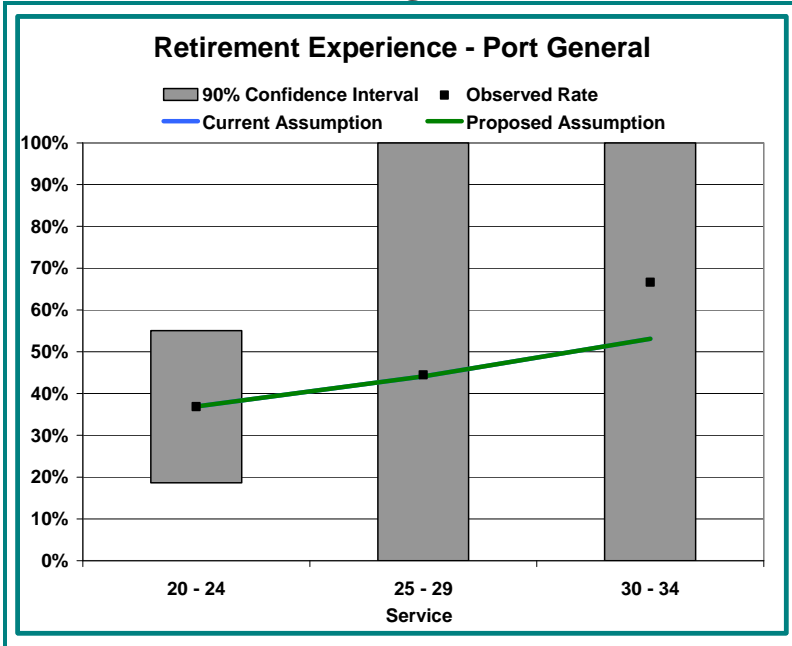
Service	Current	Proposed
10	31.5%	40.0%
11	31.5%	40.0%
12	31.5%	40.0%
13	31.5%	40.0%
14	31.5%	40.0%
15	31.5%	31.5%
16	31.5%	31.5%
17	31.5%	31.5%
18	31.5%	31.5%
19	31.5%	31.5%
20	31.5%	50.0%
21	13.5%	25.0%
22	18.0%	30.0%
23	22.5%	35.0%
24	27.0%	40.0%
25	31.5%	45.0%
26	36.0%	50.0%
27	40.5%	55.0%
28	45.0%	60.0%
29	49.5%	65.0%

Current A/E Ratio: 1.07      Proposed A/E Ratio: 0.89

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

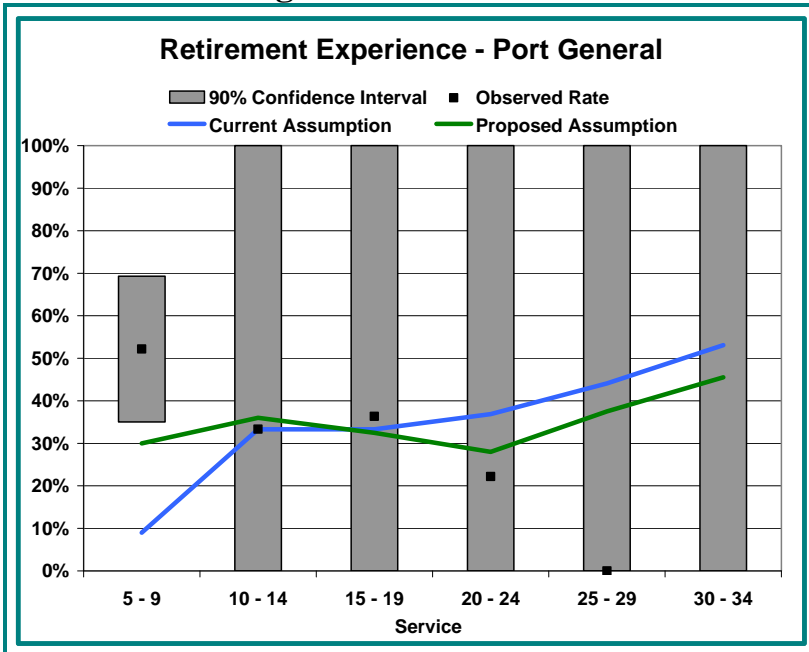
### Port General - Prior to Age 62



Service	Current	Proposed
20	40.5%	40.5%
21	33.3%	33.3%
22	35.1%	35.1%
23	36.9%	36.9%
24	38.7%	38.7%
25	40.5%	40.5%
26	42.3%	42.3%
27	44.1%	44.1%
28	45.9%	45.9%
29	47.7%	47.7%
30	49.5%	49.5%
31	51.3%	51.3%
32	53.1%	53.1%
33	54.9%	54.9%
34	56.7%	56.7%

Current A/E Ratio: 0.88      Proposed A/E Ratio: 0.88

### Port General – Age 62 or more



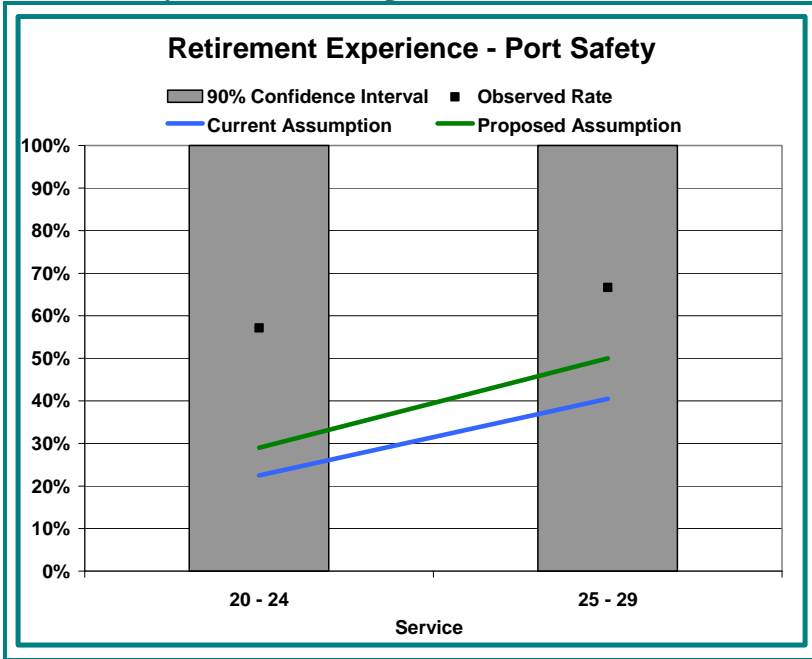
Service	Current	Proposed
5	9.0%	30.0%
6	9.0%	30.0%
7	9.0%	30.0%
8	9.0%	30.0%
9	9.0%	30.0%
10	33.3%	40.0%
11	33.3%	35.0%
12	33.3%	35.0%
13	33.3%	35.0%
14	33.3%	35.0%
15	33.3%	32.5%
16	33.3%	32.5%
17	33.3%	32.5%
18	33.3%	32.5%
19	33.3%	32.5%
20	40.5%	40.0%
21	33.3%	25.0%
22	35.1%	25.0%
23	36.9%	25.0%
24	38.7%	25.0%
25	40.5%	37.5%
26	42.3%	37.5%
27	44.1%	37.5%
28	45.9%	37.5%
29	47.7%	37.5%
30	49.5%	42.5%

Current A/E Ratio: 1.35      Proposed A/E Ratio: 1.07

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

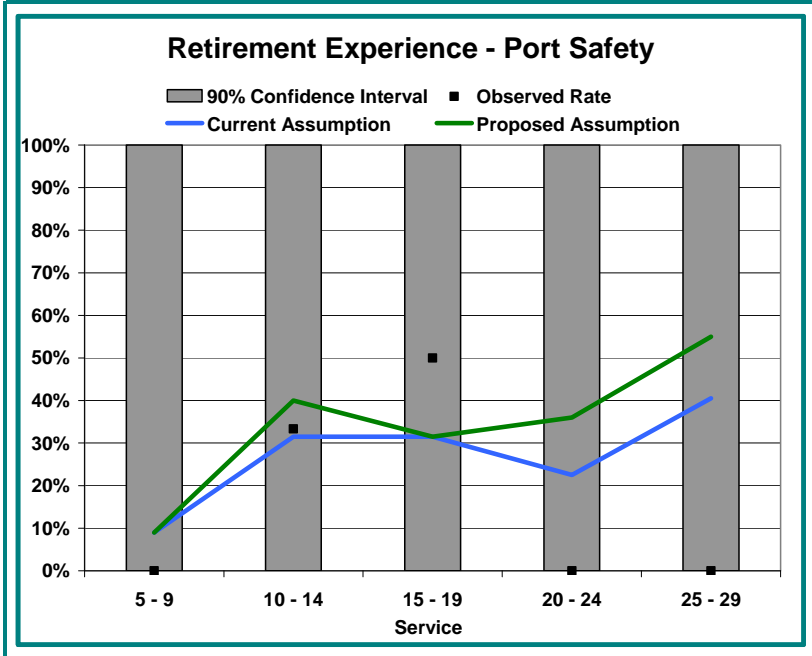
### Port Safety – Prior to Age 55



Service	Current	Proposed
20	31.5%	35.0%
21	13.5%	20.0%
22	18.0%	25.0%
23	22.5%	30.0%
24	27.0%	35.0%
25	31.5%	40.0%
26	36.0%	45.0%
27	40.5%	50.0%
28	45.0%	55.0%
29	49.5%	60.0%

Current A/E Ratio: 1.93      Proposed A/E Ratio: 1.57

### Port Safety - Age 55 or more



Service	Current	Proposed
5	9.0%	9.0%
6	9.0%	9.0%
7	9.0%	9.0%
8	9.0%	9.0%
9	9.0%	9.0%
10	31.5%	40.0%
11	31.5%	40.0%
12	31.5%	40.0%
13	31.5%	40.0%
14	31.5%	40.0%
15	31.5%	31.5%
16	31.5%	31.5%
17	31.5%	31.5%
18	31.5%	31.5%
19	31.5%	31.5%
20	31.5%	50.0%
21	13.5%	25.0%
22	18.0%	30.0%
23	22.5%	35.0%
24	27.0%	40.0%
25	31.5%	45.0%
26	36.0%	50.0%
27	40.5%	55.0%
28	45.0%	60.0%
29	49.5%	65.0%

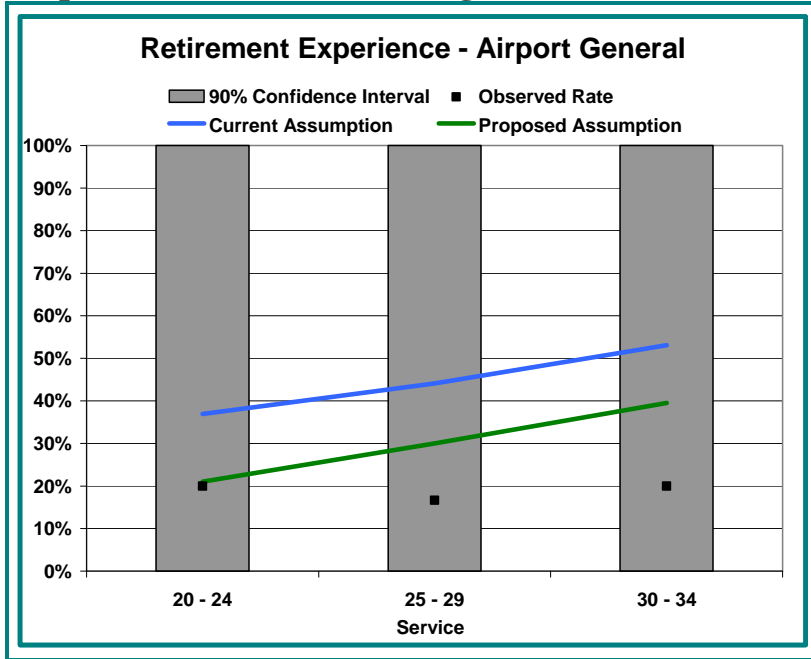
Current A/E Ratio: 1.27      Proposed A/E Ratio: 1.09



# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

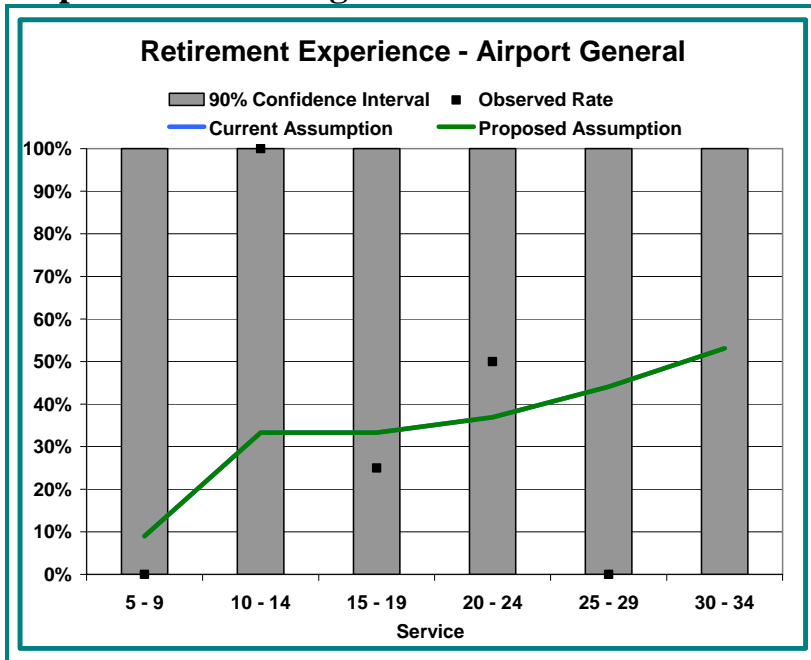
### Airport General - Prior to Age 62



Service	Current	Proposed
20	40.5%	30.0%
21	33.3%	15.0%
22	35.1%	17.5%
23	36.9%	20.0%
24	38.7%	22.5%
25	40.5%	25.0%
26	42.3%	27.5%
27	44.1%	30.0%
28	45.9%	32.5%
29	47.7%	35.0%
30	49.5%	37.5%
31	51.3%	40.0%
32	53.1%	40.0%
33	54.9%	40.0%
34	56.7%	40.0%

Current A/E Ratio: 0.45      Proposed A/E Ratio: 0.66

### Airport General – Age 62 or more



Service	Current	Proposed
5	9.0%	9.0%
6	9.0%	9.0%
7	9.0%	9.0%
8	9.0%	9.0%
9	9.0%	9.0%
10	33.3%	33.3%
11	33.3%	33.3%
12	33.3%	33.3%
13	33.3%	33.3%
14	33.3%	33.3%
15	33.3%	33.3%
16	33.3%	33.3%
17	33.3%	33.3%
18	33.3%	33.3%
19	33.3%	33.3%
20	40.5%	40.5%
21	33.3%	33.3%
22	35.1%	35.1%
23	36.9%	36.9%
24	38.7%	38.7%
25	40.5%	40.5%
26	42.3%	42.3%
27	44.1%	44.1%
28	45.9%	45.9%
29	47.7%	47.7%
30	49.5%	49.5%

Current A/E Ratio: 1.03      Proposed A/E Ratio: 1.03

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

### 2. Termination

Current termination assumptions for all General and Safety employees are age and service based for all service less than five years. With five or more years of service, the assumption is based on age only. The current and proposed termination assumptions for all employee groups are presented in detail in Appendices A and B. The results of the study of termination rates are summarized in Table II-3.

**Table II – 3  
Termination Experience, 7/1/2007 through 6/30/2010**

Group	Actual Rate	Actual Terminations	Current Expected	Proposed Expected	Current A/E Ratio	Proposed A/E Ratio
<b>GENERAL</b>						
City	4.9%	829	682	779	122%	106%
Port (UPD)	6.3%	75	59	70	127%	107%
Airport	6.4%	62	51	58	122%	107%
Total General	5.1%	966	792	907	122%	107%
<b>SAFETY</b>						
City	3.2%	214	242	242	88%	88%
Port (UPD)	2.6%	10	14	14	73%	73%
Total Safety	3.1%	224	256	256	88%	88%

There were more terminations during the period than expected for General members but less for Safety members.

We are recommending changing the termination rates to be based on service only. By changing the structure, expected terminations will be more in line with actual terminations and there is more meaningful data to use in determining assumptions. Based on the experience shown above for General members, which continues the trend from the last study, we recommend increasing the termination rates for the General groups. Safety members experienced fewer terminations than expected during the study period but experienced more than expected based on the aggregate experience over the last two studies. At this time, we recommend no change to the Safety termination rates.

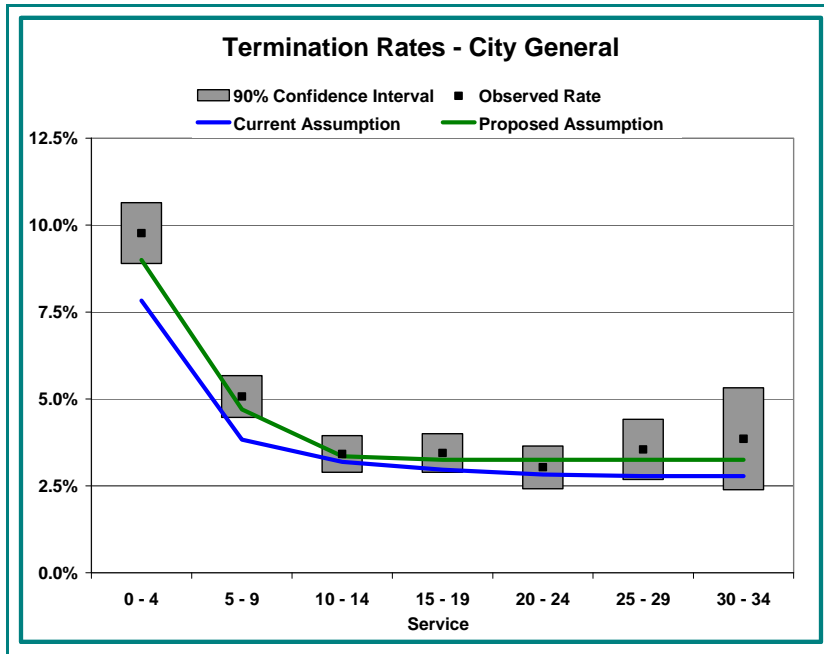
The overall actual terminations rates for the period were 4.9% for City General, 6.3% for UPD General and 6.4% for APA. The experience from the last study showed slightly higher rates, but proportionally the same by plan sponsor. Thus, we are recommending separate termination assumptions for UPD General and APA. The UPD General group experienced higher rates of termination after 15 years of service than City General in both the last two studies. Compared to City General, APA experienced a larger percentage of their terminations for members with less than 5 years of service but lower rates thereafter.

The City and UPD Safety groups had similar rates of termination. In addition, since there is very little experience for UPD Safety, we are proposing the same rates as City Safety.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

The next five graphs show the current and proposed termination assumptions compared to the actual experience during the study period for all retirees in both General and Safety and by plan sponsor.

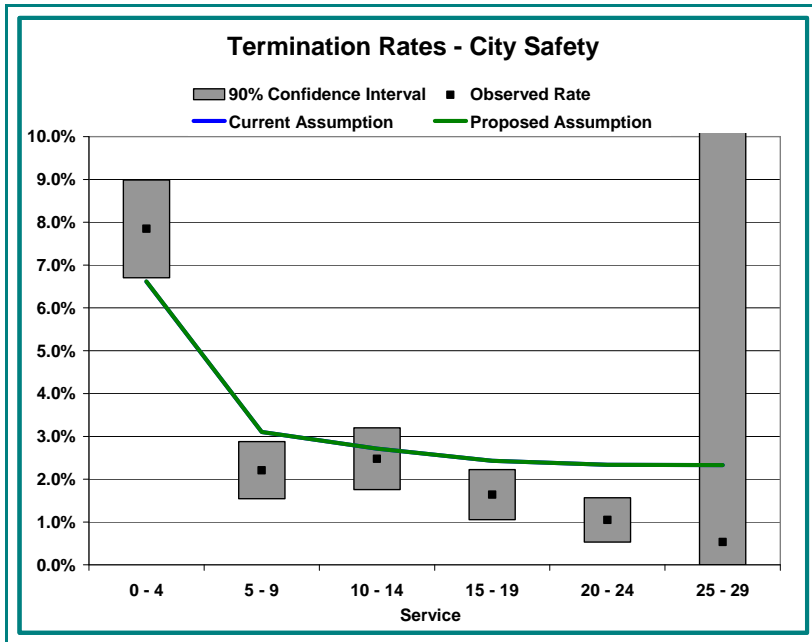


Service	Current	Proposed
0	10.40%	11.00%
1	9.10%	10.00%
2	7.82%	9.00%
3	6.54%	8.00%
4	5.31%	7.00%
5	4.15%	6.00%
6	3.99%	5.00%
7	3.83%	5.00%
8	3.65%	4.00%
9	3.54%	3.50%
10	3.38%	3.50%
11	3.25%	3.50%
12	3.15%	3.25%
13	3.10%	3.25%
14	3.08%	3.25%
15	3.06%	3.25%
16	3.02%	3.25%
17	2.96%	3.25%
18	2.91%	3.25%
19	2.88%	3.25%
20	2.86%	3.25%
21	2.85%	3.25%
22	2.82%	3.25%
23	2.81%	3.25%
24	2.79%	3.25%
25	2.79%	3.25%

Current A/E Ratio:	1.22	Proposed A/E Ratio:	1.06
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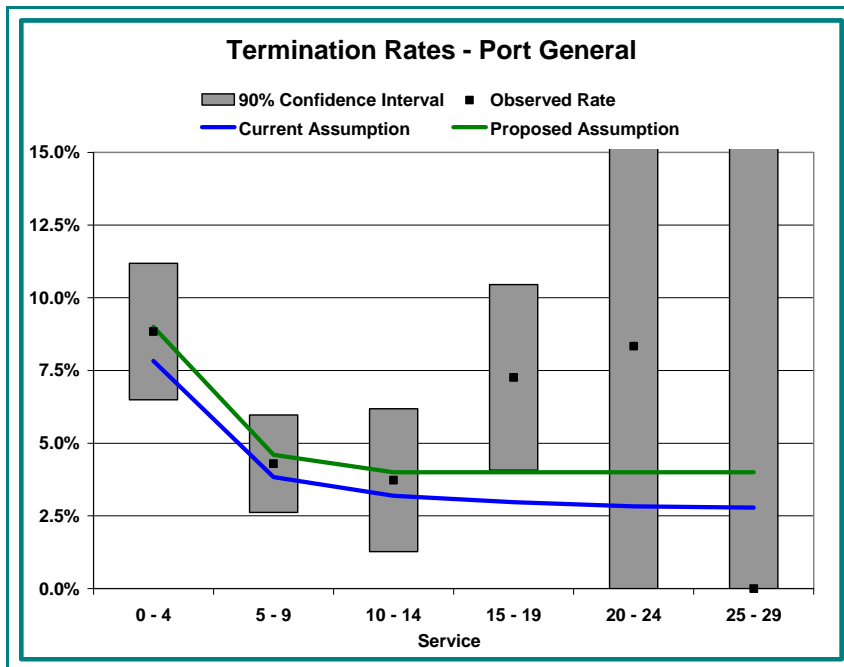
# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Service	Current	Proposed
0	8.80%	8.80%
1	7.72%	7.72%
2	6.62%	6.62%
3	5.53%	5.53%
4	4.41%	4.41%
5	3.31%	3.31%
6	3.16%	3.16%
7	3.09%	3.09%
8	3.01%	3.01%
9	2.94%	2.94%
10	2.89%	2.89%
11	2.77%	2.77%
12	2.70%	2.70%
13	2.63%	2.63%
14	2.58%	2.58%
15	2.52%	2.52%
16	2.46%	2.46%
17	2.41%	2.41%
18	2.38%	2.38%
19	2.37%	2.37%
20	2.35%	2.35%
21	2.34%	2.34%
22	2.33%	2.33%
23	2.33%	2.33%
24	2.33%	2.33%
25	2.33%	2.33%

Current A/E Ratio: 0.88      Proposed A/E Ratio: 0.88

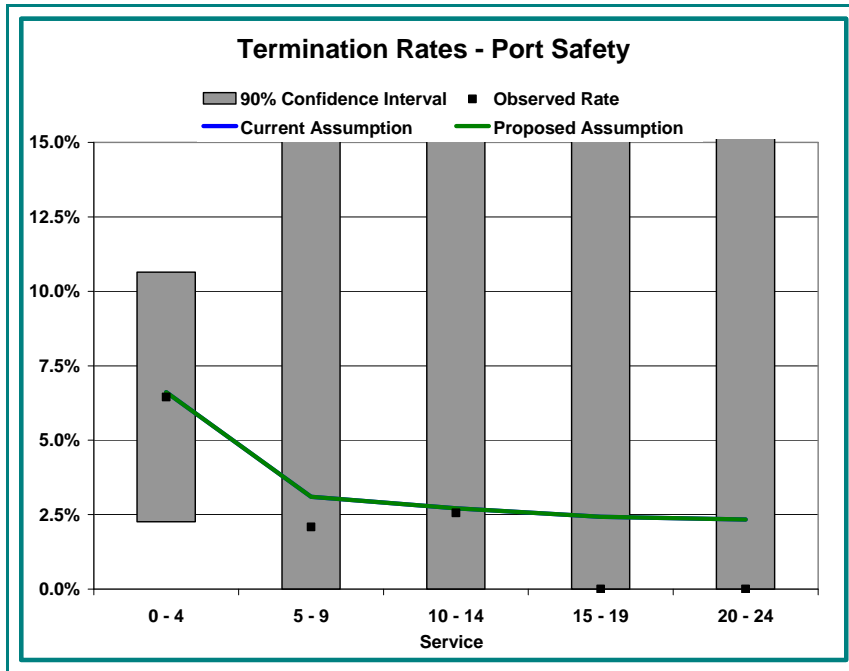


Service	Current	Proposed
0	10.40%	11.00%
1	9.10%	10.00%
2	7.82%	9.00%
3	6.54%	8.00%
4	5.31%	7.00%
5	4.15%	5.50%
6	3.99%	4.50%
7	3.83%	4.50%
8	3.65%	4.25%
9	3.54%	4.25%
10	3.38%	4.00%
11	3.25%	4.00%
12	3.15%	4.00%
13	3.10%	4.00%
14	3.08%	4.00%
15	3.06%	4.00%
16	3.02%	4.00%
17	2.96%	4.00%
18	2.91%	4.00%
19	2.88%	4.00%
20	2.86%	4.00%
21	2.85%	4.00%
22	2.82%	4.00%
23	2.81%	4.00%
24	2.79%	4.00%
25	2.79%	4.00%

Current A/E Ratio: 1.28      Proposed A/E Ratio: 1.07

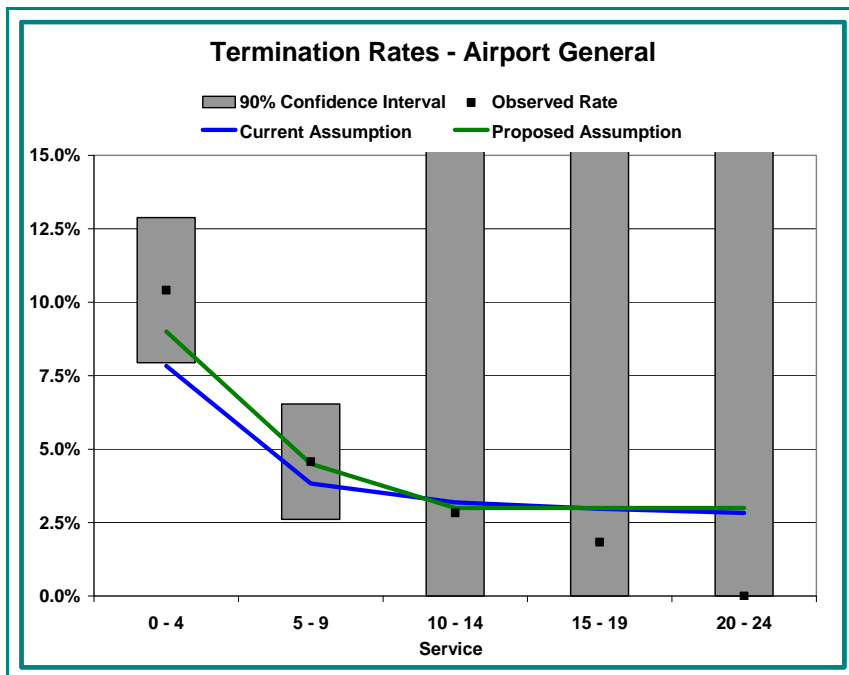
# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Service	Current	Proposed
0	8.80%	8.80%
1	7.72%	7.72%
2	6.62%	6.62%
3	5.53%	5.53%
4	4.41%	4.41%
5	3.31%	3.31%
6	3.16%	3.16%
7	3.09%	3.09%
8	3.01%	3.01%
9	2.94%	2.94%
10	2.89%	2.89%
11	2.77%	2.77%
12	2.70%	2.70%
13	2.63%	2.63%
14	2.58%	2.58%
15	2.52%	2.52%
16	2.46%	2.46%
17	2.41%	2.41%
18	2.38%	2.38%
19	2.37%	2.37%
20	2.35%	2.35%
21	2.34%	2.34%
22	2.33%	2.33%
23	2.33%	2.33%
24	2.33%	2.33%

Current A/E Ratio: 0.73      Proposed A/E Ratio: 0.73



Service	Current	Proposed
0	10.40%	11.00%
1	9.10%	10.00%
2	7.82%	9.00%
3	6.54%	8.00%
4	5.31%	7.00%
5	4.15%	5.50%
6	3.99%	4.50%
7	3.83%	4.50%
8	3.65%	4.00%
9	3.54%	4.00%
10	3.38%	3.00%
11	3.25%	3.00%
12	3.15%	3.00%
13	3.10%	3.00%
14	3.08%	3.00%
15	3.06%	3.00%
16	3.02%	3.00%
17	2.96%	3.00%
18	2.91%	3.00%
19	2.88%	3.00%
20	2.86%	3.00%
21	2.85%	3.00%
22	2.82%	3.00%
23	2.81%	3.00%
24	2.79%	3.00%

Current A/E Ratio: 1.22      Proposed A/E Ratio: 1.07

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

### 3. Disability

Current industrial disability assumptions for all General and Safety employees are based on age. The rates decline to 0 at age 65 for all General employees and at age 56 for all Safety employees. Non-industrial disability retirement is subject to a service requirement and the rates are based on age as well. 60% of the General disabilities and 80% of the Safety disabilities are assumed to be industrial disability retirements. The current and proposed disability assumptions for all employee groups are presented in detail in Appendices A and B.

Table II-4 shows the disability experience for all Safety and General members by plan sponsor. The current disability rates produce higher expected disabilities than SDCERS has experienced during the study period. This has been a common trend in the last two studies, and we recommend reducing the disability assumptions for both General and Safety employees to be more in line with actual experience.

**Table II - 4  
Disability Experience, 7/1/2007 through 6/30/2010**

Group	Actual Rate	Actual Disabilities	Current Expected	Proposed Expected	Current A/E Ratio	Proposed A/E Ratio
<b>GENERAL</b>						
City	0.04%	8	51	31	16%	26%
Port (UPD)	0.00%	0	4	2	0%	0%
Airport	0.00%	0	3	1	0%	0%
<b>Total General</b>	<b>0.04%</b>	<b>8</b>	<b>58</b>	<b>34</b>	<b>14%</b>	<b>23%</b>
<b>SAFETY</b>						
City	0.23%	17	49	33	35%	51%
Port (UPD)	0.00%	0	3	2	0%	0%
<b>Total Safety</b>	<b>0.22%</b>	<b>17</b>	<b>52</b>	<b>35</b>	<b>33%</b>	<b>49%</b>

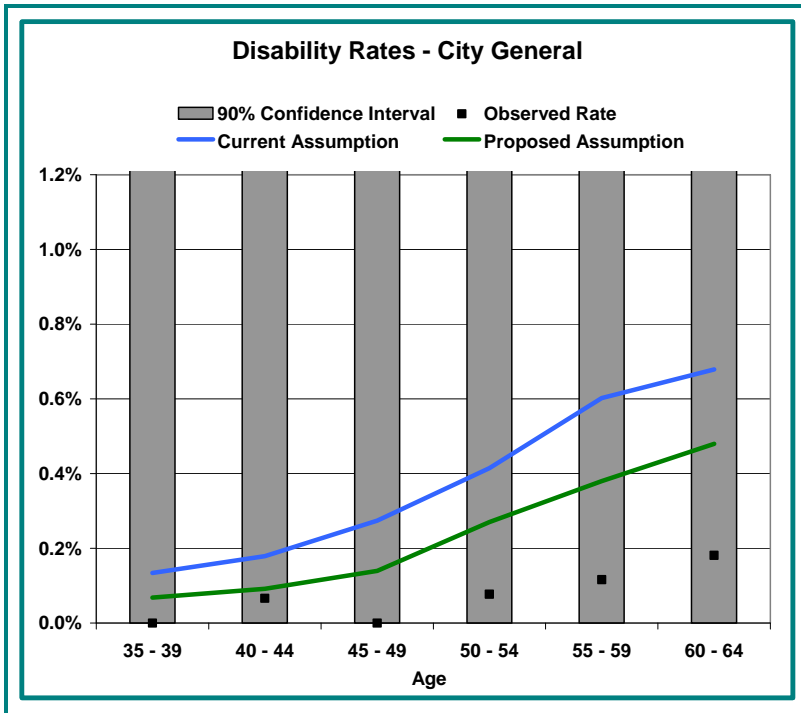
Due to the sparse experience for UPD and APA, the proposed disability assumptions are the same as City's.

The current industrial disability assumptions produce lower expected industrial disabilities than SDCERS has experienced. For General members, 75% of new disabilities over the study period were industrial, and for Safety members, this percentage was 94%. However, the data is of very limited credibility since the number of disabilities was very low. We recommend no change to the current assumptions of 60% for General members and 80% for Safety members.

The graphs below show that the proposed assumptions for both groups of employees are closer to actual experience.

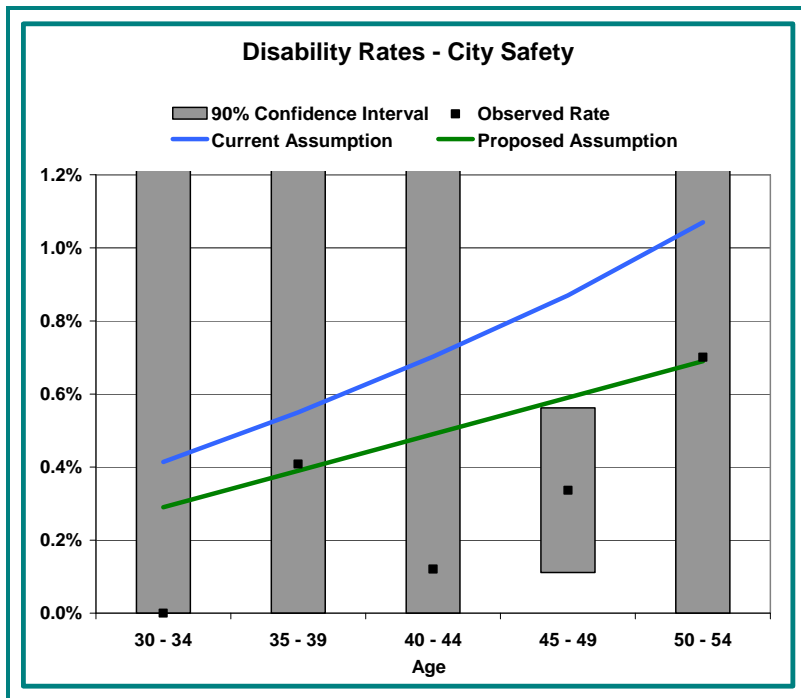
# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Age	Current	Proposed
35	0.11%	0.06%
36	0.13%	0.06%
37	0.13%	0.07%
38	0.15%	0.07%
39	0.15%	0.08%
40	0.15%	0.08%
41	0.16%	0.08%
42	0.18%	0.09%
43	0.20%	0.10%
44	0.21%	0.11%
45	0.23%	0.12%
46	0.25%	0.13%
47	0.27%	0.14%
48	0.29%	0.15%
49	0.32%	0.16%
50	0.35%	0.20%
51	0.38%	0.25%
52	0.41%	0.30%
53	0.45%	0.30%
54	0.48%	0.30%
55	0.52%	0.35%
56	0.57%	0.35%
57	0.60%	0.40%
58	0.64%	0.40%
59	0.68%	0.40%
60	0.68%	0.45%
61	0.68%	0.45%
62	0.68%	0.50%

Current A/E Ratio: 0.16      Proposed A/E Ratio: 0.26



Age	Current	Proposed
30	0.40%	0.25%
31	0.40%	0.27%
32	0.40%	0.29%
33	0.42%	0.31%
34	0.45%	0.33%
35	0.50%	0.35%
36	0.52%	0.37%
37	0.55%	0.39%
38	0.58%	0.41%
39	0.60%	0.43%
40	0.63%	0.45%
41	0.67%	0.47%
42	0.70%	0.49%
43	0.74%	0.51%
44	0.77%	0.53%
45	0.82%	0.55%
46	0.84%	0.57%
47	0.87%	0.59%
48	0.90%	0.61%
49	0.92%	0.63%
50	0.95%	0.65%
51	1.00%	0.67%
52	1.05%	0.69%
53	1.12%	0.71%
54	1.23%	0.73%

Current A/E Ratio: 0.35      Proposed A/E Ratio: 0.51

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

### 4. Mortality Experience

Table II-5 shows the mortality experience for all Safety and General members: actives, healthy inactive and disabled inactive.

**Table II - 5  
Mortality Experience, 7/1/2007 through 6/30/2010**

Group	Actual Deaths	Current Expected	Proposed Expected	Current A/E Ratio	Proposed A/E Ratio
<b>Active</b>					
General	28	34	32	81%	87%
Safety	<u>5</u>	<u>10</u>	<u>8</u>	51%	64%
Total	33	44	40	75%	83%
<b>Healthy Inactives</b>					
General	421	413	413	102%	102%
Safety	<u>118</u>	<u>157</u>	<u>133</u>	75%	88%
Total	539	570	546	95%	99%
<b>Disabled Inactives</b>					
General	47	49	48	95%	99%
Safety	<u>48</u>	<u>64</u>	<u>51</u>	75%	94%
Total	95	113	99	84%	96%

#### *All General and Safety Employees Active Lives*

Current mortality assumptions for all General and Safety employees use the RP2000 Combined Healthy table (male and female) projected to 2008. Only the male version of the table, set forward two years, is used for Safety employees. "Set forward two years" means that if a member is currently age 50 the actuary uses the age 52 mortality rate. "Projected to 2008" means that there are mortality improvements built into the table through 2008.

Deaths among active lives are typically too small a group to obtain meaningful statistics on pre-retirement deaths. However, the experience mortality shows that active members are living longer than anticipated. So, we recommend keeping the RP2000 Combined Healthy table (male and female) but projecting mortality improvements to 2013 instead of 2008, with no other adjustments. For Safety females, we recommend using the female version of this table.



# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

For Safety members, 100% of active deaths are assumed to be duty-related. For General members, all deaths are assumed to be non-duty related.

All active deaths during the study period were non-duty related, so we recommend assuming that 50% of active deaths for Safety members will duty-related in the future.

### *All General and Safety Retired Healthy Lives*

Current mortality assumptions for all healthy retired members use the RP2000 Combined Healthy table (male and female). Safety participants use the RP2000 Combined Healthy table, set forward two years (male and female). For General, actual experience was in line with the current assumptions, so we recommend no change. For Safety, there were fewer deaths than expected, so we recommend eliminating the set forward for males and only using a one-year set forward for females, which translates to Safety retirees living longer. It should also be noted that in the prior experience study there were significantly more Safety deaths than expected, so a degree of caution was applied in assigning credibility to the lower than expected experience during this study period.

### *All General and Safety Retired Disabled Lives*

Current mortality assumptions for all disabled General members use Uninsured Pensioner 1994 (UP1994) male only table set forward five years. Disabled Safety members use Uninsured Pensioner 1994 (UP1994) male only table set forward two years.

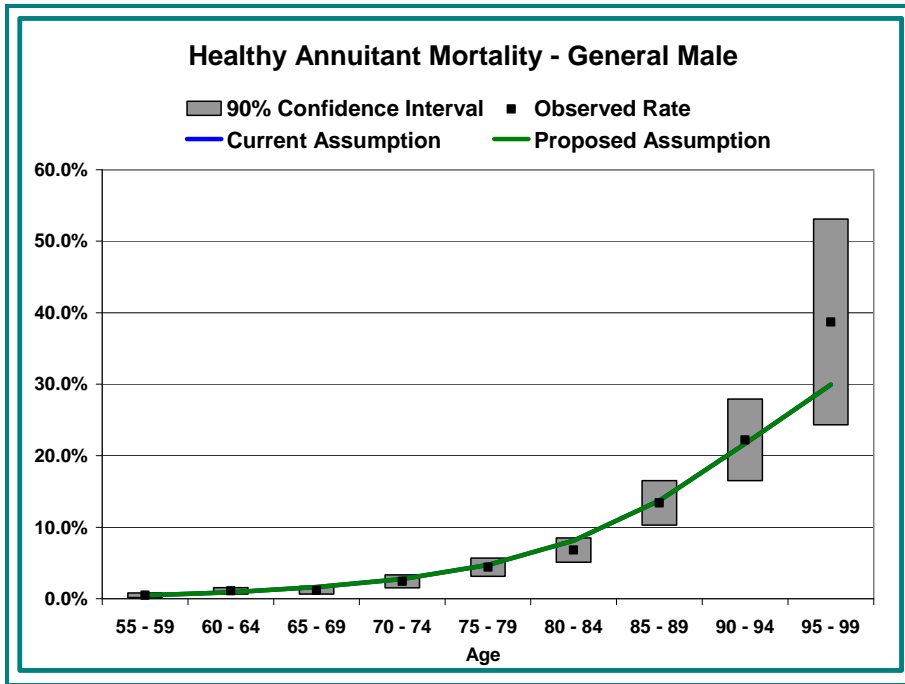
Mortality experience for the disabled General members was very close to expected and for the disabled Safety members was less than expected. However, for both groups the current mortality table predicts fewer deaths close to the time of disablement and more deaths at older ages. Typically, a disabled person has a much higher expected mortality in the first few years after becoming disabled than a healthy person. However, as they get older, a disabled person's mortality is similar to that of a healthy person. The CalPERS Disabled Mortality tables follow the described mortality experience of disabled people. Thus, we recommend using variations of the CalPERS Disabled Mortality tables, so that the assumed mortality is more consistent with experience at all ages. The following describes the specific table for the proposed disabled mortality assumption:

<b><u>Disabled Group</u></b>	<b><u>CalPERS Disabled Mortality Table</u></b>
General Males	Misc Ordinary - Male, set back 1 year
General Females	Misc Ordinary - Female
Safety Males	Safety Duty - Male
Safety Females	Safety Duty - Female

The current and proposed mortality assumptions for all employee groups are presented in detail in Appendices A and B.

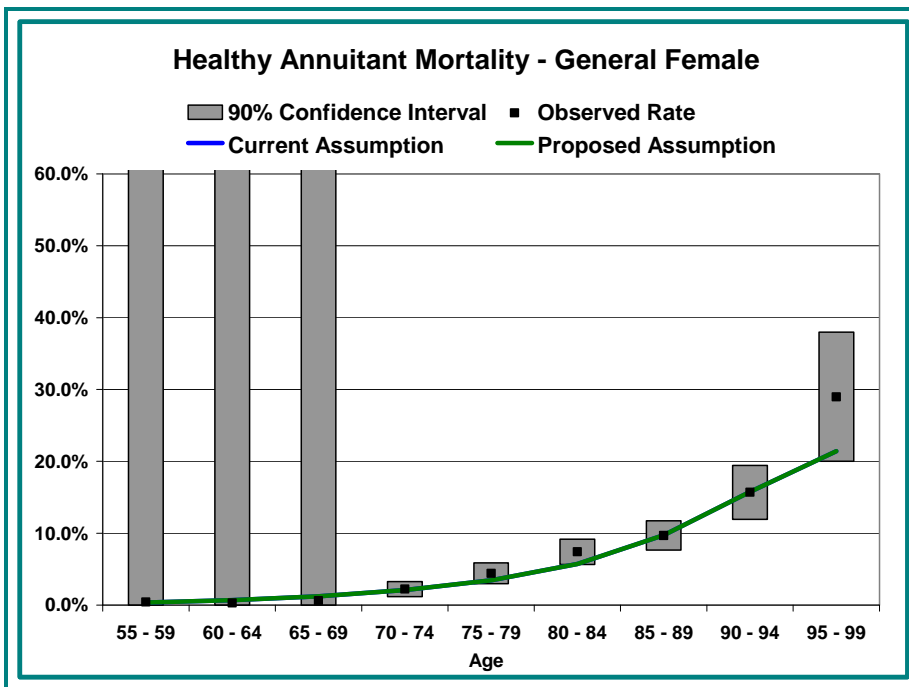
# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Age	Current	Proposed
55	0.362%	0.362%
60	0.675%	0.675%
65	1.274%	1.274%
70	2.221%	2.221%
75	3.783%	3.783%
80	6.437%	6.437%
85	11.076%	11.076%
90	18.341%	18.341%
95	26.749%	26.749%
100	34.456%	34.456%

Current A/E Ratio: 0.97      Proposed A/E Ratio: 0.97

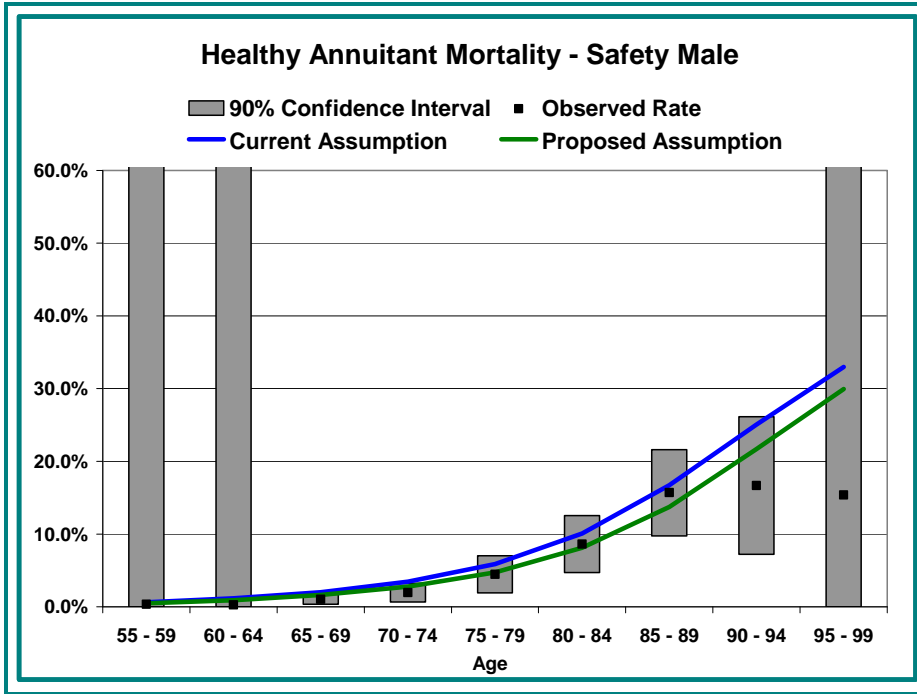


Age	Current	Proposed
55	0.272%	0.272%
60	0.506%	0.506%
65	0.971%	0.971%
70	1.674%	1.674%
75	2.811%	2.811%
80	4.588%	4.588%
85	7.745%	7.745%
90	13.168%	13.168%
95	19.451%	19.451%
100	23.747%	23.747%

Current A/E Ratio: 1.08      Proposed A/E Ratio: 1.08

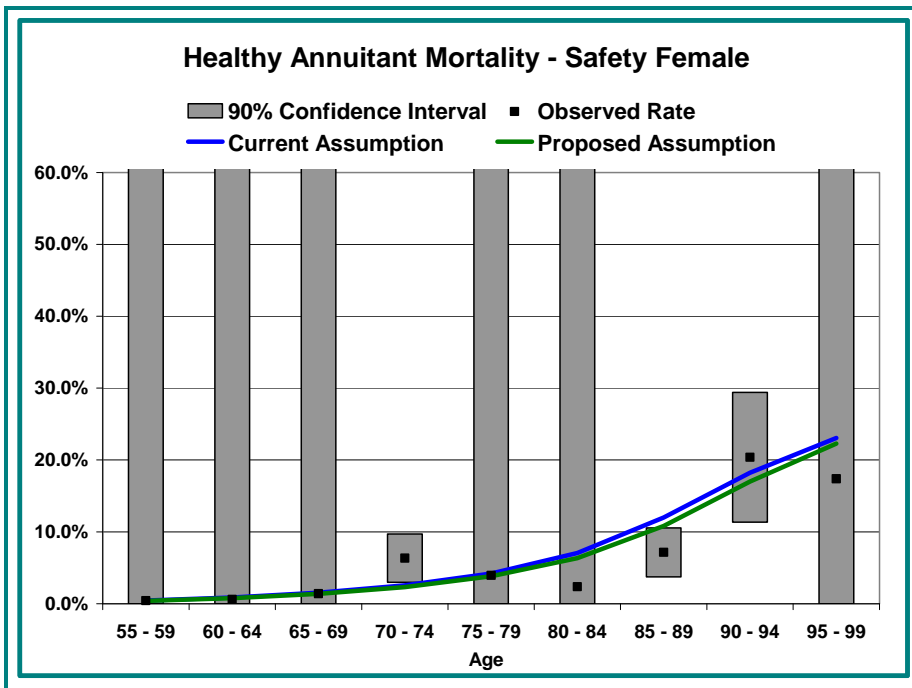
# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Age	Current	Proposed
55	0.469%	0.362%
60	0.876%	0.675%
65	1.608%	1.274%
70	2.728%	2.221%
75	4.691%	3.783%
80	8.049%	6.437%
85	13.604%	11.076%
90	21.661%	18.341%
95	29.985%	26.749%
100	37.169%	34.456%

Current A/E Ratio: 0.66      Proposed A/E Ratio: 0.82

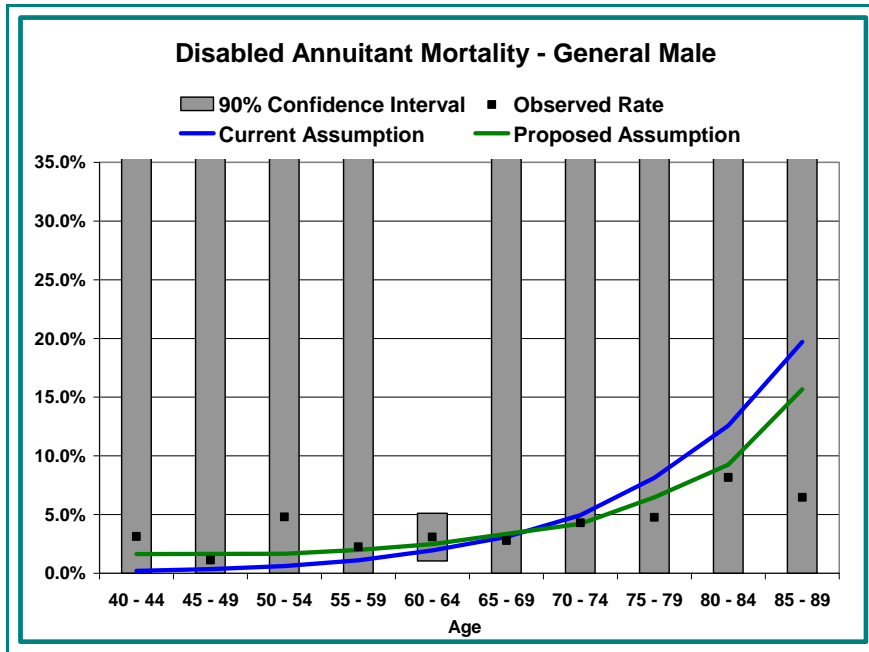


Age	Current	Proposed
55	0.348%	0.309%
60	0.666%	0.581%
65	1.216%	1.095%
70	2.067%	1.858%
75	3.411%	3.097%
80	5.629%	5.078%
85	9.634%	8.638%
90	15.762%	14.460%
95	21.524%	20.538%
100	25.450%	24.483%

Current A/E Ratio: 0.90      Proposed A/E Ratio: 0.99

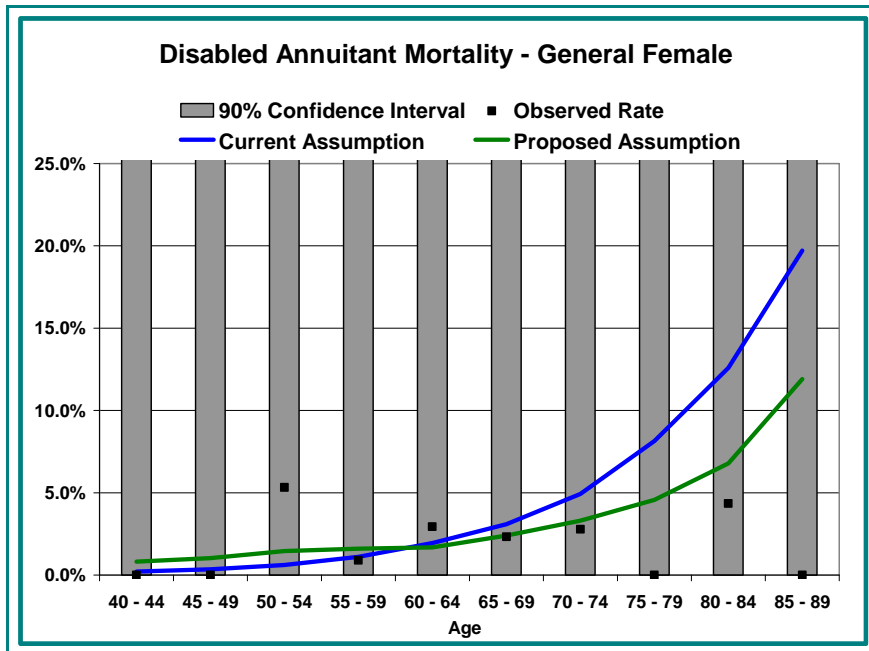
# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Age	Current	Proposed
40	0.170%	1.454%
45	0.277%	1.653%
50	0.476%	1.630%
55	0.858%	1.857%
60	1.563%	2.185%
65	2.552%	2.988%
70	4.001%	3.755%
75	6.670%	5.423%
80	10.456%	7.896%
85	16.444%	12.482%
90	25.119%	20.267%

Current A/E Ratio: 0.98      Proposed A/E Ratio: 0.99

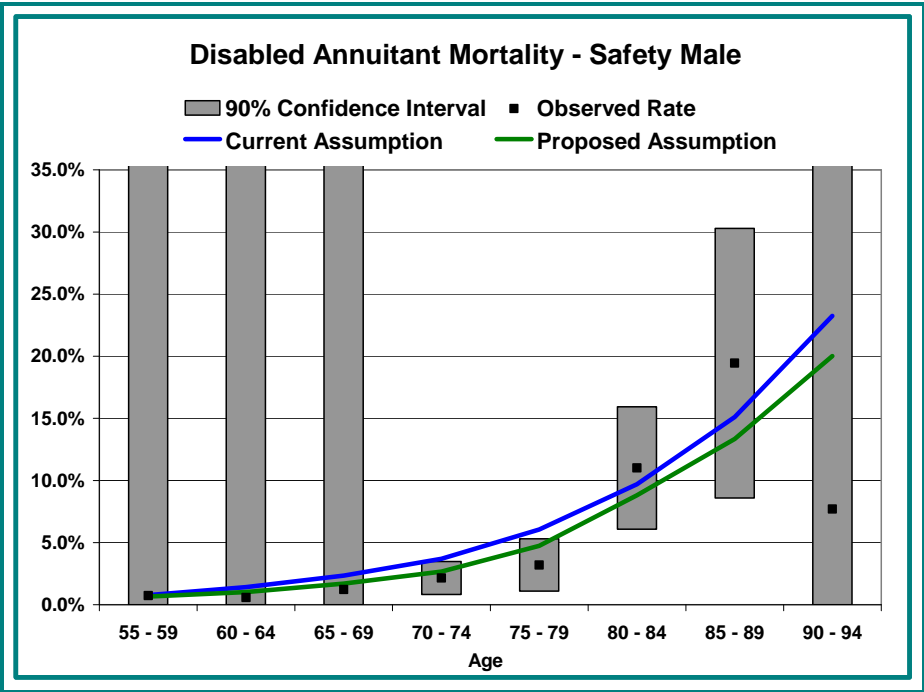


Age	Current	Proposed
40	0.170%	0.674%
45	0.277%	0.985%
50	0.476%	1.245%
55	0.858%	1.580%
60	1.563%	1.628%
65	2.552%	1.969%
70	4.001%	3.019%
75	6.670%	3.915%
80	10.456%	5.555%
85	16.444%	9.577%
90	25.119%	14.949%

Current A/E Ratio: 0.86      Proposed A/E Ratio: 0.98

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Age	Current	Proposed
55	0.600%	0.563%
60	1.091%	0.777%
65	1.939%	1.388%
70	3.063%	2.236%
75	4.857%	3.585%
80	8.122%	6.926%
85	12.438%	11.799%
90	19.600%	16.575%
95	28.905%	26.108%

Current A/E Ratio:	0.76	Proposed A/E Ratio:	0.95
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**Note: No meaningful experience for Disabled Safety Female Mortality**

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

### 5. Salary Growth (merit pay increases)

#### A. Current Assumptions

##### *All General and Safety Employees*

The current salary assumption for all General and Safety employees is the combination of an inflation assumption of 4.00%, with an additional merit component based on years of service. The additional merit component for General and Safety members is shown below in the "Expected" column in Table II-6.

#### B. Experience

##### *All General and Safety Employees*

Tables III-5 shows the merit only portion, and Table III-6 shows combined merit and inflation salary growth rate experienced by the System during the study period. To determine the merit component, we removed the average national wage inflation of 1.7% per year during the study period from total salary increases.

<b>Table II - 6</b>						
<b>Current Salary Assumption - Merit Only</b>						
<b>Years of Service Range</b>	<b><u>All General Employees</u></b>			<b><u>All Safety Employees</u></b>		
	<b>Actual</b>	<b>Expected</b>	<b>Ratio</b>	<b>Actual</b>	<b>Expected</b>	<b>Ratio</b>
0	10.55%	5.00%	2.11	22.15%	8.00%	2.77
1	5.85%	4.00%	1.46	14.15%	7.00%	2.02
2	3.25%	3.00%	1.08	16.65%	6.00%	2.78
3	4.45%	2.00%	2.23	10.85%	3.50%	3.10
4	1.95%	1.00%	1.95	6.05%	2.00%	3.03
5	2.85%	0.50%	5.70	3.75%	0.50%	7.50
6	2.45%	0.50%	4.90	5.15%	0.50%	10.30
7	1.95%	0.50%	3.90	3.15%	0.50%	6.30
8	1.75%	0.50%	3.50	3.75%	0.50%	7.50
9	0.95%	0.50%	1.90	2.55%	0.50%	5.10
10+	0.95%	0.50%	1.90	2.95%	0.50%	5.90
Total	1.85%	0.90%	2.06	4.75%	1.30%	3.65

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

<b>Years of Service Range</b>	<b><u>All General Employees</u></b>			<b><u>All Safety Employees</u></b>		
	<b>Actual</b>	<b>Expected</b>	<b>Ratio</b>	<b>Actual</b>	<b>Expected</b>	<b>Ratio</b>
0	12.30%	9.00%	1.37	23.90%	12.00%	1.99
1	7.60%	8.00%	0.95	15.90%	11.00%	1.45
2	5.00%	7.00%	0.71	18.40%	10.00%	1.84
3	6.20%	6.00%	1.03	12.60%	7.50%	1.68
4	3.70%	5.00%	0.74	7.80%	6.00%	1.30
5	4.60%	4.50%	1.02	5.50%	4.50%	1.22
6	4.20%	4.50%	0.93	6.90%	4.50%	1.53
7	3.70%	4.50%	0.82	4.90%	4.50%	1.09
8	3.50%	4.50%	0.78	5.50%	4.50%	1.22
9	2.70%	4.50%	0.60	4.30%	4.50%	0.96
10+	2.70%	4.50%	0.60	4.70%	4.50%	1.04
<b>Total</b>	<b>3.60%</b>	<b>4.90%</b>	<b>0.73</b>	<b>6.50%</b>	<b>5.30%</b>	<b>1.23</b>

### C. Recommendations

#### *All General and Safety Employees*

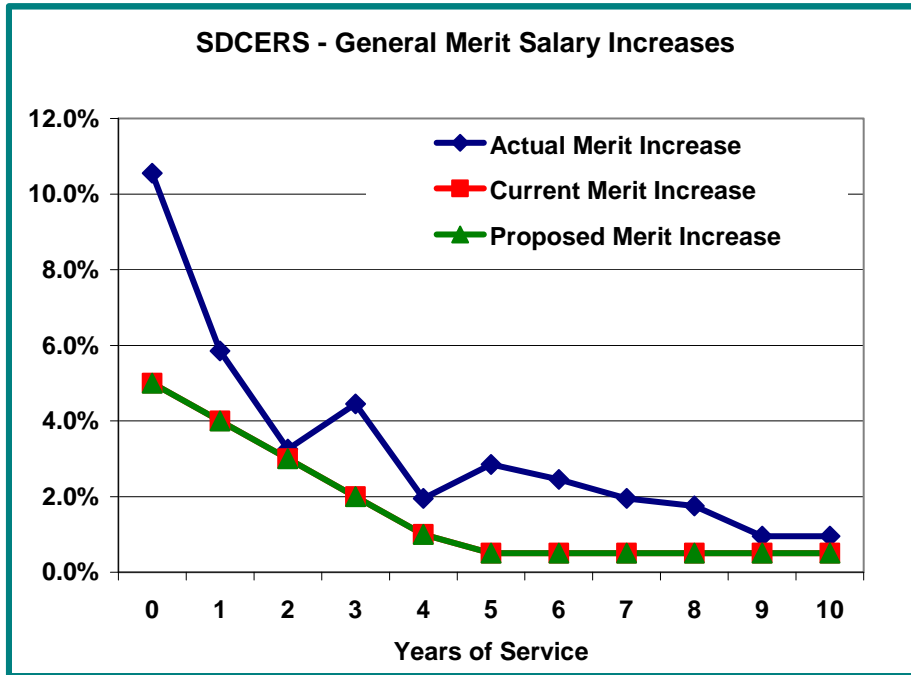
Overall, merit increases were higher than the expected merit increase assumption used in the valuation. However, total salary increases were lower than expected for General members and higher than expected for Safety members.

The merit assumption is considered in conjunction with the wage inflation assumption and future expectations for total salary increases. As shown in Table I-2 and discussed in detail in the economic section of this report, we are recommending a reduction in the wage inflation assumption from 4.00% to 3.75% (with a two-year pay freeze). Therefore, if the merit scales were increased by more than 0.25%, the assumption for total salary increases would be higher than currently assumed, which may not be realistic given the current economic environment and the City's financial position. At this time we recommend maintaining the same merit increase scales.

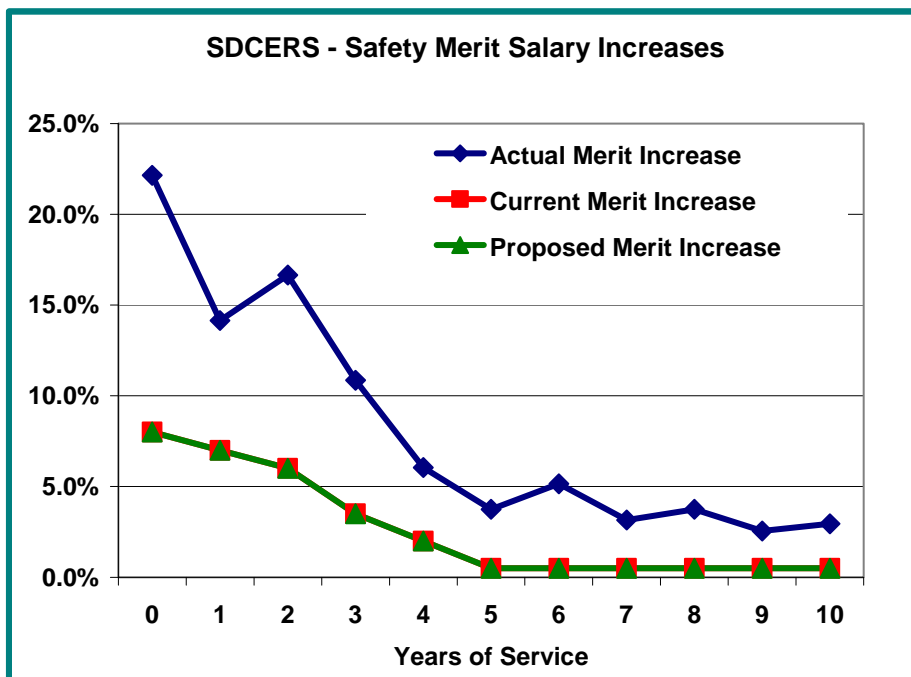
Our proposed salary merit assumption rates for all General and Safety employees are shown in the following two charts.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS



Service	Current	Proposed
0	5.00%	5.00%
1	4.00%	4.00%
2	3.00%	3.00%
3	2.00%	2.00%
4	1.00%	1.00%
5	0.50%	0.50%
6	0.50%	0.50%
7	0.50%	0.50%
8	0.50%	0.50%
9	0.50%	0.50%
10+	0.50%	0.50%



Service	Current	Proposed
0	8.00%	8.00%
1	7.00%	7.00%
2	6.00%	6.00%
3	3.50%	3.50%
4	2.00%	2.00%
5	0.50%	0.50%
6	0.50%	0.50%
7	0.50%	0.50%
8	0.50%	0.50%
9	0.50%	0.50%
10+	0.50%	0.50%



# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

### 6. Miscellaneous

- **Reciprocity**

- A. Current Assumptions

- All General and Safety Employees*

- The current reciprocity assumption is that 20% of all current and future deferred vested employees will subsequently work for a reciprocal employer. As a result, in performing our annual valuation, we increase the vested benefit for terminated employees by assuming a 20% probability of continued increases in future pay.

- B. Experience

- All General and Safety Employees*

- Reciprocity data could be studied in two ways: first, by examining inactive participants who would have been eligible for reciprocity, and second, by examining members who have retired from deferred vested status to see if their benefit increased due to reciprocity.

- Data was available for current inactive participants. We compared the number of those who went on to work for a reciprocal employer to the total number eligible for reciprocity, both for participants who became inactive during the study period and for all inactive participants, separately for the City, UPD, and APA.

- This analysis produced, for all inactive vested participants, reciprocity percentages of 28%, 19% and 3% for the City, UPD, and APA, respectively and 17%, 5% and 0% for inactive vested participants who terminated during the study period. However, the data for participants who terminated from July 1, 2009 to June 30, 2010 may not be complete since participants have up to 180 days to establish reciprocity. Absent the fiscal year ending 2010 data, these percentages are 22%, 7% and 0%.

- C. Recommendations

- We recommend maintaining the City's 20% reciprocity assumption, but recommend lowering the reciprocity assumption to 10% for both the UPD and APA.

- **Joint and Survivor Election Percentage and Spouse Age Difference**

- A. Current Assumptions

- All General and Safety Employees*

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

For all General and Safety employees, 80% of males and 50% of females are assumed to elect the joint and survivor option. In addition, female spouses are assumed to be four years younger than male spouses.

### B. Experience

#### *All General and Safety Employees*

In order to analyze the percent married assumption, we looked at the total number of retirees who elected a joint and survivor benefit compared to total retirees for all General and Safety members for the study period.

For males, the average percent of retirees electing a joint and survivor benefit was 81%. For females, the average percent was 60%.

We also looked at current retirees who elected a Joint and Survivor benefit to analyze the age difference between all General and Safety employees and their spouses. We split this analysis into male and female employees. The average age difference for male employees was 3.4 years older than their spouses, and the average age difference for female employees was 0.9 years younger than their spouses. Overall, this produced a total age difference of males being 3.0 years older than their spouses. For new retirees during the study period, these age differences were 3.1 years, 0.0 years, and 2.2 years.

### C. Recommendations

#### *All General and Safety Employees*

For the joint and survivor election percentage, we recommend that the male percentage remain at 80% and the female percentage be increased slightly to 55%. We also recommend the spouse age difference be reduced by one year, so that male spouses are assumed to be three years older than female spouses.

- **Deferred Vested Retirement Age**

#### A. Current Assumptions

##### *All Employees*

Deferred vested participants are assumed to retire at the earliest possible age, which depends on their plan and amount of service at termination.

We assume that 100% of deferred vested participants leave their contributions on account and go on to receive a retirement benefit, with no probability of electing a refund.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

### B. Experience

#### *All Employees*

We compared the age for new deferred vested retirements during the study period to the age at first eligibility, and found that the average difference was less than one year.

We also looked at participants who terminated with a vested benefit during the study period, and found that approximately 5% had elected a refund of their contributions as of the date the data for this study was collected. Although it is possible that some members may elect a refund later, it appears that the refund election percentage is immaterial.

### C. Recommendations

#### *All Employees*

We recommend no change to the assumptions for deferred vested behavior.

- **Purchased Service Rates**

#### A. Current Assumptions

#### *All Employees*

The Purchase of Service Credit program (PSC) allows eligible members to purchase additional service credit for periods of time when the member did not contribute to SDCERS. Because retirement benefits are based in part on years of service credit, a PSC may increase the benefit. All PSC contracts must be paid in full prior to retirement, termination, or entering into DROP.

#### **PSC types related to employment**

Service credit may be purchased for a variety of time periods during which an employee was not making contributions to SDCERS, including:

- Military Leave
- Long-Term Disability Leave
- Family and Medical Leave (FMLA) periods
- Special leaves of absence without pay, with the member's job to be saved
- Any period before reinstatement by the Civil Service Commission

#### **PSC of previously refunded contributions**

If a member terminated employment and received a refund of retirement contributions, that member may "redeposit" these contributions via a PSC if he/she becomes re-employed by the City of San Diego. By buying back refunded contributions including interest, a member re-establishes the service credit he/she had accumulated.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

### Five-year additional PSC

**Note: This option is only available to City members hired before July 1, 2005, UPD members hired before October 1, 2005, and APA members hired before October 3, 2006.**

Eligible members may purchase up to five years of additional service credit, often referred to as “airtime.” The cost of the additional years is developed by a calculator provided to SDCERS’ staff and is based primarily on the member’s age, past service, amount of service to be purchased, and annual salary at the time of purchase.

This method was implemented following the 2008 experience study, and was a significant change from the prior method, which applied a flat percentage to a member’s annual salary for each year purchased, regardless of a member’s age or past service. In 2010 it was refined further to provide for more accurate cost measurements.

### B. Experience

#### *All Employees*

In 2009 and 2010 the System experienced small liability losses due to purchased service (\$1.2 million and \$1.3 million, respectively). However, these are largely attributable to purchased service types other than “airtime,” some of which have specified costs in the Municipal Code that may not cover the actual liability that they create.

### C. Recommendations

#### *All Employees*

We recommend no change to the current method for calculating the cost of purchasing service credits. However, the rates should be redeveloped following any revised economic or demographic assumptions.

- **Cost-of-Living (COL) Annuity**

#### A. Current Assumptions

#### *All Employees*

One-sixth of member contributions are earmarked for the COL Annuity, which is an additional benefit at retirement equal to the conversion of those contributions to an actuarially equivalent annuity. Member contributions that are offset (paid for) by the City are not included.

For active and deferred vested members, there is a load on liabilities for retirement allowances to anticipate the impact of the annuitized employee COL Annuity contributions at retirement. The load is 2% for all Airport members, 2.5% for all Unified Port District members, and varies for the City as follows:

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION II ANALYSIS OF DEMOGRAPHIC ASSUMPTIONS

<b>General</b>	<b>Elected</b>	<b>Police</b>	<b>Fire</b>	<b>Lifeguard</b>
2.19%	2.5%	3.51%	3.69%	3.58%

### B. Experience

#### *All Employees*

With the decline in the level of City offsets and the increase in accumulated member contribution balances, the load factors are no longer producing adequate estimates of the liability attributable to this benefit. For the UPD and APA, which are less mature plans with large plan sponsor contribution offsets, experience has been more favorable.

### C. Recommendations

#### *All Employees*

We recommend moving towards a direct valuation of this benefit by adding to the liabilities one-sixth of accumulated member contribution accounts, but keeping the loads on future contributions as described above. As experience evolves, it may make sense to increase the load factors, or move fully to a direct valuation of this benefit.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION III ANALYSIS OF ECONOMIC ASSUMPTIONS

We considered the following to be "economic" assumptions in our analysis:

1. Investment Experience
2. Wage Inflation

In developing recommendations for these assumptions, several factors are considered:

- historical data in general (i.e., the markets)
- historical experience of the plan
- outlook for the future
- assumptions used by other public sector plans.

### 1. Investment Experience

#### A. Current Assumptions

*All General and Safety Employees*

SDCERS' assets are assumed to earn 7.75% net of expenses.

#### B. Experience

##### *1. Historical Experience in General*

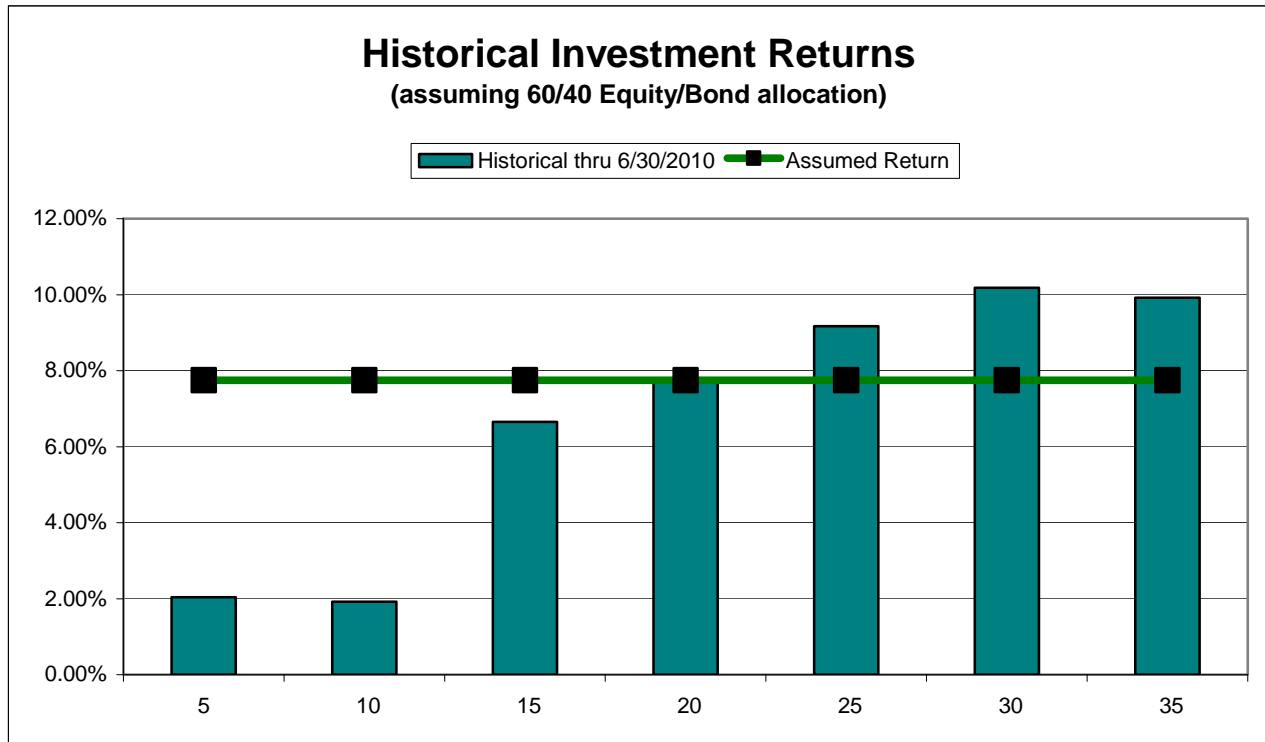
The next chart presents historical investment returns over the past 5, 10, 15, 20, 25, 30, and 35 years through June 30, 2010. The historical market returns are measured at 60% of the Standard and Poor's 500 Equity returns and 40% of the Lehman Aggregate Bond Index<sup>1</sup>.

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<sup>1</sup> Prior to 1976 (the index inception date) the bond index is based on long term corporate bonds

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION III ANALYSIS OF ECONOMIC ASSUMPTIONS



The results through June 30, 2010 show that only the periods of 25 or more years produced returns in excess of the assumed 7.75% used by SDCERS. The other periods are below the current assumption of 7.75% with the very short periods being impacted significantly by the recent market meltdown.

### *2. Historical Experience of the Plan*

Table III-1 provides the rates of investment returns experienced by the System during the last 20 fiscal years.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION III ANALYSIS OF ECONOMIC ASSUMPTIONS

Current Assumption: 7.75% per annum (net of expenses)

<b>Year Ending June 30,</b>	<b>Return</b>
1991	11.3%
1992	13.6%
1993	10.8%
1994	0.9%
1995	14.8%
1996	15.0%
1997	16.0%
1998	15.1%
1999	8.6%
2000	15.1%
2001	-0.8%
2002	-2.8%
2003	4.8%
2004	19.6%
2005	10.5%
2006	11.6%
2007	15.5%
2008	-4.7%
2009	-19.7%
2010	13.1%
Last 20 Years	7.9%
Last 10 Years	4.0%
Last 3 Years	-4.7%

The investment return on a 20 year basis has slightly surpassed the current assumption, while the returns on a 10 year or 3 year basis have not, mostly due to the historically large investment loss in FY2009.

### *3. Outlook for the Future*

SDCERS' investment consultant, Hewitt Ennis Knupp, has a return expectation of 7.74% over a 10-year period and 7.91% over 30 years.

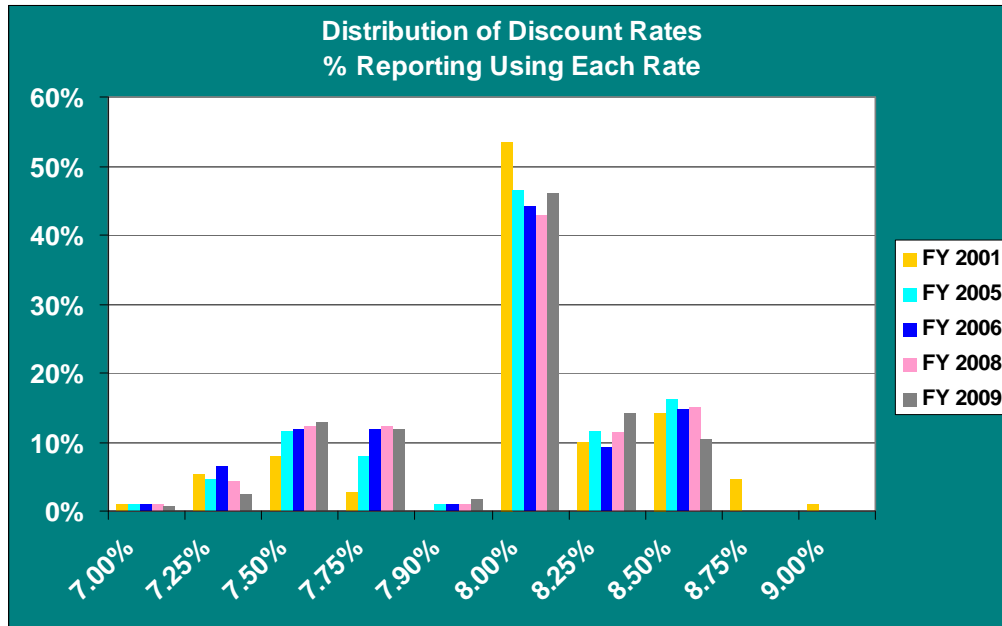
### *4. Other Public Sector Plans*

The Public Fund Survey for FY2009 performed by the National Association of State Retirement Administrators (NASRA), as shown in the graph that follows, shows that the median investment return of the (mostly statewide) plans they survey is still 8.0%. The graph also shows the general downward trend in discount rates used by many large public sector plans over the past few years.



# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION III ANALYSIS OF ECONOMIC ASSUMPTIONS



A more recent study by the National Conference on Public Employee Retirement Systems (NCPERS), which consisted of a mix of city/village plans, statewide plans, and other local plans, showed an average assumed rate of return of 7.7%.

### C. Recommendations

#### *All General and Safety Employees*

Based on long-term historical returns, both in the general markets and actual for SDCERS, as well as other plans' assumptions, SDCERS' current 7.75% assumption can be justified. Nevertheless, there is a national trend of other large public sector plans to lower their investment assumption, both to reduce risk and to reflect increasing pressures from various actuarial, economic, accounting and government bodies to do so. As a result of these factors, we recommend lowering the return assumption by at least 25 basis points, to 7.50% or less.

## **2. Wage Inflation**

### A. Current Assumptions

#### *All General and Safety Employees*

An inflation assumption of 4.00% compounded annually is used for all General and Safety employees.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION III ANALYSIS OF ECONOMIC ASSUMPTIONS

### B. Experience

#### *1. Historical Experience in General*

Based on the Consumer Price Index for all Urban Consumers (U.S. City Average (CPI-U)), Table III-2 shows the inflation rates for the past 20 years:

<b>Year Ending June 30</b>	<b>Increase in CPI-U</b>
1991	4.7%
1992	3.1%
1993	3.0%
1994	2.5%
1995	3.0%
1996	2.8%
1997	2.3%
1998	1.7%
1999	2.0%
2000	3.7%
2001	3.2%
2002	1.1%
2003	2.1%
2004	3.3%
2005	2.5%
2006	4.3%
2007	2.7%
2008	5.0%
2009	-1.4%
2010	1.1%
Compound Averages:	
1991-2010	2.6%
2001-2010	2.4%
2007-2010	1.5%

Over longer time periods, the average inflation rates have been higher than those shown in the table. For the 40, 60 and 80 year time periods ending in June 2010, the average inflation rates were 4.41%, 3.76% and 3.26%.

#### *2. Historical Experience of the Plan*

Often, the inflation experience of a pension plan could be measured by looking at annual cost-of-living increases (COLA) and annual “across the board” pay increases. For SDCERS, however, the COLA experience is of limited value because they are capped at 2%. With respect to across the board pay increases, Table III-3 shows the actual experience for SDCERS for the past four years.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION III ANALYSIS OF ECONOMIC ASSUMPTIONS

Pay Increase Effective During Year	City of San Diego				Unified Port District		Airport Authority
	General & Elected	Fire	Lifeguard	Police	General & Executive	Safety	General & Executive
2010	0.0%	0.0%	0.0%	0.0%	1.5%	2.5%	0.0%
2009	0.0%	0.0%	0.0%	0.0%	1.2%	1.5%	3.0%
2008	0.0%	4.7%	0.0%	4.5%	3.5%	4.5%	4.5%
2007	4.0%	0.0%	4.0%	7.0%	3.0%	4.9%	4.5%
Geometric Ave	1.0%	1.2%	1.0%	2.8%	2.3%	3.3%	3.0%

The geometric average of the inflationary pay increases have been below the assumed rate of inflation of 4.00% for all the plans.

### 3. Outlook for the Future

As shown earlier, historical inflation has generally been in the 2.5% – 3.5% range depending upon the starting period for the measurement. Most economic forecasters still predict that long-term, the inflation rate will remain in that range, or at least lower than the current 4.00% assumption utilized by SDCERS. One measure of expected inflation rates is the difference in yield between conventional treasury bonds and treasury index linked securities (TIPS) at the same maturity. Table III-4 shows the yields on both types of bonds and the implied inflation expectation as an average of rates over the past 12 months ending May 31, 2011.

Time to Maturity	Conventional Yield	TIPS Yield	Implied Inflation
5 years	1.8%	0.0%	1.8%
10 years	3.1%	1.0%	2.1%
20 years	4.0%	1.6%	2.4%

Data Source Federal Reserve, Constant Maturity Yields, Monthly Series

Another measure is the ultimate inflation rate (which has a 70+ year outlook) in the Social Security Trustee Report. The 2010 report shows 1.8%, 2.8% and 3.8% for the low, intermediate and high expectations, respectively.

### 4. Other Public Sector Plans

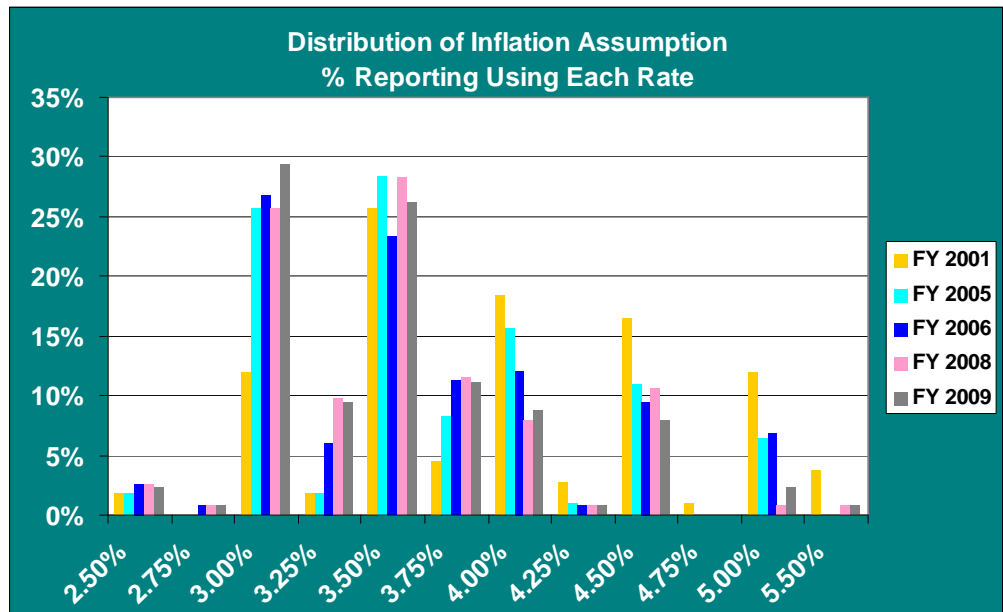
Based on a 2009 survey of mostly statewide plans conducted by the National Association of State Retirement Administrators, large public sector retirement systems are using a median inflation assumption of 3.5%, and approximately 85% of systems are using an inflation assumption between 3.00% and 4.00%. A more recent study by the National Conference on Public Employee Retirement

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## SECTION III ANALYSIS OF ECONOMIC ASSUMPTIONS

Systems (NCPERS), which consisted of a mix of city/village plans, state plans, and other local plans, also showed an average inflation assumption of 3.5%.

The table below shows the distribution of inflation rates for FY2009 and also shows the results of prior studies done for FY2008, FY2006, FY2005 and FY2001.



### C. Recommendations

Based on the above factors we recommend that SDCERS lower the assumed inflation rate by at least 25 basis points (i.e., from 4.00% to 3.75% or less). When the next experience study is performed, the inflation rate will be studied again, and it may be appropriate to further reduce the assumed rate.

For wage inflation specifically, we recommend tentatively that none be assumed for all three plan sponsors for the next two years, subject to discussion and feedback from the Board.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS

### 1. Investment Return Assumption

SDCERS' assets are assumed to earn 7.75% net of expenses.

### 2. Inflation Rate

An inflation assumption of 4.00% compounded annually is used for projecting the total annual payroll growth for amortization of the UAL.

### 3. Interest Credited to Member Contributions

7.75%, compounded annually.

### 4. Salary Increase Rate

Inflation component: 4.00% (for the July 1, 2010 "across the board" payroll increases, actual reported payroll increases were used).

The additional merit component:

<b>Years of Service at Valuation Date</b>	<b>General</b>	<b>Safety</b>
0	5.00%	8.00%
1	4.00%	7.00%
2	3.00%	6.00%
3	2.00%	3.50%
4	1.00%	2.00%
5+	0.50%	0.50%

### 5. Cost-of-Living Increase in Benefits

Assumed to be 2% per annum, compounded annually.

There is a closed group of Special Safety Officers for whom we assume an annual adjustment equal to inflation (4.00% per year).

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS

### 6. COL Annuity Benefit

For active Members, there is a load on liabilities for retirement allowances to anticipate the impact of the annuitized employee COL Annuity contributions at retirement. The load is 2.0% for all APA Members and 2.5% for all UPD Members. For the City, the load varies by Plan as follows:

<b>General</b>	<b>Elected</b>	<b>Police</b>	<b>Fire</b>	<b>Lifeguard</b>
2.19%	2.5%	3.51%	3.69%	3.58%

### 7. Member Refunds

All or part of the employee contribution rate is subject to potential offset by the employer. That offset and the related accumulated interest are not to be refunded to employees at termination. The liability for potential refunds is reduced to reflect this.

### 8. Rates of Termination

<b>Table A – 2</b>		
<b>SDCERS – All Systems</b>		
<b>Rates of Termination at Selected Ages</b>		
<b>and Service 5+ years*</b>		
<b>Age</b>	<b>General</b>	<b>Safety</b>
20	12.78%	5.00%
25	8.33	4.07
30	5.83	3.57
35	4.60	3.07
40	3.36	2.67
45	2.78	2.33
50	2.78	2.33
55	2.78	2.33
60	2.78	2.33

\*Add 1% to every age for each year of service less than five years

20% of terminating employees, with 10+ years of service at termination, are assumed to subsequently work for a reciprocal employer and receive 4.50% pay increases per year.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS

### 9. Rates of Disability

<b>Age</b>	<b>General</b>	<b>Safety</b>
20	0.04%	0.40%
25	0.06	0.40
30	0.07	0.40
35	0.11	0.50
40	0.15	0.63
45	0.23	0.82
50	0.35	0.95
55	0.53	1.80
60	0.68	--

60% of the General disabilities and 80% of the Safety disabilities are assumed to be industrial disability retirements. Non-industrial disability retirement is subject to a service requirement.

### 10. Rates of Mortality for Active Lives

General members follow the RP2000 Combined Healthy table (male and female) projected to 2008. Safety members follow the Male RP2000 projected to 2008, set forward two years. Set forward two years means that when a member is currently age 50 the actuary uses the age 52 mortality rate.

<b>Age</b>	<b>General</b>		<b>Safety</b>
	<b>Male</b>	<b>Female</b>	
20	0.03%	0.02%	0.03%
25	0.03	0.02	0.04
30	0.04	0.02	0.05
35	0.07	0.04	0.09
40	0.10	0.06	0.11
45	0.14	0.10	0.15
50	0.18	0.15	0.23
55	0.31	0.25	0.41
60	0.59	0.49	0.78
65	1.14	0.93	1.45
70	1.97	1.61	2.42

All active member deaths are assumed to be duty-related for Safety members and not duty-related for other members.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS

### 11. Rates of Mortality for Retired Healthy Lives

All retired healthy members use the RP2000 Combined Healthy table (male and female). Safety members use the RP2000 Combined Healthy table set forward two years (male and female).

Age	General		Safety	
	Male	Female	Male	Female
40	0.11%	0.07%	0.12%	0.09%
45	0.15	0.11	0.17	0.13
50	0.21	0.17	0.27	0.20
55	0.36	0.27	0.47	0.35
60	0.67	0.51	0.88	0.67
65	1.27	0.97	1.61	1.22
70	2.22	1.67	2.73	2.07
75	3.78	2.81	4.69	3.41
80	6.44	4.59	8.05	5.63
85	11.08	7.74	13.60	9.63
90	18.34	13.17	21.66	15.76

### 12. Rates of Mortality for Retired Disabled Lives

Disabled General members use Uninsured Pensioner 1994 (UP1994) male only table set forward five years. Disabled Safety members use Uninsured Pensioner 1994 (UP1994) male only table set forward two years.

Age	General	Safety
25	0.09%	0.08%
30	0.09	0.09
35	0.12	0.10
40	0.17	0.13
45	0.28	0.20
50	0.48	0.35
55	0.86	0.60
60	1.56	1.09
65	2.55	1.94
70	4.00	3.06



# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS

### 13. Rates of Retirement

Rates of Retirement for General and Safety are shown in the two tables below. Table C-7 shows the rates of retirement for all systems, General and Safety, whereas Table C-8 shows the rates of retirement for City of San Diego General 2009 Plan and Police 2009 Plan.

Service	General	Safety
5-9*	9%	9%
10-19	33	32
20	41	32
21	33	14
22	35	18
23	37	23
24	39	27
25	41	32
26	42	36
27	44	41
28	46	45
29	48	50
30	50	100
31	51	100
32	53	100
33	55	100
34	57	100
35+	100	100

\* UPD and APA only

Age	General 2009 Plan	Safety 2009 Plan
50	--	10%
51	--	10
52	--	10
53	--	10
54	--	20
55	3%	40
56	3	40
57	3	40
58	5	50
59	5	80
60	10	85
61	15	90
62	20	100
63	30	100
64	40	100
65	50	100
66	50	100
67	50	100
68	50	100
69	50	100
70	100	100

\* If a Police 2009 Member has attained both age 55 and completed at least 30 years of service, 100% retirement is assumed.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS

For vested deferred members, we assume that retirement will occur provided they have at least 10 years of service (five years for both Airport Authority and UPD employees, excluding the 5 year permissible purchased service) on the later of attained age or:

*General Members:* Earlier of age 62 or age 55 and 20+ years of service.

*Safety Members:* Earlier of age 55 or age 50 and 20+ years of service.

Rates of Retirement for Elected Officials are based on age and are shown in the table below.

<b>Age</b>	<b>Elected Officials</b>
50	--
51	--
52	--
53	15%
54	1
55	5
56	3
57	4
58	5
59	6
60	60
61	25
62	37
63	23
64	34
65	68
66	69
67	74
68	80
69	90
70	100

For vested deferred Elected Officials, we assume that retirement will occur provided they have at least four years of service on the later of attained age or the earlier of age 55 or age 53 and 8+ years of service.

If the inactive member is not vested, the liability is the member's contributions with interest.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX A CURRENT ACTUARIAL ASSUMPTIONS

### 14. Family Composite Assumptions

80% of men and 50% of women were assumed married at retirement. A female spouse is assumed to be four years younger than her male spouse.

### 15. Member Contributions for Spousal Continuance

All active members contribute towards a 50% survivor continuance. However, members who are unmarried at retirement may either be refunded that specific part of their contributions, or they may leave such contributions on account and receive an incremental benefit that is the actuarial equivalent of such contributions.

### 16. Deferred Member Benefit

The benefit was estimated based on information provided by SDCERS staff. The data used to value the estimated deferred benefit were date of birth, date of hire, date of termination, and last pay. Based on the data provided, service credit, highest average salary, and deferred retirement age were estimated. The estimates were used to compute the retirement benefit, upon which the liabilities are based. For those members without sufficient data or service, accumulated member contribution balances, with interest, were used as the actuarial accrued liability.

### 17. DROP Account Balances

For DROP participants still working, the liability for the account balances in the asset information received from SDCERS staff was adjusted to assume average commencement in 2 ½ years and an interest crediting rate of 2.9%. Thereafter, it was assumed the account balance would be converted to an annuity at an interest rate of 5% over an average period of 10 years. The 10-year period was selected to average among the available DROP payment elections, including a lump sum, life expectancy, and 20 years. Pre-2006 DROP account balances still left on account were valued assuming they would be paid out until age 70 ½, with an interest crediting rate of 2.9%. The remaining account balances were valued without adjustment.

### 18. Other

The contribution requirements and benefit values of a plan are calculated by applying actuarial assumptions to the benefit provisions and member information, using the actuarial funding methods described in the 2010 Actuarial Valuation Report.

Actual experience of SDCERS will not coincide exactly with assumed experiences, regardless of the choice of the assumptions, the skill of the actuary or the precision of the many calculations made. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments to the computed contribution rate. From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends, but not random year-to-year fluctuations.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX B PROPOSED ACTUARIAL ASSUMPTIONS

All changes from the current assumptions found in Appendix A are highlighted below.

### 1. Investment Return Assumption

SDCERS' assets are assumed to earn 7.50% net of expenses.

### 2. Inflation Rate

An inflation assumption of 3.75% compounded annually is used for projecting the total annual payroll growth for amortization of the UAL.

### 3. Interest Credited to Member Contributions

7.50%, compounded annually.

### 4. Salary Increase Rate

Inflation component 3.75%

The additional merit component:

<b>Years of Service at Valuation Date</b>	<b>General</b>	<b>Safety</b>
0	5.00%	8.00%
1	4.00%	7.00%
2	3.00%	6.00%
3	2.00%	3.50%
4	1.00%	2.00%
5+	0.50%	0.50%

### 5. Cost-of-Living Increase in Benefits

Assumed to be 2% per annum, compounded annually.

There is a closed group of Special Safety Officers for whom we assume an annual adjustment equal to inflation (3.75% per year).

### 6. COL Annuity Benefit

For active Members, the COL annuity benefit is valued by adding to the liabilities one-sixth of accumulated member contribution accounts and using load factors for future member contributions equal to 2.0% for APA, 2.5% for UPD, and for the City as follows:

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX B

### PROPOSED ACTUARIAL ASSUMPTIONS

<b>General</b>	<b>Elected</b>	<b>Police</b>	<b>Fire</b>	<b>Lifeguard</b>
2.19%	2.5%	3.51%	3.69%	3.58%

For terminated vested participants, one-sixth of the accumulated member contribution accounts are recognized as a liability for the COL annuity.

### 7. Member Refunds

All or part of the employee contribution rate is subject to potential offset by the employer. That offset and the related accumulated interest are not to be refunded to employees at termination. The liability for potential refunds is reduced to reflect this.

### 8. Rates of Termination

<b>Service</b>	<b>City General</b>	<b>City Safety</b>	<b>UPD General</b>	<b>UPD Safety</b>	<b>Airport Authority</b>
0	11.00%	8.80%	11.00%	8.80%	11.00%
1	10.00%	7.72%	10.00%	7.72%	10.00%
2	9.00%	6.62%	9.00%	6.62%	9.00%
3	8.00%	5.53%	8.00%	5.53%	8.00%
4	7.00%	4.41%	7.00%	4.41%	7.00%
5	6.00%	3.31%	5.50%	3.31%	5.50%
6	5.00%	3.16%	4.50%	3.16%	4.50%
7	5.00%	3.09%	4.50%	3.09%	4.50%
8	4.00%	3.01%	4.25%	3.01%	4.00%
9	3.50%	2.94%	4.25%	2.94%	4.00%
10	3.50%	2.89%	4.00%	2.89%	3.00%
11	3.50%	2.77%	4.00%	2.77%	3.00%
12	3.25%	2.70%	4.00%	2.70%	3.00%
13	3.25%	2.63%	4.00%	2.63%	3.00%
14	3.25%	2.58%	4.00%	2.58%	3.00%
15	3.25%	2.52%	4.00%	2.52%	3.00%
16	3.25%	2.46%	4.00%	2.46%	3.00%
17	3.25%	2.41%	4.00%	2.41%	3.00%
18	3.25%	2.38%	4.00%	2.38%	3.00%
19	3.25%	2.37%	4.00%	2.37%	3.00%
20	3.25%	2.35%	4.00%	2.35%	3.00%
21	3.25%	2.34%	4.00%	2.34%	3.00%
22+	3.25%	2.33%	4.00%	2.33%	3.00%

20% (10% for the UPD and APA) of terminating employees, with 10+ years of service (5+ years of service for UPD and APA) at termination, are assumed to subsequently work for a reciprocal employer and receive 4.25% pay increases per year.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX B PROPOSED ACTUARIAL ASSUMPTIONS

### Rates of Disability

Age	General	Safety
20	0.02%	0.25%
25	0.03	0.25
30	0.04	0.25
35	0.06	0.35
40	0.08	0.45
45	0.12	0.55
50	0.20	0.65
55	0.35	--
60	0.45	--

60% of the General disabilities and 80% of the Safety disabilities are assumed to be industrial disability retirements. Non-industrial disability retirement is subject to a service requirement.

### 9. Rates of Mortality for Active Lives

All active members follow the RP2000 Combined Healthy table (male and female) projected to 2013.

Age	General and Safety	
	Male	Female
20	0.03%	0.02%
25	0.03	0.02
30	0.04	0.02
35	0.07	0.04
40	0.10	0.06
45	0.13	0.09
50	0.17	0.13
55	0.28	0.25
60	0.55	0.47
65	1.06	0.91
70	1.83	1.57

50% of active member deaths are assumed to be industrial deaths for Safety members and all active member deaths are assumed to be non-industrial deaths for other members.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX B

### PROPOSED ACTUARIAL ASSUMPTIONS

#### 10. Rates of Mortality for Retired Healthy Lives

All retired healthy members use the RP2000 Combined Healthy table (male and female). Safety female members use the RP2000 Combined Healthy female table, set forward one year.

Age	General		Safety	
	Male	Female	Male	Female
40	0.11%	0.07%	0.11%	0.08%
45	0.15	0.11	0.15	0.12
50	0.21	0.17	0.21	0.19
55	0.36	0.27	0.36	0.31
60	0.67	0.51	0.67	0.58
65	1.27	0.97	1.27	1.10
70	2.22	1.67	2.22	1.86
75	3.78	2.81	3.78	3.10
80	6.44	4.59	6.44	5.08
85	11.08	7.74	11.08	8.64
90	18.34	13.17	18.34	14.46

#### 12. Rates of Mortality for Retired Disabled Lives

Variations of the CALPERS Disability Tables (male and female)

Age	General		Safety	
	Male	Female	Male	Female
40	1.45%	0.67%	0.19%	0.20%
45	1.65	0.99	0.25	0.26
50	1.63	1.25	0.44	0.36
55	1.86	1.58	0.56	0.55
60	2.19	1.63	0.78	0.80
65	2.99	1.97	1.39	1.18
70	3.76	3.02	2.24	1.72
75	5.42	3.92	3.59	2.67
80	7.90	5.56	6.93	4.53
85	12.48	9.58	11.80	8.02

**SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM**

**APPENDIX B  
PROPOSED ACTUARIAL ASSUMPTIONS**

**13. Rates of Retirement**

Service	General		Safety	
	Prior to age 62	Age 62 or greater	Prior to age 55	Age 55 or greater
10	--	60.0%	--	40.0%
11	--	45.0	--	40.0
12	--	45.0	--	40.0
13	--	45.0	--	40.0
14	--	45.0	--	40.0
15	--	40.0	--	31.5
16	--	40.0	--	31.5
17	--	40.0	--	31.5
18	--	40.0	--	31.5
19	--	40.0	--	31.5
20	50.0	55.0	35.0	50.0
21	35.0	35.0	20.0	25.0
22	37.5	35.0	25.0	30.0
23	40.0	35.0	30.0	35.0
24	42.5	35.0	35.0	40.0
25	45.0	45.0	40.0	45.0
26	47.5	45.0	45.0	50.0
27	50.0	45.0	50.0	55.0
28	52.5	45.0	55.0	60.0
29	55.0	45.0	60.0	65.0
30	57.5	50.0	100.0	100.0
31	60.0	50.0	100.0	100.0
32	60.0	55.0	100.0	100.0
33	60.0	55.0	100.0	100.0
34	60.0	55.0	100.0	100.0
35+	100.0	100.0	100.0	100.0



**SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM**

**APPENDIX B**  
**PROPOSED ACTUARIAL ASSUMPTIONS**

<b>Service</b>	<b>General 2009 Plan</b>	<b>Safety 2009 Plan</b>
50	--	10%
51	--	10
52	--	10
53	--	10
54	--	20
55	3%	40
56	3	40
57	3	40
58	5	50
59	5	80
60	10	85
61	15	90
62	20	100
63	30	100
64	40	100
65	50	100
66	50	100
67	50	100
68	50	100
69	50	100
70	100	100

In addition, if a Police 2009 Member has attained both age 55 and completed at least 30 years of service, 100% retirement is assumed.

**SAN DIEGO CITY EMPLOYEES’ RETIREMENT SYSTEM**

**APPENDIX B**  
**PROPOSED ACTUARIAL ASSUMPTIONS**

<b>Age</b>	<b>Elected Officials</b>
50	--
51	--
52	--
53	15%
54	1
55	5
56	3
57	4
58	5
59	6
60	60
61	25
62	37
63	23
64	34
65	68
66	69
67	74
68	80
69	90
70	100

For vested deferred Elected Officials, we assume that retirement will occur provided they have at least four years of service on the later of attained age or the earlier of age 55 or age 53 and 8+ years of service.

If the inactive member is not vested, the liability is the member’s contributions with interest.

SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

APPENDIX B  
**PROPOSED ACTUARIAL ASSUMPTIONS**

**Table B – 10**  
**SDCERS – Unified Port District**  
**Rates of Retirement by Age and Service**

Service	General		Safety	
	Prior to age 62	Age 62 or greater	Prior to age 55	Age 55 or greater
5-9*	--	30.0%	--	9.0%
10	--	40.0	--	40.0
11	--	35.0	--	40.0
12	--	35.0	--	40.0
13	--	35.0	--	40.0
14	--	35.0	--	40.0
15	--	32.5	--	31.5
16	--	32.5	--	31.5
17	--	32.5	--	31.5
18	--	32.5	--	31.5
19	--	32.5	--	31.5
20	40.5	40.0	35.0	50.0
21	33.3	25.0	20.0	25.0
22	35.1	25.0	25.0	30.0
23	36.9	25.0	30.0	35.0
24	38.7	25.0	35.0	40.0
25	40.5	37.5	40.0	45.0
26	42.3	37.5	45.0	50.0
27	44.1	37.5	50.0	55.0
28	45.9	37.5	55.0	60.0
29	47.7	37.5	60.0	65.0
30	49.5	42.5	100.0	100.0
31	51.3	42.5	100.0	100.0
32	53.1	47.5	100.0	100.0
33	54.9	47.5	100.0	100.0
34	56.7	47.5	100.0	100.0
35+	100.0	100.0	100.0	100.0

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX B PROPOSED ACTUARIAL ASSUMPTIONS

Service	General	
	Prior to age 62	Age 62 or greater
5-9*	---	9.0%
10	---	33.3
11	---	33.3
12	---	33.3
13	---	33.3
14	---	33.3
15	---	33.3
16	---	33.3
17	---	33.3
18	---	33.3
19	---	33.3
20	30.0	40.5
21	15.0	33.3
22	17.5	35.1
23	20.0	36.9
24	22.5	38.7
25	25.0	40.5
26	27.5	42.3
27	30.0	44.1
28	32.5	45.9
29	35.0	47.7
30	37.5	49.5
31	40.0	51.3
32	40.0	53.1
33	40.0	54.9
34	40.0	56.7
35+	100.0	100.0

For vested deferred members, we assume that retirement will occur provided they have at least 10 years of service (5 years for both Airport Authority and UPD employees, excluding the five year permissible purchased service) on the later of attained age or:

*General Members:* Earlier of age 62 or age 55 and 20+ years of service.

*Safety Members:* Earlier of age 55 or age 50 and 20+ years of service.

# SAN DIEGO CITY EMPLOYEES' RETIREMENT SYSTEM

## APPENDIX B

### PROPOSED ACTUARIAL ASSUMPTIONS

#### 14. Family Composite Assumptions

80% of men and 55% of women were assumed married at retirement. A female spouse is assumed to be three years younger than her male spouse.

#### 15. Member Contributions for Spousal Continuance

All active members contribute towards a 50% survivor continuance. However, members who are unmarried at retirement may either be refunded that specific part of their contributions, or they may leave such contributions on account and receive an incremental benefit that is the actuarial equivalent of such contributions.

#### 16. Deferred Member Benefit

The benefit was estimated based on information provided by SDCERS staff. The data used to value the estimated deferred benefit were date of birth, date of hire, date of termination, and last pay. Based on the data provided, service credit, highest average salary, and deferred retirement age were estimated. The estimates were used to compute the retirement benefit, upon which the liabilities are based. For those members without sufficient data or service, accumulated member contribution balances, with interest, were used as the actuarial accrued liability.

#### 17. DROP Account Balances

For DROP participants still working, the liability for the account balances in the asset information received from SDCERS staff was adjusted to assume average commencement in 2 ½ years and an interest crediting rate of 2.9%. Thereafter, it was assumed the account balance would be converted to an annuity at an interest rate of 5% over an average period of 10 years. The 10-year period was selected to average among the available DROP payment elections, including a lump sum, life expectancy, and 20 years. Pre-2006 DROP account balances still left on account were valued assuming they would be paid out until age 70 ½, with an interest crediting rate of 2.9%. The remaining account balances were valued without adjustment.

#### 18. Other

The contribution requirements and benefit values of a plan are calculated by applying actuarial assumptions to the benefit provisions and member information, using the actuarial funding methods described in the 2010 Actuarial Valuation Report.

Actual experience of SDCERS will not coincide exactly with assumed experiences, regardless of the choice of the assumptions, the skill of the actuary or the precision of the many calculations made. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments to the computed contribution rate. From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends, but not random year-to-year fluctuations.