

**San Diego City  
Employees' Retirement System**

**City of San Diego**

**Actuarial Valuation Report  
as of June 30, 2018**

**Produced by Cheiron**

**December 2018**

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December 20, 2018

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

**Re: SDCERS-City of San Diego June 30, 2018 Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit the June 30, 2018 Actuarial Valuation Report for the San Diego City Employees' Retirement System (SDCERS). The valuation results with respect to the City of San Diego (City) are contained in this valuation report. This report is for the use of the SDCERS Board and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report contains information on SDCERS' financial condition including assets, liabilities, and contributions, as well as certain exhibits required for SDCERS' Comprehensive Annual Financial Report (CAFR).

In preparing our report, we relied on information (some oral and some written) supplied by SDCERS' staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The results of this report rely on future plan experience conforming to the underlying assumptions and methods outlined in this report. To the extent that the actual plan experience deviates from the underlying assumptions and methods, or there are any changes in plan provisions or applicable laws, the results would vary accordingly.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries we 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. We are not attorneys, and our firm does not provide any legal services or advice.

This valuation was prepared for the San Diego City Employees' Retirement System for the purposes described herein and for the use by the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,  
Cheiron



Gene Kalwarski, FSA, MAAA, EA  
Principal Consulting Actuary



Alice Alsberghe, ASA, MAAA  
Associate Actuary

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION I – BOARD SUMMARY**

The primary purpose of the actuarial valuation is to disclose, as of the valuation date, on the following:

- The financial condition of the SDCERS-City of San Diego Defined Benefit Plan,
- Past and expected trends in the financial condition of SDCERS-City of San Diego,
- The City’s Actuarially Determined Contribution (ADC) for Fiscal Year 2020, and
- Information required for the Comprehensive Annual Financial Report (CAFR).

In this section, we present a summary of the principal valuation results. This includes the basis upon which the June 30, 2018 valuation was completed and an examination of the current financial condition of SDCERS-City of San Diego. In addition, we present a review of the key historical trends followed by the projected financial outlook for SDCERS-City of San Diego.

**A. Valuation Basis**

In September 2017, the SDCERS Board adopted changes to the discount rate assumption for both the June 30, 2017 valuation and the June 30, 2018 valuation. The discount rate was first lowered from 7.00% to 6.75% for the June 30, 2017 Actuarial Valuation. It was further reduced from 6.75% to 6.50% for this June 30, 2018 Actuarial Valuation.

The City of San Diego Memorandum dated May 22, 2018 outlines general salary increases, along with new and changed add-on pays, effective during fiscal year 2019 for SDCERS City of San Diego employees. The general salary increases effective July 1, 2018 and January 1, 2019, which represent across the board increases to the various membership tiers of SDCERS, were reflected in the results of this valuation. All non-Police Members were assumed to receive a 3.3% salary increase effective July 1, 2018. All Police Members were assumed to receive an 8.3% salary increase effective July 1, 2018 and a 5.0% salary increase effective January 1, 2019. Any new add-on pays, changes to existing add-on pays, or varying special salary adjustments were not reflected in this valuation.

Furthermore, subsequent salary increases negotiated between the City of San Diego and the San Diego Police Officers Association are not reflected in this valuation, except in projecting total payroll for Police Members to FY 2020 for the purpose of determining the Normal Cost portion of the ADC. However, the estimated impact of Police Members’ salary increases in FY 2020, based on our analysis dated November 15, 2017, is reflected in the projections shown later in this section of the report.

All other assumptions and methods remain the same as in the 2017 valuation, and can be found in Appendix B of this report.

The results of this valuation include adjustments to the employee contribution rates based on the revised discount rate, as required under San Diego City Charter Section 143 (“substantially equal”). There were no other changes in plan provisions. The revised employee contribution rates and other plan provisions can be found in Appendix C.

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**SECTION I – BOARD SUMMARY**

Throughout this report there will be references to “Old Plan,” “2009 Plan,” “2011 Plan,” “2012 Plan,” “2012 No COL Plan,” and “Prop B Plan” which distinguishes each membership category’s various benefit tiers according to their effective dates.

Numbers in the tables of this report may not always add exactly to the dollar due to rounding.

**SDCERS-CITY OF SAN DIEGO  
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**SECTION I – BOARD SUMMARY**

**B. Experience between June 30, 2017 and June 30, 2018**

The following discussion summarizes the key results of the June 30, 2018 valuation and how they compare to the results from the June 30, 2017 valuation.

**1. SDCERS-City Assets, Liabilities and Contributions**

Table I-1 presents a comparison between the June 30, 2018 and June 30, 2017 SDCERS-City of San Diego assets, liabilities, unfunded actuarial liability, funding ratios and contributions.

The key results shown in Table I-1 indicate that given the increase in total actuarial liability of 6.6% compared to the actuarial value of assets increase of 6.0%, the funding ratio decreased slightly from 71.2% as of June 30, 2017 to 70.8% as of June 30, 2018. SDCERS employs a commonly used actuarial smoothing method on the market value that dampens market volatility, so the actuarial value of assets increased by 6.0% whereas the market value of assets increased by 6.5%. Measuring the funding ratio on a market value of assets basis, the June 30, 2018 ratio remains at 73.2%. Section II-C of this report provides additional information explaining the development of the actuarial value of assets.

There was an increase in the Actuarially Determined Contribution (ADC), from \$322.9 million to \$350.5 million. The components of change are shown in Table I-3. These figures assume payment at the beginning of the year. Contribution amounts assuming payment throughout the year may be found in Table IV-1.

<b>Table I-1</b>				
<b>SDCERS - City of San Diego - Assets, Liabilities and Contributions</b>				
		<b>June 30, 2018</b>	<b>June 30, 2017</b>	<b>% Change</b>
Actuarial Liability	\$	10,192,808,461	\$ 9,565,802,458	6.6%
Actuarial Value Assets	\$	7,214,925,011	\$ 6,808,418,225	6.0%
Unfunded Actuarial Liability-Actuarial Value	\$	2,977,883,450	\$ 2,757,384,233	8.0%
Funding Ratio-Actuarial Value		70.8%	71.2%	-0.4%
Market Value Assets	\$	7,456,337,491	\$ 7,000,219,655	6.5%
Unfunded Actuarial Liability-Market Value	\$	2,736,470,970	\$ 2,565,582,804	6.7%
Funding Ratio-Market Value		73.2%	73.2%	0.0%
Actuarially Determined Contribution (ADC) <sup>1</sup>	\$	350.5	\$ 322.9	8.6%

<sup>1</sup>ADC reported in millions

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION I – BOARD SUMMARY**

**2. Components of UAL Change between June 30, 2017 and June 30, 2018**

The unfunded actuarial liability (UAL) for SDCERS-City of San Diego increased by \$220.5 million; from \$2,757.4 million to \$2,977.9 million. Table I-2 below presents the specific components of the change in the UAL.

The Plan’s UAL was expected to decrease by \$144.5 million, assuming no assumption changes and all assumptions were met. The increase in the UAL was driven by the reduction in the discount rate assumption (\$274.3 million). The liability experience loss of \$115.8 million was largely due to significant across the board salary increases for Police Members. Net asset experience was favorable, decreasing the UAL by \$25.1 million.

<b>Table I-2</b>	
<b>SDCERS - City of San Diego - Change in UAL</b>	
<b>(In Millions)</b>	
<b>1. UAL at June 30, 2017</b>	<b>\$ 2,757.4</b>
2. Expected change in UAL	(144.5)
3. Asset experience	
a. Anticipated investment loss/(gain)	(56.1)
b. Actual investment loss/(gain) <sup>1</sup>	(79.5)
c. Member contributions paid greater than expected	(1.6)
d. Net asset experience (b - a + c)	(25.1)
4. Liability experience loss <sup>1</sup>	115.8
5. Change in economic assumptions	274.3
6. Other miscellaneous	(0.0)
7. Total change in UAL: 2 + 3d + sum of 4 through 6	220.5
<b>8. UAL at June 30, 2018: 1 + 7</b>	<b>\$ 2,977.9</b>

<sup>1</sup>Net impact of asset and liability experience is a loss of \$36.3 million (\$79.5 million actual investment gain less \$115.8 million actual liability experience loss).

**SDCERS-CITY OF SAN DIEGO  
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**SECTION I – BOARD SUMMARY**

**3. SDCERS-City Change in City Contributions**

The City’s actuarially determined contribution (ADC) for FY 2020 increased by \$27.7 million; from \$322.9 million to \$350.5 million. The ADC would have been expected to decrease by \$5.7 million, assuming continued phase-in of investment experience from prior years and no changes in assumptions.

There were two significant events which increased the ADC. The discount rate assumption was reduced from 6.75% to 6.50%, which increased the ADC by \$18.4 million. Also, the liability experience loss, driven by large salary increases for Police Members, increased the ADC by \$17.5 million.

Offsetting the increases to the ADC was a net asset experience gain, which decreased the ADC by \$2.5 million.

Table I-3 below presents the specific components of the change in the ADC. In Section IV, we provide more detail on the development of this contribution.

<b>Table I-3</b>		
<b>SDCERS - City of San Diego - Change in ADC</b>		
<b>(In Millions)</b>		
<b>1. ADC at June 30, 2017</b>	<b>\$</b>	<b>322.9</b>
2. Expected change in ADC		(5.7)
3. Asset experience		
a. Anticipated investment loss/(gain)		(5.7)
b. Actual investment loss/(gain)		(8.0)
c. Member contributions paid greater than expected		(0.2)
d. Net asset experience (b - a + c)		(2.5)
4. Liability experience loss		17.5
5. Change in economic assumptions		18.4
6. Other miscellaneous		0.0
7. Total change in ADC: 2 + 3d + sum of 4 through 6		27.7
<b>8. ADC at June 30, 2018: 1 + 7</b>	<b>\$</b>	<b>350.5</b>

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**SECTION I – BOARD SUMMARY**

**4. SDCERS-City Membership**

Table I-4 shows that total membership in SDCERS-City of San Diego remained relatively steady, with a decrease of 0.5% from 2017 to 2018. However, there continues to be movement from active status into inactive terminated vested and retiree statuses, with a 6.6% decrease in actives and increases of 2.5% and 3.4% for terminated vested and retiree members, respectively. There is an increase in expected total active member payroll of 1.5% even with the decrease in active members, driven by salary increases. The average pay per active member increased by 8.7%. The closure of the Plan to non-Police new hires is expected to result in continued decreases in active member counts and total payroll, but increases in average pay since fewer new hires are entering the Plan at lower levels of pay to offset increases in the average.

Note: The payroll figures shown below are the expected amounts for the fiscal year beginning July 1, 2018. These include across the board salary increases effective July 1, 2018 for all Members and the increase effective January 1, 2019 for Police Members.

<b>Table I-4</b>				
<b>SDCERS - City of San Diego - Membership Total</b>				
<b>Valuation as of:</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>	<b>% Change</b>	
Actives	5,967	6,388	-6.6%	
Terminated Vested	2,921	2,851	2.5%	
Disabled	1,150	1,161	-0.9%	
Retirees	7,522	7,272	3.4%	
Beneficiaries	<u>1,352</u>	<u>1,335</u>	<u>1.3%</u>	
Total City Members	18,912	19,007	-0.5%	
Active Member Payroll	\$ 455,753,399	\$ 448,889,789	1.5%	
Average Pay per Active Member	\$ 76,379	\$ 70,271	8.7%	
Benefits in Pay Status	\$ 493,806,455	\$ 470,812,001	4.9%	
Average Benefit	\$ 49,262	\$ 48,199	2.2%	

**SDCERS-CITY OF SAN DIEGO  
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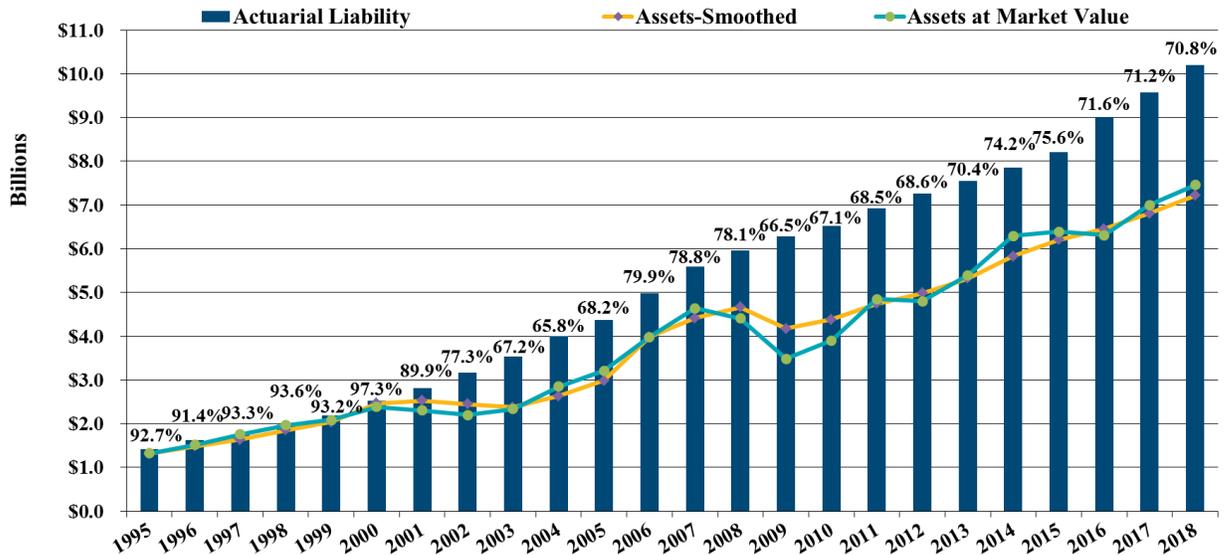
**SECTION I – BOARD SUMMARY**

**C. Historical Trends for SDCERS-City of San Diego**

Despite the primary focus given each year on the most recently computed unfunded actuarial liability (UAL), funding ratio, and City contribution (ADC), it is important to remember that each valuation is merely a snapshot of the long-term progress of a pension plan. It is more important to judge a current year’s valuation results relative to historical trends, and trends expected into the future.

In the chart below, we present the historical trends of the market value and smoothed assets compared to actuarial liabilities, with SDCERS-City of San Diego funding ratios since 1995.

**SDCERS-City of San Diego Assets and Liabilities 1995-2018**



From a low of 65.8% in 2004, the funding ratio improved significantly over the next several years primarily due to strong investment performance. In 2009, the funding ratio declined significantly due to investment losses but had been increasing steadily through 2015.

The drop in the funding ratio in 2016, from 75.6% to 71.6%, was primarily due to changes in both demographic and economic assumptions. In 2017, the actuarial experience gain was more than offset by the effect of the discount rate assumption change, lowering the funding ratio to 71.2%. Another reduction in the discount rate assumption for the 2018 valuation coupled with small liability experience losses, mainly from salary increases, reduced the funding ratio to 70.8%

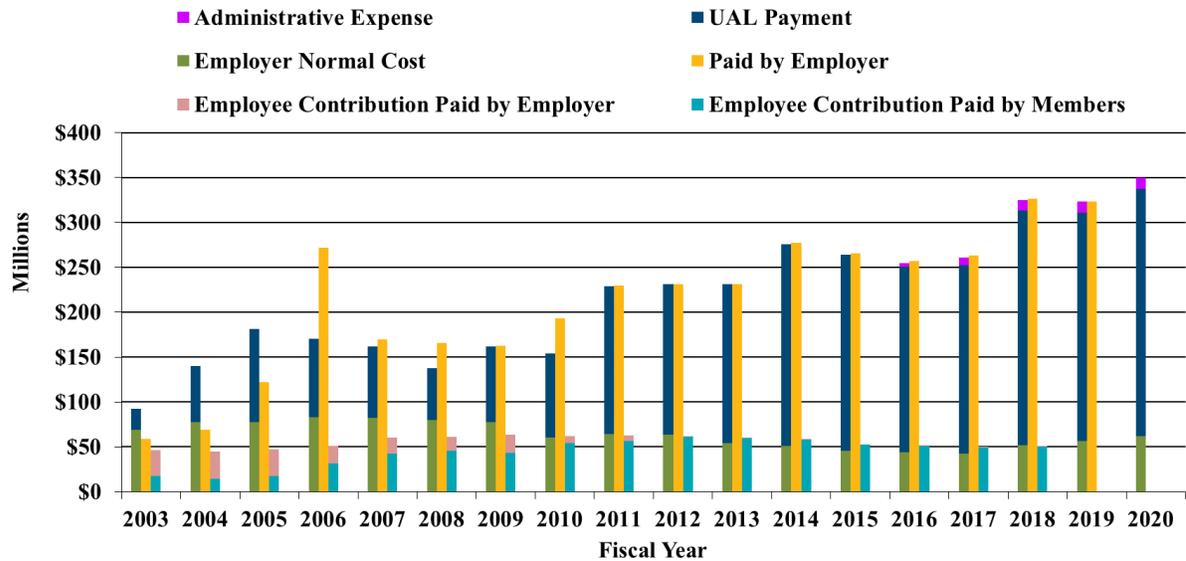
As mentioned earlier, the funding ratios represent the ratio of the smoothed (actuarial) assets over the actuarial liabilities. If the market value of assets were used instead, the funding ratio as of June 30, 2018 would be 73.2%.

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**SECTION I – BOARD SUMMARY**

In the next chart below, we present the historical trends for the SDCERS-City of San Diego contributions: actual contributions paid by the City and by the Members, and the actuarially determined contributions (ADC).

**SDCERS-City of San Diego City and Member Contributions FY 2003-2020**



This chart compares the actual contributions made by the City (gold bars) to the actuarially determined contributions (ADC). The ADC is broken out by component - Employer Normal Cost, plus UAL payment, plus administrative expense. The contributions paid by the City are based on the Board’s adopted funding practice of Normal Cost plus amortization of the various UAL components, including the requirement beginning in FY 2009 that there is no negative amortization and the requirement beginning in FY 2016 to fund the administrative expenses. The chart indicates that the City has been consistently paying at or above the ADC since FY 2006.

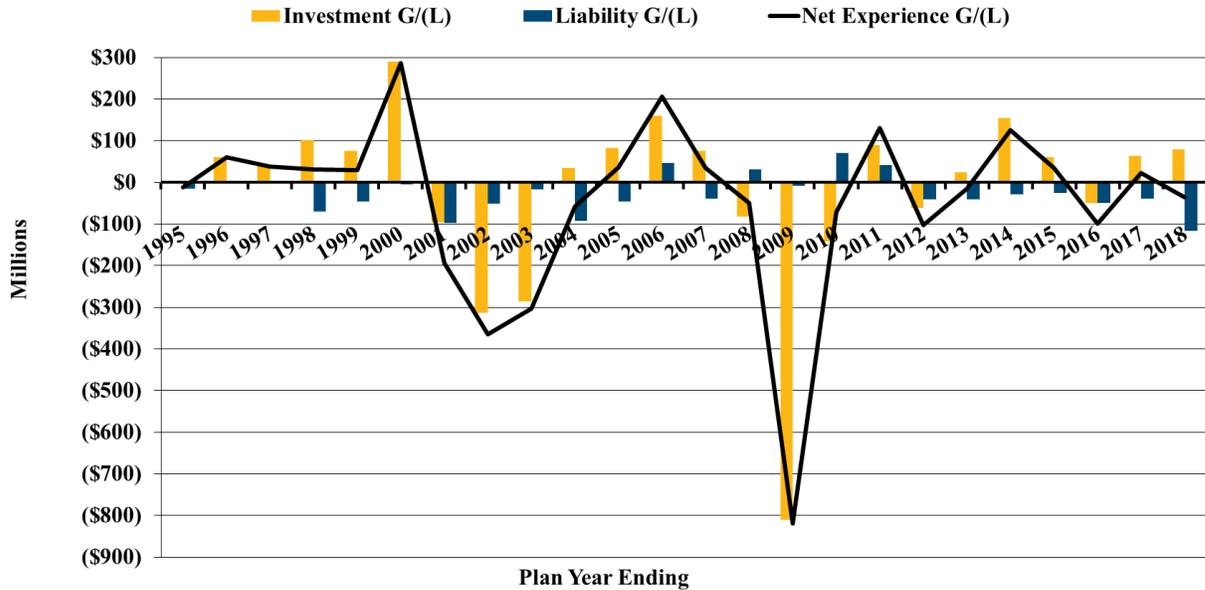
Employee contributions paid by the City and the Members are also shown in this chart. In the earlier years a substantial portion of employee contributions were “offset” (paid for) by the City (pink bars), but such offsets have disappeared completely in recent years.

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**SECTION I – BOARD SUMMARY**

The chart below for SDCERS-City of San Diego presents the pattern of annual experience gains and losses, broken into the investment and liability components. The chart does not include any changes in SDCERS’ assets and liabilities attributable to changes in actuarial methods, procedures, or assumptions, or to changes in plan benefits.

**SDCERS-City of San Diego Historical Gain/(Loss) 1995-2018**



The key insights from this chart are:

- In 2002 and 2003 the System experienced significant investment losses (gold bars), depicted on an actuarial value of assets basis, which were offset by investment gains from 2004 to 2007. However, the investment losses from 2008 through 2010 more than offset those gains.
- The investment loss in 2009 was by far the most significant gain or loss during the period shown.
- Over the period shown, liability experience has varied between small gains and small losses relative to the total liability of the Plan. In recent years there has been a pattern of liability losses, mostly due to salaries increasing by more than expected and fewer members dying than expected.
- The liability experience loss in 2018 was approximately 1.1% of the total liability. This loss is largely attributed to the across the board salary increases for FY 2019 in excess of assumed increase of 3.05%.

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**SECTION I – BOARD SUMMARY**

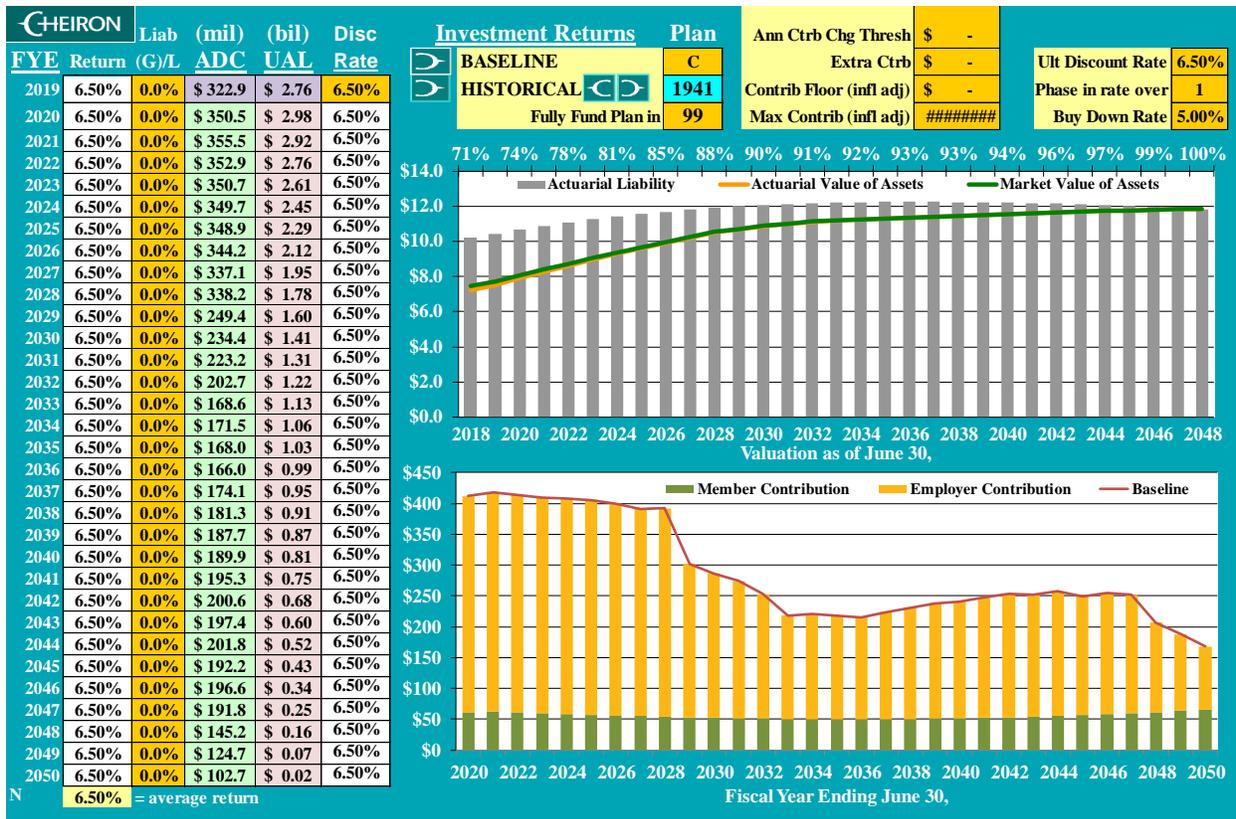
**D. Projected Financial Trends**

Our analysis of SDCERS-City of San Diego projected financial trends is a very important part of this valuation. These projections based on the June 30, 2018 valuation results are presented in terms of benefit security (assets over liabilities) and the City’s expected cost progression.

In the chart that follows, we project the SDCERS-City of San Diego assets and liabilities and the City’s contributions. The upper chart compares the assets (green and yellow lines) and liabilities (gray bars) and the lower chart shows contributions in dollars (employer contributions in yellow bars and member contributions in green bars). The left side of the exhibit shows the returns assumed each year followed by the annual ADC and UAL in dollar amounts.

These projections assume a 6.50% investment return and discount rate, as well as all experience conforming to the Plan’s assumptions. The projections reflect our understanding of the recent agreement between the City of San Diego and the San Diego Police Officers Association, which provides for salary increases for FY 2019 and FY 2020 and is expected (by the City) to result in active Police membership growth.

**SDCERS-City of San Diego Projections FY 2019-2050 (earnings as assumed)**



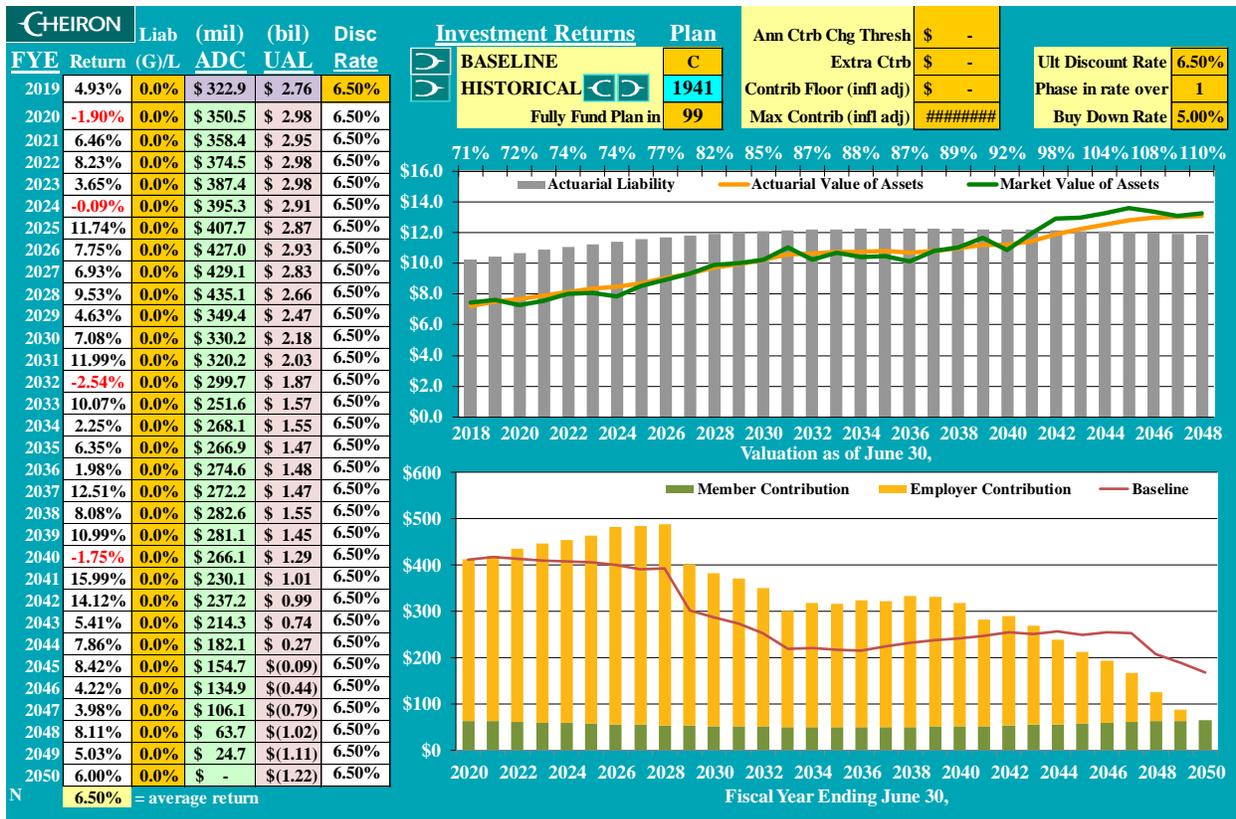
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**SECTION I – BOARD SUMMARY**

Based on the assumed earnings, the City's funded status (percentages at the top of the upper graph) is projected to reach 100% by the end of the projection period (30 years). The Plan's liabilities peak around 2036, and then begin to decline slowly. This is primarily due to the closure of the non-Police portion of the Plan to new hires. The City's ADC is projected to increase from \$350.5 million in FY 2020 to \$355.5 million in FY 2021, after which the projected contributions gradually decline for several years until FY 2028. There is a larger reduction in the FY 2029 ADC followed by another pattern of gradual decline. Projected contributions for the City remain in the range of approximately \$170 million to \$200 million for the remainder of the period before the Plan reaches full funding.

However, it is very important to note that these projections, while valid as baseline projections, **are not going to occur** as experience never conforms exactly to assumptions from year to year. As a result, we present the following additional stress testing projection based on assuming varying returns in the future, which are 6.50% on average.

**SDCERS-City of San Diego Projections FY 2019-2050 (earnings which vary by year)**



With varying annual earnings that average over the period to 6.50%, one can see the volatility in the employer contributions in the bottom chart. Note that this chart reflects an illustrative scenario and is not intended to reflect future expectations.

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**SECTION I – BOARD SUMMARY**

This last chart demonstrates the risks faced by SDCERS measured in terms of funding ratios and contributions. Whether the System is fully funded or poorly funded, subsequent returns can quickly alter the financial position of the Plan dramatically. It is impossible to judge the financial soundness of a System with a single year point measurement. What is more important to consider is the System's level of conservatism in funding the Plan, and the discipline and ability of the plan sponsor to consistently contribute the ADC as determined by the plan actuary.

**SDCERS-CITY OF SAN DIEGO  
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**SECTION II – ASSETS**

Like most other public pension plans, SDCERS uses two different asset measurements that are presented in this section: the market value and the actuarial value of assets. The market value of assets represents, as of the valuation date, the value of the assets if they were liquidated on that date. The actuarial value of assets is a value that smooths annual investment performance over multiple years to reduce the impact of annual investment volatility on employer contributions. The actuarial value of assets is used in determining SDCERS' contributions for the three participating employer plans.

Each employer receives a separate actuarial valuation report and cost determination. However, the assets of all employer plans are pooled for investment purposes. The apportionment of the assets among the employer plans directly impacts each employer's costs. Therefore, in the interest of ensuring transparency, this section discloses information on the total assets of SDCERS-All Employers. In addition, a brief explanation of how those assets are apportioned to the City of San Diego, the San Diego Unified Port District, and the San Diego County Regional Airport Authority is included.

On the following pages, detailed information is presented on SDCERS-All Employers assets, including:

- A. Disclosure of the June 30, 2018 total SDCERS market value of assets, by asset class;
- B. Market value of assets by Plan Sponsor;
- C. Development of the actuarial value of assets; and
- D. Disclosure of the investment performance for the year.

**SDCERS-CITY OF SAN DIEGO  
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**SECTION II – ASSETS**

**A. Disclosure of Market Value of Assets**

The market value of assets represents a “snap-shot” value as of June 30, 2018, the last day of the fiscal year, which provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with swings in the investment markets. Because these fluctuations would cause volatility in employer contributions, an actuarial value of assets is developed. Table II-1 below discloses the market value by asset class of SDCERS – All Employers’ gross assets on June 30, 2018.

<b>Table II-1 SDCERS – All Employers Summary of Reported Market Value of Total Defined Benefit Plan</b>	
Cash	\$ 321,501,772
US Stocks	1,798,973,804
International Stocks	1,697,162,025
Private Equity	1,143,575,054
Bonds	2,574,477,478
Real Estate	837,875,276
Receivables	181,881,306
Miscellaneous	188,253,265
Accounts Payable	<u>(656,709,038)</u>
<b>Market Value of Assets – June 30, 2018</b>	<b>\$ 8,086,990,942</b>

**SDCERS-CITY OF SAN DIEGO  
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**SECTION II – ASSETS**

**B. Market Value of Assets by Plan Sponsor**

As of July 1, 2007, the City, Unified Port District, and Airport Authority plans were separated into independent, qualified, single-employer, governmental defined benefit plans and trusts. The assets of the three separate plans and trusts are pooled in the SDCERS Group Trust, which was established as of July 1, 2007. SDCERS invests and administers the Group Trust as a common investment fund and accounts separately for the proportional interest of each plan and trust that participates in the Group Trust. Cash flow activity for each plan is recorded directly to that plan, with investment activity and other cash flow activity not specific to any one plan being allocated based upon each plan’s respective share of the Group Trust’s total assets, with time-weighted adjustments for the plan-specific cash flows. Administrative expenses are allocated based on the proportion of participants of a participating trust to the number of total participants of all participating trusts on the first day of the plan year. Table II-2 below discloses the market value and actuarial value of assets by plan.

<b>Table II-2 Summary of Market and Actuarial Assets for Each Employer Group as of June 30, 2018</b>			
	<u>Market Value</u> Total Net Assets June 30, 2017	<u>Market Value</u> Total Net Assets June 30, 2018	<u>Actuarial Value</u> Total Assets June 30, 2018
City of San Diego	\$ 7,000,219,655	\$ 7,456,337,491	\$ 7,214,925,011
Unified Port District	413,410,765	444,097,308	428,619,281
Airport Authority	<u>166,843,561</u>	<u>186,556,143</u>	<u>181,889,637</u>
<b>Total-SDCERS</b>	<b>\$ 7,580,473,980</b>	<b>\$ 8,086,990,942</b>	<b>\$ 7,825,433,929</b>

**SDCERS-CITY OF SAN DIEGO  
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**SECTION II – ASSETS**

**C. Actuarial Value of Assets**

To determine on-going funding requirements, most pension funds utilize an actuarial value of assets. Unlike the market value of assets, the actuarial value of assets represents an asset value based on averaging or smoothing year-to-year market value returns for purposes of reducing the resulting volatility on contributions.

The actuarial value of assets is equal to 100% of the expected actuarial value of assets as of June 30, 2018 plus 25% of the difference between the current actual market value of assets and the expected actuarial value of assets. (See Appendix B, Section B-2 for further explanation of the asset valuation method.) In no event will the actuarial value of assets ever be less than 80% of the market value of assets nor greater than 120% of the market value of assets.

<b>Table II-3 SDCERS - City of San Diego Development of Actuarial Value of Assets at June 30, 2018 Expected Value of Assets Method</b>	
1. Actuarial Value of Assets at June 30, 2017	\$ 6,808,418,225
2. Amount in (1) with interest at 6.75% to June 30, 2018	7,267,986,455
3. Employer and Member contributions for the Plan Year ended June 30, 2018	386,858,310
4. Disbursements from Trust excluding investment expenses, June 30, 2017 through June 30, 2018	525,585,201
5. Interest on cash flows to June 30, 2018 at 6.75% per year	<u>5,194,621</u>
6. Expected Actuarial Value of Assets at June 30, 2018 = (2) + (3) – (4) + (5)	7,134,454,184
7. Actual Market Value of Assets at June 30, 2018	<u>7,456,337,491</u>
8. Excess of (7) over (6)	321,883,308
9. Preliminary Actuarial Value of Assets at June 30, 2018 = (6) + 25% of (8)	\$ 7,214,925,011
10. 80% Minimum Corridor on the Actuarial Value of Assets = 80% of (7)	5,965,069,993
11. 120% Maximum Corridor on the Actuarial Value of Assets = 120% of (7)	8,947,604,990
12. Final Actuarial Value of Assets at June 30, 2018 = (9), but no less than (10) and no more than (11)	\$ 7,214,925,011

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION II – ASSETS**

**D. Investment Performance**

The return on the market value of assets, as reported by SDCERS' investment consultant Aon Hewitt Investment Consulting, was 8.9%. The return in FY 2017 was 13.5%.

On an actuarial (smoothed) value of assets basis, the return for FY 2018 was 8.09%. This return produced for SDCERS-All Employers an overall investment gain of \$86.2 million for the year ending June 30, 2018. (Note: this reported gain is different than the investment gain of \$79.5 million reported in Table I-2 of this report. \$79.5 million is the gain only for SDCERS-City).

### SECTION III – LIABILITIES

In this section, we present detailed information on liabilities for SDCERS-City of San Diego, including:

- Disclosure of liabilities at June 30, 2017 and June 30, 2018, and
- Statement of changes in the unfunded actuarial liabilities during the year.

#### A. Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the purpose for which the figures are ultimately used. Note that these liabilities are not applicable for settlement purposes, including the purchase of annuities and the payment of lump sums.

- **Present Value of Future Benefits:** Used for measuring all future SDCERS-City obligations, represents the amount of money needed today to fully fund all benefits of SDCERS-City, both earned as of the valuation date and those to be earned in the future by current plan members, under the current plan provisions.
- **Actuarial Liability-Entry Age Normal (EAN):** Used for determining employer contributions. This liability is calculated taking the present value of all future benefits and subtracting the present value of future member contributions and future employer normal costs as determined under the EAN actuarial funding method. It represents the portion of the present value of future benefits attributed to service prior to the valuation date by the Entry Age Normal method.
- **Present Value of Accrued Benefits:** This liability represents the present value of future benefits payable to all plan participants as of the valuation date, if future accruals and contributions stopped.

Table III-1, on the following page, discloses the first two of these liabilities for the current and prior year valuations. Tables III-2 through III-4 break down these liabilities by tier. Subtracting the actuarial value of assets from the actuarial liability results in a net surplus or an unfunded actuarial liability (UAL). Table III-5 discloses the third of these liabilities, present value of accrued benefits, for the current and prior year valuations.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION III – LIABILITIES**

Table III-1				
SDCERS - City of San Diego - Total				
Valuation as of:	June 30, 2018		June 30, 2017	
<b>Present Value of Future Benefits</b>				
Actives	\$	3,671,664,451	\$	3,382,309,128
Terminated Vested		327,894,550		314,615,177
Disabled		535,116,951		519,588,312
Retirees		6,242,834,992		5,885,178,563
Beneficiaries		311,705,590		287,968,200
<b>Total City</b>	<b>\$</b>	<b>11,089,216,534</b>	<b>\$</b>	<b>10,389,659,380</b>
<b>Actuarial Liability - EAN</b>				
Total Present Value of Future Benefits	\$	11,089,216,534	\$	10,389,659,380
Present Value of Future Normal Costs				
Employer Portion		489,051,033		447,948,281
Employee Portion		407,357,040		375,908,641
<b>Actuarial Liability - EAN</b>	<b>\$</b>	<b>10,192,808,461</b>	<b>\$</b>	<b>9,565,802,458</b>
Actuarial Value of Assets	\$	7,214,925,011	\$	6,808,418,225
<b>Unfunded EAN Actuarial Liability</b>	<b>\$</b>	<b>2,977,883,450</b>	<b>\$</b>	<b>2,757,384,233</b>

Table III-2 shows the actuarial liability as of June 30, 2018 for General and Elected Members of SDCERS-City of San Diego.

Table III-2				
SDCERS - City of San Diego - General & Elected as of June 30, 2018				
	Total	General-Old	General-2009	Elected
<b>Present Value of Future Benefits</b>				
Actives	\$ 1,943,385,325	\$ 1,814,909,414	\$ 126,053,013	\$ 2,422,898
Terminated Vested	263,077,110	258,335,667	3,776,237	965,206
Disabled	110,890,062	110,111,771	778,291	0
Retirees	3,228,496,128	3,218,010,582	323,497	10,162,049
Beneficiaries	127,197,412	126,531,756	0	665,656
<b>Total City General &amp; Elected</b>	<b>\$ 5,673,046,037</b>	<b>\$ 5,527,899,190</b>	<b>\$ 130,931,038</b>	<b>\$ 14,215,809</b>
<b>Actuarial Liability - EAN</b>				
Actives	\$ 1,572,899,750	\$ 1,519,892,538	\$ 51,788,091	\$ 1,219,121
Terminated Vested	263,077,110	258,335,667	3,776,237	965,206
Disabled	110,890,062	110,111,771	778,291	0
Retirees	3,228,496,128	3,218,010,582	323,497	10,162,049
Beneficiaries	127,197,412	126,531,756	0	665,656
<b>Total City General &amp; Elected</b>	<b>\$ 5,302,560,462</b>	<b>\$ 5,232,882,314</b>	<b>\$ 56,666,116</b>	<b>\$ 13,012,032</b>

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION III – LIABILITIES**

Table III-3 shows the actuarial liability as of June 30, 2018 for Police Members of SDCERS-City of San Diego.

<b>Table III-3</b>						
<b>SDCERS - City of San Diego - Police as of June 30, 2018</b>						
	<b>Total</b>	<b>Police-Old</b>	<b>Police-2009</b>	<b>Police-2012</b>	<b>Police-2012 No COL</b>	<b>Police-Prop B</b>
<b>Present Value of Future Benefits</b>						
Actives	\$ 1,211,671,686	\$ 948,412,840	\$ 61,568,644	\$ 16,349,805	\$ 33,288,443	\$ 152,051,954
Terminated Vested	53,937,519	51,592,043	660,237	226,951	491,824	966,464
Disabled	298,964,656	298,964,656	0	0	0	0
Retirees	1,931,758,146	1,931,758,146	0	0	0	0
Beneficiaries	130,278,157	130,278,157	0	0	0	0
<b>Total City Safety</b>	<b>\$ 3,626,610,164</b>	<b>\$ 3,361,005,842</b>	<b>\$ 62,228,881</b>	<b>\$ 16,576,756</b>	<b>\$ 33,780,267</b>	<b>\$ 153,018,418</b>
<b>Actuarial Liability - EAN</b>						
Actives	\$ 810,003,906	\$ 746,532,131	\$ 27,158,259	\$ 5,770,872	\$ 10,526,157	\$ 20,016,487
Terminated Vested	53,937,519	51,592,043	660,237	226,951	491,824	966,464
Disabled	298,964,656	298,964,656	0	0	0	0
Retirees	1,931,758,146	1,931,758,146	0	0	0	0
Beneficiaries	130,278,157	130,278,157	0	0	0	0
<b>Total City Safety</b>	<b>\$ 3,224,942,384</b>	<b>\$ 3,159,125,133</b>	<b>\$ 27,818,496</b>	<b>\$ 5,997,823</b>	<b>\$ 11,017,981</b>	<b>\$ 20,982,951</b>

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION III – LIABILITIES**

Table III-4 shows the actuarial liability as of June 30, 2018 for Fire and Lifeguard Members of SDCERS-City of San Diego.

<b>Table III-4 SDCERS - City of San Diego - Fire and Lifeguard as of June 30, 2018</b>					
	<b>Total</b>	<b>Fire-Old</b>	<b>Fire-2012</b>	<b>Lifeguard</b>	<b>Lifeguard-2011</b>
<b>Present Value of Future Benefits</b>					
Actives	\$ 516,607,439	\$ 458,266,671	\$ 2,540,033	\$ 54,935,378	\$ 865,357
Terminated Vested	10,879,921	9,193,647	14,989	1,671,285	-
Disabled	125,262,233	110,943,845	-	14,318,388	-
Retirees	1,082,580,719	1,001,136,585	-	81,444,134	-
Beneficiaries	<u>54,230,021</u>	<u>52,762,182</u>	-	<u>1,467,839</u>	-
<b>Total City Safety</b>	<b>\$ 1,789,560,333</b>	<b>\$ 1,632,302,930</b>	<b>\$ 2,555,022</b>	<b>\$ 153,837,024</b>	<b>\$ 865,357</b>
<b>Actuarial Liability - EAN</b>					
Actives	\$ 392,352,722	\$ 355,641,953	\$ 466,645	\$ 36,156,445	\$ 87,680
Terminated Vested	10,879,921	9,193,647	14,989	1,671,285	-
Disabled	125,262,233	110,943,845	-	14,318,388	-
Retirees	1,082,580,719	1,001,136,585	-	81,444,134	-
Beneficiaries	<u>54,230,021</u>	<u>52,762,182</u>	-	<u>1,467,839</u>	-
<b>Total City Safety</b>	<b>\$ 1,665,305,616</b>	<b>\$ 1,529,678,212</b>	<b>\$ 481,634</b>	<b>\$ 135,058,091</b>	<b>\$ 87,680</b>

Table III-5 shows the present value of accrued benefits as of June 30, 2018 for all Members of SDCERS-City of San Diego.

<b>Table III-5 SDCERS - City of San Diego - Present Value of Accrued Benefits</b>				
	<b>Valuation as of:</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>	<b>% Change</b>
1. Present Value of Accrued Benefits				
a. Members Currently Receiving Payments		\$ 7,089,657,533	\$ 6,692,735,075	5.9%
b. Vested Terminated and Inactive Members		327,894,550	314,615,177	4.2%
c. Active Members		<u>2,157,220,822</u>	<u>2,002,664,968</u>	<u>7.7%</u>
d. Total PVAB		\$ 9,574,772,905	\$ 9,010,015,220	6.3%
2. Assets at Market Value		\$ 7,456,337,491	\$ 7,000,219,655	6.5%
3. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero		\$ 2,118,435,413	\$ 2,009,795,566	
4. Ratio of Assets to Value of Benefits (2)/(1)(d)		77.87%	77.69%	0.2%

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION III – LIABILITIES**

**B. Changes in Unfunded Actuarial Liabilities**

The UAL of any retirement plan is expected to change at each subsequent valuation for a variety of reasons. In each valuation, we report on those elements of change in the UAL that have particular significance or could potentially affect the long-term financial outlook of a retirement plan. Below we present key changes in liabilities since the last valuation.

<b>Table III-6 Development of 2018 Experience Gain/(Loss) SDCERS - City of San Diego (In Millions)</b>		
1.	Unfunded Actuarial Liability at June 30, 2017	\$ 2,757.4
2.	Beginning of year Unfunded Actuarial Liability payment	(257.2)
3.	Interest accrued ((1+2) x 6.75%)	<u>168.8</u>
4.	Expected Unfunded Actuarial Liability at June 30, 2018 (1+2+3)	2,668.9
5.	Actual Unfunded Liability at June 30, 2018	2,977.9
6.	Difference: (4 - 5)	(309.0)
7.	Portion of difference (6) due to actuarial assumption or method changes	(274.3)
8.	Portion of difference (6) due to plan changes	0
9.	Portion of difference (6) due to contributions greater than expected	1.6
10.	Portion of difference (6) due to net experience Gain/(Loss)	(36.3)
	a) portion of (10) due to investment experience	\$ 79.5
	b) portion of (10) due to liability experience	\$ (115.8)
	c) portion of (10) due to service purchases	\$ 0

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION III – LIABILITIES**

Table III-7 shows the history of past experience gains and losses.

<b>Table III-7</b>			
<b>Experience Gain/(Loss) - Historical SDCERS - City of San Diego</b>			
<b>Valuation</b>		<b>Beginning-of-Year</b>	<b>Gain/(Loss)</b>
<b>Date</b>	<b>Gain/(Loss)</b>	<b>Actuarial Liabilities</b>	<b>% of Liability</b>
6/30/1992	\$ 57,952,320	\$ 1,006,299,729	5.8%
6/30/1993	(42,605,778)	1,057,238,917	-4.0%
6/30/1994	(6,744,850)	1,220,830,059	-0.6%
6/30/1995	(11,370,990)	1,338,279,541	-0.8%
6/30/1996	59,592,960	1,476,710,662	4.0%
6/30/1997	38,473,993	1,682,604,532	2.3%
6/30/1998	31,086,010	1,822,432,018	1.7%
6/30/1999 <sup>1</sup>	29,750,299	1,979,668,038	1.5%
6/30/2000	286,639,160	2,181,547,453	13.1%
6/30/2001	(193,168,984)	2,528,773,900	-7.6%
6/30/2002	(364,815,155)	2,809,537,745	-13.0%
6/30/2003	(303,699,305)	3,168,921,175	-9.6%
6/30/2004	(58,123,874)	3,532,625,521	-1.6%
6/30/2005	36,775,882	3,997,328,084	0.9%
6/30/2006	205,249,486	4,377,092,948	4.7%
6/30/2007	35,189,811	4,982,699,455	0.7%
6/30/2008	(49,930,537)	5,597,652,861	-0.9%
6/30/2009	(818,906,079)	5,963,549,545	-13.7%
6/30/2010	(71,030,037)	6,281,636,108	-1.1%
6/30/2011	130,020,025	6,527,223,751	2.0%
6/30/2012	(102,581,872)	6,917,175,002	-1.5%
6/30/2013	(16,759,103)	7,261,730,655	-0.2%
6/30/2014	126,171,209	7,555,526,738	1.7%
6/30/2015	34,597,899	7,858,703,380	0.4%
6/30/2016	(99,718,170)	8,205,952,554	-1.2%
6/30/2017	23,223,195	9,013,130,184	0.3%
6/30/2018	(36,298,951)	9,565,802,458	-0.4%

<sup>1</sup> Beginning with the June 30, 1999 valuation, experience is City only. The prior years include all employers.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION IV – CONTRIBUTIONS**

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to achieve and maintain an appropriate funded status of a plan. Typically, the actuarial process will use an actuarial funding method that attempts to create a pattern of contributions that is both stable and predictable.

The actuarial funding methodology employed is the Entry Age Normal (EAN) actuarial funding method. Under the funding method, there are three components to the total contribution: the normal cost, an amortization payment on the unfunded actuarial liability, and the expected administrative expenses. The normal cost for an individual employee is the ratio of their present value of future benefits to present value of future salaries at entry age, multiplied by their valuation salary. The gross normal cost rate for each sub-group is determined by dividing the sum of the individual normal costs by the total valuation salary for that sub-group. The gross normal cost rate is then reduced by the average employee contribution rate to determine the employer normal cost rate. Finally, the employer normal cost rate for each sub-group is multiplied by that group's projected FY 2020 payroll to determine the normal cost component of the FY 2020 ADC.

The EAN actuarial liability is the Plan's total present value of future benefits minus the total present value of future normal costs. The actuarial value of assets is allocated to each sub-group based on the proportion of the EAN actuarial liability for that sub-group. The difference between the EAN actuarial liability and the actuarial value of assets is the unfunded actuarial liability. The UAL for FY 2020 is to be amortized over several different periods. Table IV-2 shows the outstanding balance, the FY 2020 payment and the remaining amortization period for each of these components. If necessary, there is an additional UAL cost component to ensure that there is no negative amortization in aggregate in any year.

Beginning with the June 30, 2012 valuation, the non-Police portion of the UAL has been amortized in level dollar amounts, due to the closure of that portion of the plan to new hires. The portion of the UAL associated with the open Police Plan continues to be amortized as a level percentage of pay.

In January 2015 the Board voted to account for expected administrative expenses explicitly in the actuarially determined contribution (ADC). The administrative expense component is \$12.1 million for FY 2020 (assuming payment at the beginning of the year). This amount is assumed to increase by 2.5% per year.

In September 2017 the Board adopted a five-year layering method for the 2009 experience loss and 2012 non-Police UAL amortization bases, in order to improve the projected stability of future employer contributions. Details are shown in Table IV-2 of this section.

Table IV-1 on the following page shows how the City's contribution rate for SDCERS for FY 2020 is developed.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION IV – CONTRIBUTIONS**

**Table IV-1  
SDCERS - City of San Diego  
Development of the City's Contribution as of June 30, 2018 for FY 2020  
(dollars in millions)**

	WEIGHTED	Non-Safety			
	TOTAL CITY	Weighted Total	General Old Plan	General 2009 Plan	Elected
1. Total Normal Cost Rate as of June 30, 2018	<b>27.40%</b>	22.41%	22.78%	20.13%	37.93%
2. Member Contribution Rate as of June 30, 2018	<b>13.41%</b>	<u>11.02%</u>	<u>11.29%</u>	<u>9.50%</u>	<u>9.05%</u>
3. Employer Normal Cost Rate as of June 30, 2018 (1-2)	<b>13.99%</b>	11.39%	11.49%	10.63%	28.88%
4. Actuarial Liability	<b>\$ 10,192.8</b>	\$ 5,302.6	\$ 5,232.9	\$ 56.7	\$ 13.0
5. Actuarial Assets	<b>\$ 7,214.9</b>	\$ 3,782.4	\$ 3,733.5	\$ 39.7	\$ 9.3
6. Total Unfunded Actuarial Liability (UAL) (4-5) <sup>1</sup>	<b>\$ 2,977.9</b>	\$ 1,520.1	\$ 1,499.4	\$ 17.0	\$ 3.7
7. Preliminary FY20 UAL amortization <sup>1</sup>	<b>\$ 275.5</b>	\$ 145.0	\$ 143.0	\$ 1.6	\$ 0.4
8. <u>Negative Amortization Test for FY20</u>					
a. Total UAL on 6/30/18 less FY19 UAL payment	<b>\$ 2,723.0</b>	\$ 1,390.0	\$ 1,371.1	\$ 15.5	\$ 3.4
b. Interest on 8a. To 6/30/19	<b>\$ 177.0</b>	\$ 90.4	\$ 89.1	\$ 1.0	\$ 0.2
c. Preliminary FY20 UAL amortization (line 7)	<b>\$ 275.5</b>	\$ 145.0	\$ 143.0	\$ 1.6	\$ 0.4
d. Negative interest (8b - 8c, not less than zero)	<b>\$ 0.0</b>	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
9. Total FY20 UAL payment on 7/01/19 (8c + 8d)	<b>\$ 275.5</b>	\$ 145.0	\$ 143.0	\$ 1.6	\$ 0.4
10. Total FY20 UAL payment throughout year	<b>\$ 284.3</b>	\$ 149.6	\$ 147.6	\$ 1.7	\$ 0.4
11. Total Expected Payroll for FY20	<b>\$ 455.5</b>	\$ 233.3	\$ 196.0	\$ 36.9	\$ 0.4
12. FY20 Normal Cost paid throughout the year	<b>\$ 65.0</b>	\$ 26.6	\$ 22.5	\$ 3.9	\$ 0.1
13. FY20 Normal Cost paid at start of year	<b>\$ 63.0</b>	\$ 25.7	\$ 21.8	\$ 3.8	\$ 0.1
14. Administrative Expenses paid throughout the year	<b>\$ 12.5</b>	\$ 6.3	\$ 6.1	\$ 0.2	\$ 0.0
15. Determination of FY20 ADC %					
a. Employer Normal Cost Rate (12 divided by 11)	<b>14.26%</b>	11.38%	11.49%	10.63%	28.88%
b. UAL Rate (line 10 divided by line 11)	<b>62.42%</b>	64.13%	75.28%	4.53%	101.88%
c. Admin Expense Rate (line 14 divided by line 11)	<b>2.74%</b>	<u>2.70%</u>	<u>3.10%</u>	<u>0.54%</u>	<u>4.67%</u>
d. Total employer ADC % (15a + 15b + 15c)	<b>79.42%</b>	78.21%	89.87%	15.70%	135.42%
16. Determination of FY20 ADC dollars					
a. FY20 ADC if paid throughout year	<b>\$ 361.7</b>	\$ 182.5	\$ 176.2	\$ 5.8	\$ 0.5
b. FY20 ADC if paid at beginning of year	<b>\$ 350.5</b>	\$ 176.8	\$ 170.7	\$ 5.6	\$ 0.5

<sup>1</sup>See Table IV-2 for components of these amounts.

Note: Numbers may not add due to rounding.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION IV – CONTRIBUTIONS**

**Table IV-1 (cont.)  
SDCERS - City of San Diego  
Development of the City's Contribution as of June 30, 2018 for FY 2020  
(dollars in millions)**

	Safety									
	Weighted Total	Police Old	Police 2009	Police 2012	Police 2012 No COL	Police Prop B	Fire Old	Fire 2012	Lifeguard Old	Lifeguard 2011
1. Total Normal Cost Rate as of June 30, 2018	33.91%	34.85%	33.56%	32.67%	30.27%	30.23%	35.35%	34.62%	36.19%	33.06%
2. Member Contribution Rate as of June 30, 2018	<u>16.53%</u>	<u>17.37%</u>	<u>16.29%</u>	<u>16.24%</u>	<u>13.51%</u>	<u>13.55%</u>	<u>17.58%</u>	<u>16.72%</u>	<u>17.89%</u>	<u>15.91%</u>
3. Employer Normal Cost Rate as of June 30, 2018 (1-2)	17.38%	17.48%	17.27%	16.43%	16.76%	16.68%	17.77%	17.90%	18.30%	17.15%
4. Actuarial Liability	\$ 4,890.2	\$ 3,159.1	\$ 27.8	\$ 6.0	\$ 11.0	\$ 21.0	\$ 1,529.7	\$ 0.5	\$ 135.1	\$ 0.1
5. Actuarial Assets	<u>\$ 3,432.5</u>	<u>\$ 2,199.1</u>	<u>\$ 18.9</u>	<u>\$ 4.1</u>	<u>\$ 7.5</u>	<u>\$ 14.2</u>	<u>\$ 1,092.2</u>	<u>\$ 0.3</u>	<u>\$ 96.2</u>	<u>\$ 0.1</u>
6. Total Unfunded Actuarial Liability (UAL) (4-5) <sup>1</sup>	\$ 1,457.8	\$ 960.0	\$ 8.9	\$ 1.9	\$ 3.6	\$ 6.8	\$ 437.5	\$ 0.1	\$ 38.9	\$ 0.0
7. Preliminary FY20 UAL amortization <sup>1</sup>	\$ 130.5	\$ 83.2	\$ 0.8	\$ 0.2	\$ 0.3	\$ 0.6	\$ 41.7	\$ 0.0	\$ 3.7	\$ 0.0
8. <u>Negative Amortization Test for FY20</u>										
a. Total UAL on 6/30/18 less FY19 UAL payment	\$ 1,333.0	\$ 877.8	\$ 8.1	\$ 1.8	\$ 3.3	\$ 6.2	\$ 400.1	\$ 0.1	\$ 35.6	\$ 0.0
b. Interest on 8a. To 6/30/19	\$ 86.6	\$ 57.1	\$ 0.5	\$ 0.1	\$ 0.2	\$ 0.4	\$ 26.0	\$ 0.0	\$ 2.3	\$ 0.0
c. Preliminary FY20 UAL amortization (line 7)	<u>\$ 130.5</u>	<u>\$ 83.2</u>	<u>\$ 0.8</u>	<u>\$ 0.2</u>	<u>\$ 0.3</u>	<u>\$ 0.6</u>	<u>\$ 41.7</u>	<u>\$ 0.0</u>	<u>\$ 3.7</u>	<u>\$ 0.0</u>
d. Negative interest (8b - 8c, not less than zero)	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
9. Total FY20 UAL payment on 7/01/19 (8c + 8d)	\$ 130.5	\$ 83.2	\$ 0.8	\$ 0.2	\$ 0.3	\$ 0.6	\$ 41.7	\$ 0.0	\$ 3.7	\$ 0.0
10. Total FY20 UAL payment throughout year	\$ 134.7	\$ 85.9	\$ 0.8	\$ 0.2	\$ 0.3	\$ 0.6	\$ 43.1	\$ 0.0	\$ 3.8	\$ 0.0
11. Total Expected Payroll for FY20	\$ 222.2	\$ 90.8	\$ 10.7	\$ 3.2	\$ 7.2	\$ 62.3	\$ 41.2	\$ 0.5	\$ 6.1	\$ 0.2
12. FY20 Normal Cost paid throughout the year	\$ 38.4	\$ 15.9	\$ 1.8	\$ 0.5	\$ 1.2	\$ 10.4	\$ 7.3	\$ 0.1	\$ 1.1	\$ 0.0
13. FY20 Normal Cost paid at start of year	\$ 37.2	\$ 15.4	\$ 1.8	\$ 0.5	\$ 1.2	\$ 10.1	\$ 7.1	\$ 0.1	\$ 1.1	\$ 0.0
14. Administrative Expenses paid throughout the year	\$ 6.2	\$ 3.6	\$ 0.1	\$ 0.0	\$ 0.1	\$ 0.4	\$ 1.8	\$ 0.0	\$ 0.2	\$ 0.0
15. Determination of FY20 ADC %										
a. Employer Normal Cost Rate (12 divided by 11)	17.29%	17.48%	17.27%	16.43%	16.76%	16.68%	17.77%	17.90%	18.30%	17.15%
b. UAL Rate (line 10 divided by line 11)	60.62%	94.60%	7.47%	5.37%	4.39%	0.98%	104.40%	2.84%	62.87%	1.40%
c. Admin Expense Rate (line 14 divided by line 11)	<u>2.78%</u>	<u>4.00%</u>	<u>0.88%</u>	<u>0.78%</u>	<u>0.76%</u>	<u>0.63%</u>	<u>4.36%</u>	<u>0.74%</u>	<u>2.90%</u>	<u>0.66%</u>
d. Total employer ADC % (15a + 15b + 15c)	80.68%	116.09%	25.62%	22.58%	21.91%	18.29%	126.54%	21.48%	84.07%	19.21%
16. Determination of FY20 ADC dollars										
a. FY20 ADC if paid throughout year	\$ 179.3	\$ 105.4	\$ 2.7	\$ 0.7	\$ 1.6	\$ 11.4	\$ 52.2	\$ 0.1	\$ 5.1	\$ 0.0
b. FY20 ADC if paid at beginning of year	\$ 173.7	\$ 102.1	\$ 2.6	\$ 0.7	\$ 1.5	\$ 11.0	\$ 50.6	\$ 0.1	\$ 5.0	\$ 0.0

<sup>1</sup> See Table IV-2 for components of these amounts.

Note: Numbers may not add due to rounding.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION IV – CONTRIBUTIONS**

Table IV-2 shows information on each layer of the June 30, 2018 UAL.

<b>Table IV-2 SDCERS - City of San Diego Schedule of Amortization Bases as of July 1, 2018 Used in Development of the City's Contribution for FY 2020</b>								
	<b>Date</b>	<b>Initial Amortization</b>	<b>Initial Amortization</b>	<b>July 1, 2018 Outstanding</b>	<b>FY 2020 Outstanding</b>	<b>Remaining Amortization</b>	<b>FY 2020 Amortization</b>	
<b>Type of Base</b>	<b>Established</b>	<b>Initial Amount</b>	<b>Years</b>	<b>Balance</b>	<b>Balance (BOY) <sup>1</sup></b>	<b>Years</b>	<b>Payment (BOY) <sup>2</sup></b>	
1. June 30, 2007 UAL	7/1/2007	\$ 1,184,242,049	20	\$ 309,200,814	\$ 290,901,376	9	\$ 36,740,156	
2. Assumption Change	7/1/2008	83,787,434	30	30,918,041	30,746,599	20	2,064,576	
3. Experience Loss	7/1/2008	13,564,981	15	2,902,329	2,529,341	5	539,722	
4. Experience Loss	7/1/2009	810,661,179	15					
- Layer 1				38,255,191	34,287,892	6	6,195,223	
- Layer 2				38,255,191	34,998,605	7	5,507,012	
- Layer 3				38,255,191	35,550,466	8	4,972,507	
- Layer 4				38,255,191	35,991,134	9	4,545,595	
- Layer 5				38,255,191	36,350,934	10	4,196,931	
5. Experience Loss	7/1/2010	25,942,732	15	6,613,340	6,050,359	7	952,021	
6. Experience Gain <sup>3</sup>	7/1/2010	(50,000,000)	14	(10,981,251)	(9,842,427)	6	(1,778,355)	
7. Experience Gain	7/1/2011	(141,139,563)	15	(38,268,713)	(35,563,032)	8	(4,974,265)	
8. Assumption Change	7/1/2011	188,313,322	30	67,406,169	67,430,988	23	4,112,799	
9. Experience Loss	7/1/2012	36,799,824	15	33,586,634	31,598,875	9	3,990,863	
10. Method Change	7/1/2012	2,465,954	30	2,789,802	2,795,403	24	165,759	
11. Non-Police UAL <sup>4</sup>	7/1/2012	1,564,122,860	15					
- Layer 1				238,361,823	220,387,668	9	31,089,774	
- Layer 2				238,361,823	222,536,332	10	29,066,523	
- Layer 3				238,361,823	224,313,052	11	27,392,564	
- Layer 4				238,361,823	225,803,786	12	25,987,189	
- Layer 5				238,361,823	227,069,940	13	24,792,745	
12. Experience Loss	7/1/2013	25,877,674	15	23,380,031	21,959,283	10	2,754,189	
13. Salary Freeze	7/1/2013	(194,945,486)	15	(175,445,388)	(164,635,339)	10	(20,777,087)	
14. Assumption Change	7/1/2013	146,882,570	30	154,487,470	152,954,580	25	10,705,633	
15. Experience Gain	7/1/2014	(129,251,561)	15	(123,325,416)	(116,918,722)	11	(13,523,271)	
16. Experience Gain	7/1/2015	(37,814,454)	15	(37,570,464)	(35,829,462)	12	(3,913,168)	
17. Assumption Change	7/1/2015	95,828,141	30	101,585,107	100,769,413	27	6,848,618	
18. Experience Loss	7/1/2016	90,825,538	15	93,715,448	89,862,423	13	9,290,644	
19. Assumption Change	7/1/2016	543,780,953	30	578,035,127	573,431,407	28	38,869,575	
20. Experience Gain	7/1/2017	(8,079,441)	15	(8,624,803)	(8,543,820)	14	(632,474)	
21. Assumption Change	7/1/2017	253,973,564	30	271,116,780	269,394,311	29	17,829,359	
22. Experience Loss	7/1/2018	38,977,116	15	38,977,116	41,510,628	15	3,424,208	
23. Assumption Change	7/1/2018	274,300,207	30	<u>274,300,207</u>	<u>292,129,720</u>	30	<u>19,059,450</u>	
<b>TOTAL</b>				<b>\$ 2,977,883,450</b>	<b>\$ 2,900,021,713</b>		<b>\$ 275,495,017</b>	

<sup>1</sup> July 1, 2018 outstanding balance adjusted to the FY2020 beginning of year (BOY), July 1, 2019.

<sup>2</sup> For bases established 7/1/2013 and after, payment reflects level percent of pay amortization for Police portion and level dollar amortization for non-Police portion.

<sup>3</sup> Reduction in UAL from anticipated impact of PSC correction as of the June 30, 2010 valuation.

<sup>4</sup> Entire non-Police UAL as of June 30, 2012. Other pre-2013 bases reflect amounts attributable to Police portion.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORT INFORMATION**

Tables V-1 and V-2 are exhibits required for the System’s Comprehensive Annual Financial Report (CAFR). The Government Finance Officers Association (GFOA) recommends showing at least six years of experience in each of these exhibits in the CAFR. Table V-1 presents an analysis of financial experience for the valuation year, and Table V-2 presents the Schedule of Funded Liabilities by Type which shows the portion of actuarial liability covered by assets.

The disclosures needed to satisfy the new requirements of Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 are contained in our separate GASB 67/68 report as of June 30, 2018, issued on November 16, 2018.

<b>Table V-1 SDCERS - City of San Diego ANALYSIS OF FINANCIAL EXPERIENCE Gain and Loss in Actuarial Liability During Years Ended June 30 Resulting from Differences Between Assumed Experience and Actual Experience</b>	
<b>Type of Activity</b>	<b>Gain (or Loss) for Year ending June 30, 2018</b>
Investment Income	\$ 79,531,902
Combined Liability Experience	<u>(115,830,853)</u>
Gain (or Loss) During Year from Financial Experience	\$ (36,298,951)
Non-Recurring Gain (or Loss) Items (e.g., Contributions, Assumption Changes)	<u>(272,658,532)</u>
Composite Gain (or Loss) During Year	\$ (308,957,482)

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORT INFORMATION**

**Table V-2  
SDCERS - City of San Diego**

**Schedule of Funded Liabilities by Type  
(\$ in thousands)**

Valuation Date	(A)	(B)	(C)	Reported Assets <sup>1</sup>	Portion of Actuarial Liabilities Covered by Reported Assets		
	Active Member Contributions	Retirees And Beneficiaries	Remaining Active Members' Liabilities		(A)	(B)	(C)
2018 <sup>5</sup>	\$ 836,454	\$ 7,089,658	\$ 2,266,697	\$ 7,214,925	100%	89.97%	0.00%
2017 <sup>5</sup>	808,937	6,692,735	2,064,131	6,808,418	100	89.64	0.00
2016 <sup>5</sup>	798,226	6,221,393	1,993,511	6,455,378	100	90.93	0.00
2015 <sup>5</sup>	779,487	5,579,503	1,846,962	6,204,244	100	97.23	0.00
2014	741,628	5,304,270	1,812,805	5,828,594	100	95.90	0.00
2013 <sup>5</sup>	709,796	4,975,550	1,870,181	5,317,778	100	92.61	0.00
2012	662,488	4,625,110	1,974,133	4,982,442	100	93.40	0.00
2011 <sup>5</sup>	627,447	4,344,218	1,945,510	4,739,399	100	94.65	0.00
2010	584,296	3,912,113	2,030,816	4,382,047	100	97.08	0.00
2009	535,797	3,673,185	2,072,655	4,175,229	100	99.08	0.00
2008 <sup>5</sup>	522,966	3,286,668	2,153,916	4,662,346	100	100	39.50
2007 <sup>4</sup>	482,526	3,101,594	2,013,532	4,413,311	100	100	41.19
2006 <sup>3</sup>	456,562	2,822,203	1,703,935	3,981,932	100	100	41.27
2005	457,550	2,183,263	1,736,279	2,983,080	100	100	19.71
2004	414,986 <sup>2</sup>	1,946,660	1,635,681	2,628,680	100	100	16.33

<sup>1</sup> Actuarial Value of Assets.

<sup>2</sup> Estimated.

<sup>3</sup> Reflects contingent liabilities (Corbett pre-July 1, 2000 and 13<sup>th</sup> check), DROP reserves, supplemental COLA reserves, and IRC section 415 limits.

<sup>4</sup> The actuarial liability on June 30, 2007 and after is based on the entry age actuarial funding method. All prior years are based on the projected unit credit actuarial funding method.

<sup>5</sup> Reflects revised actuarial and economic assumptions.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Table A-1 Reconciliation of Member Data Total SDCERS - City of San Diego</b>								
	<u>Active</u>	<u>Terminated Vested</u>	<u>Terminated Non-Vested</u>	<u>Disabled</u>	<u>Retired</u>	<u>Beneficiaries</u>	<u>DROP</u>	<u>Totals</u>
<b>Participants as of 7/1/2017</b>	<b>6,388</b>	<b>731</b>	<b>2,120</b>	<b>1,161</b>	<b>6,101</b>	<b>1,335</b>	<b>1,171</b>	<b>19,007</b>
New Entrants	136	0	12	0	0	0	0	148
Returned to Work	16	(5)	(11)	0	0	0	0	0
Vested Terminations	(86)	100	(14)	0	0	0	0	0
Non-Vested Terminations	(154)	0	154	0	0	0	0	0
Retirements	(64)	(68)	(4)	0	410	0	(274)	0
DROP	(217)	(3)	0	0	0	0	220	0
Disabilities	(8)	(2)	(1)	20	(7)	0	(2)	0
New Continuants	0	0	0	(2)	0	102	0	100
New Dissolutions <sup>1</sup>	0	0	0	0	2	0	0	2
Benefits Ceased <sup>2</sup>	(11)	(3)	(5)	(30)	(114)	(84)	(1)	(248)
Lump Sum Cashout	(32)	(3)	(77)	0	(1)	0	0	(113)
Transfers In/Out	(1)	0	0	0	0	(1)	12	10
Miscellaneous Adjustments	0	(1)	1	1	3	0	2	6
<b>Participants as of 7/1/2018</b>	<b>5,967</b>	<b>746</b>	<b>2,175</b>	<b>1,150</b>	<b>6,394</b>	<b>1,352</b>	<b>1,128</b>	<b>18,912</b>

<sup>1</sup> Includes participants who may have previously had a frozen benefit and retired from a different plan.

<sup>2</sup> Includes deaths and benefits that were terminated or suspended.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Table A-2 Reconciliation of Member Data City General</b>								
	<u>Active</u>	<u>Terminated Vested</u>	<u>Terminated Non-Vested</u>	<u>Disabled</u>	<u>Retired</u>	<u>Beneficiaries</u>	<u>DROP</u>	<u>Totals</u>
<b>Participants as of 7/1/2017</b>	<b>4,257</b>	<b>601</b>	<b>1,656</b>	<b>400</b>	<b>4,123</b>	<b>732</b>	<b>744</b>	<b>12,513</b>
New Entrants	32	0	4	0	0	0	0	36
Returned to Work	13	(5)	(8)	0	0	0	0	0
Vested Terminations	(80)	91	(11)	0	0	0	0	0
Non-Vested Terminations	(76)	0	76	0	0	0	0	0
Retirements	(51)	(53)	(2)	0	272	0	(166)	0
DROP	(167)	(1)	0	0	0	0	168	0
Disabilities	(5)	(1)	0	9	(3)	0	0	0
New Continuants	0	0	0	(1)	0	58	0	57
New Dissolutions <sup>1</sup>	0	0	0	0	0	0	0	0
Benefits Ceased <sup>2</sup>	(10)	(2)	(5)	(13)	(91)	(61)	(1)	(183)
Lump Sum Cashout	(15)	(2)	(62)	0	(1)	0	0	(80)
Transferred Out	1	0	0	0	0	(1)	12	12
Miscellaneous Adjustments	0	(1)	1	1	2	0	0	3
<b>Participants as of 7/1/2018</b>	<b>3,899</b>	<b>627</b>	<b>1,649</b>	<b>396</b>	<b>4,302</b>	<b>728</b>	<b>757</b>	<b>12,358</b>

<sup>1</sup> Includes participants who may have previously had a frozen benefit and retired from a different plan.

<sup>2</sup> Includes deaths and benefits that were terminated or suspended.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Table A-3 Reconciliation of Member Data City Safety</b>								
	<u>Active</u>	<u>Terminated Vested</u>	<u>Terminated Non-Vested</u>	<u>Disabled</u>	<u>Retired</u>	<u>Beneficiaries</u>	<u>DROP</u>	<u>Totals</u>
<b>Participants as of 7/1/2017</b>	<b>2,131</b>	<b>130</b>	<b>464</b>	<b>761</b>	<b>1,978</b>	<b>603</b>	<b>427</b>	<b>6,494</b>
New Entrants	104	0	8	0	0	0	0	112
Returned to Work	3	0	(3)	0	0	0	0	0
Vested Terminations	(6)	9	(3)	0	0	0	0	0
Non-Vested Terminations	(78)	0	78	0	0	0	0	0
Retirements	(13)	(15)	(2)	0	138	0	(108)	0
DROP	(50)	(2)	0	0	0	0	52	0
Disabilities	(3)	(1)	(1)	11	(4)	0	(2)	0
New Continuants	0	0	0	(1)	0	44	0	43
New Dissolutions <sup>1</sup>	0	0	0	0	2	0	0	2
Benefits Ceased <sup>2</sup>	(1)	(1)	0	(17)	(23)	(23)	0	(65)
Lump Sum Cashout	(17)	(1)	(15)	0	0	0	0	(33)
Transferred Out	(2)	0	0	0	0	0	0	(2)
Miscellaneous Adjustments	0	0	0	0	1	0	2	3
<b>Participants as of 7/1/2018</b>	<b>2,068</b>	<b>119</b>	<b>526</b>	<b>754</b>	<b>2,092</b>	<b>624</b>	<b>371</b>	<b>6,554</b>

<sup>1</sup> Includes participants who may have previously had a frozen benefit and retired from a different plan.

<sup>2</sup> Includes deaths and benefits that were terminated or suspended.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Table A-4 SDCERS - City of San Diego Active Member Data</b>			
	<b><u>June 30, 2018</u></b>	<b><u>June 30, 2017</u></b>	<b><u>% Change</u></b>
<b><u>Total</u></b>			
Count	5,967	6,388	-6.6%
Average Current Age	45.5	45.1	0.7%
Average Service	14.5	14.0	3.9%
Average Pensionable Earnings	\$ 76,379	\$ 70,271	8.7%
Annual Pensionable Earnings	\$ 455,753,400	\$ 448,889,789	1.5%
Average Valuation Compensation <sup>1</sup>	\$ 76,379	\$ 70,271	8.7%
Annual Valuation Compensation <sup>1</sup>	\$ 455,753,400	\$ 448,889,789	1.5%
Average Service Without Purchased Service	13.9	13.4	4.2%
Members with Paid Purchased Service	1,011	1,105	-8.5%
Members with Any Purchased Service	1,037	1,139	-9.0%
Amount of Paid Purchased Service	3,349	3,671	-8.8%
Amount of Total Purchased Service	3,547	3,912	-9.3%
<b><u>General</u></b>			
Count	3,899	4,257	-8.4%
Average Current Age	48.5	48.0	1.0%
Average Service	15.8	15.2	3.9%
Average Pensionable Earnings	\$ 66,324	\$ 62,912	5.4%
Annual Pensionable Earnings	\$ 258,595,387	\$ 267,818,260	-3.4%
Average Valuation Compensation <sup>1</sup>	\$ 66,324	\$ 62,912	5.4%
Annual Valuation Compensation <sup>1</sup>	\$ 258,595,387	\$ 267,818,260	-3.4%
Average Service Without Purchased Service	15.1	14.5	4.1%
Members with Paid Purchased Service	756	836	-9.6%
Members with Any Purchased Service	762	846	-9.9%
Amount of Paid Purchased Service	2,624	2,920	-10.1%
Amount of Total Purchased Service	2,699	3,015	-10.5%
<b><u>Safety</u></b>			
Count	2,068	2,131	-3.0%
Average Current Age	39.6	39.3	0.8%
Average Service	12.1	11.6	4.3%
Average Pensionable Earnings	\$ 95,338	\$ 84,970	12.2%
Annual Pensionable Earnings	\$ 197,158,013	\$ 181,071,529	8.9%
Average Valuation Compensation <sup>1</sup>	\$ 95,338	\$ 84,970	12.2%
Annual Valuation Compensation <sup>1</sup>	\$ 197,158,013	\$ 181,071,529	8.9%
Average Service Without Purchased Service	11.7	11.2	4.5%
Members with Paid Purchased Service	255	269	-5.2%
Members with Any Purchased Service	275	293	-6.1%
Amount of Paid Purchased Service	724	750	-3.5%
Amount of Total Purchased Service	848	896	-5.4%

<sup>1</sup> The definition of valuation compensation differs from the definition of pensionable earnings due to IRS 401(a).

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Table A-5 SDCERS - City of San Diego Non-Active Participant Data</b>						
	<b>Count</b>			<b>Average Age</b>		
	<b>June 30, 2018</b>	<b>June 30, 2017</b>	<b>%Change</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>	<b>%Change</b>
<b><u>Total</u></b>						
Retired <sup>1</sup>	7,522	7,272	3.4%	66.5	66.2	0.5%
Disabled	1,150	1,161	-0.9%	67.5	67.0	0.6%
Beneficiaries	<u>1,352</u>	<u>1,335</u>	1.3%	<u>73.5</u>	<u>73.7</u>	-0.3%
Payee Total	10,024	9,768	2.6%	67.6	67.3	0.4%
DROP Participants	1,128	1,171	-3.7%	57.9	57.5	0.7%
Deferred Vested <sup>2</sup>	2,921	2,851	2.5%	48.0	48.0	0.1%
Vested < 10 yrs svc	2,175	2,120	2.6%			
<b><u>General</u></b>						
Retired <sup>1</sup>	5,059	4,867	3.9%	67.9	67.6	0.4%
Disabled	396	400	-1.0%	66.3	65.9	0.6%
Beneficiaries	<u>728</u>	<u>732</u>	-0.5%	<u>75.3</u>	<u>75.8</u>	-0.7%
Payee Total	6,183	5,999	3.1%	68.6	68.5	0.1%
DROP Participants	757	744	1.7%	59.6	59.5	0.2%
Deferred Vested <sup>2</sup>	2,276	2,257	0.8%	49.8	49.4	0.8%
Vested < 10 yrs svc	1,649	1,656	-0.4%			
<b><u>Safety</u></b>						
Retired <sup>1</sup>	2,463	2,405	2.4%	63.8	63.2	0.9%
Disabled	754	761	-0.9%	68.1	67.7	0.6%
Beneficiaries	<u>624</u>	<u>603</u>	3.5%	<u>71.4</u>	<u>71.2</u>	0.3%
Payee Total	3,841	3,769	1.9%	65.8	65.4	0.6%
DROP Participants	371	427	-13.1%	54.4	54.0	0.7%
Deferred Vested <sup>2</sup>	645	594	8.6%	41.8	42.3	-1.2%
Vested < 10 yrs svc	526	464	13.4%			

<sup>1</sup> Includes DROP Participants.

<sup>2</sup> Includes all Participants having a contribution balance still on account with SDCERS.

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Table A-6 SDCERS - City of San Diego Non-Active Participant Data</b>						
	<b>Total Annual Benefit</b>			<b>Average Annual Benefit</b>		
	<b>June 30, 2018</b>	<b>June 30, 2017</b>	<b>%Change</b>	<b>June 30, 2018</b>	<b>June 30, 2017</b>	<b>%Change</b>
<b>Total</b>						
Retired <sup>1</sup>	\$ 422,141,424	\$ 401,762,775	5.1%	\$ 56,121	\$ 55,248	1.6%
Disabled	42,730,372	41,914,596	1.9%	37,157	36,102	2.9%
Beneficiaries	<u>28,934,659</u>	<u>27,134,630</u>	6.6%	<u>21,401</u>	<u>20,326</u>	5.3%
Payee Total	\$ 493,806,455	\$ 470,812,001	4.9%	\$ 49,262	\$ 48,199	2.2%
DROP Participants	\$ 63,444,366	\$ 66,448,172	-4.5%	\$ 56,245	\$ 56,745	-0.9%
Deferred Vested <sup>2</sup>	\$ 164,054,886	\$ 157,417,824	4.2%	\$ 56,164	\$ 55,215	1.7%
<b>General</b>						
Retired <sup>1</sup>	\$ 230,912,827	\$ 218,233,812	5.8%	\$ 45,644	\$ 44,839	1.8%
Disabled	8,499,924	8,289,571	2.5%	21,464	20,724	3.6%
Beneficiaries	<u>12,553,781</u>	<u>11,711,587</u>	7.2%	<u>17,244</u>	<u>15,999</u>	7.8%
Payee Total	\$ 251,966,532	\$ 238,234,969	5.8%	\$ 40,752	\$ 39,712	2.6%
DROP Participants	\$ 33,539,454	\$ 32,244,913	4.0%	\$ 44,306	\$ 43,340	2.2%
Deferred Vested <sup>2</sup>	\$ 134,722,944	\$ 126,968,084	6.1%	\$ 59,193	\$ 56,255	5.2%
<b>Safety</b>						
Retired <sup>1</sup>	\$ 191,228,597	\$ 183,528,963	4.2%	\$ 77,641	\$ 76,311	1.7%
Disabled	34,230,448	33,625,026	1.8%	45,398	44,185	2.7%
Beneficiaries	<u>16,380,878</u>	<u>15,423,043</u>	6.2%	<u>26,251</u>	<u>25,577</u>	2.6%
Payee Total	\$ 241,839,923	\$ 232,577,032	4.0%	\$ 62,963	\$ 61,708	2.0%
DROP Participants	\$ 29,904,912	\$ 34,203,259	-12.6%	\$ 80,606	\$ 80,101	0.6%
Deferred Vested <sup>2</sup>	\$ 29,331,942	\$ 30,449,740	-3.7%	\$ 45,476	\$ 51,262	-11.3%

<sup>1</sup> Includes DROP Participants.

<sup>2</sup> Includes all Participants having a contribution balance still on account with SDCERS. Annual benefit for deferred vested Participants is the total contribution balance on account as of the actuarial valuation date.

**SDCERS-CITY OF SAN DIEGO  
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**APPENDIX A – MEMBERSHIP INFORMATION**

Table A-7 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2018 Total City											
Age	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	
Under 25	29	16	-	-	-	-	-	-	-	-	45
25 to 29	54	227	70	-	-	-	-	-	-	-	351
30 to 34	23	191	297	122	4	-	-	-	-	-	637
35 to 39	12	72	249	340	89	2	-	-	-	-	764
40 to 44	3	44	173	273	315	78	2	-	-	-	888
45 to 49	7	29	128	160	383	327	96	9	-	-	1,139
50 to 54	5	32	110	118	288	279	246	131	10	1	1,220
55 to 59	3	20	61	92	190	107	75	41	9	-	598
60 to 64	-	14	53	55	66	31	20	10	1	-	250
65 to 69	1	3	20	22	7	4	1	-	1	-	59
70 and up	-	1	8	3	2	1	-	-	-	1	16
<b>Total Count</b>	137	649	1,169	1,185	1,344	829	440	191	21	2	5,967

Table A-8 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2018 Total City											
Age	Average Salary Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	
Under 25	\$ 57,784	\$ 69,301	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 61,879
25 to 29	55,713	69,176	63,928	-	-	-	-	-	-	-	66,058
30 to 34	53,873	69,242	75,459	78,675	73,583	-	-	-	-	-	73,420
35 to 39	57,048	69,263	75,701	78,815	76,489	78,747	-	-	-	-	76,287
40 to 44	46,347	61,627	75,410	78,033	80,336	83,014	69,191	-	-	-	77,837
45 to 49	48,712	57,022	66,206	73,129	76,823	85,808	77,075	64,894	-	-	76,940
50 to 54	35,086	48,884	66,421	64,756	66,613	76,174	77,397	73,270	62,904	85,068	70,882
55 to 59	39,748	57,954	58,139	62,616	58,608	67,176	70,214	73,017	77,152	-	63,316
60 to 64	-	41,635	65,003	58,274	58,490	67,788	68,130	56,857	108,931	-	60,940
65 to 69	37,100	34,434	56,504	60,613	49,674	56,847	86,764	-	65,748	-	56,468
70 and up	-	52,531	44,865	50,963	57,522	34,805	-	-	-	75,607	49,362
<b>Avg. Salary</b>	\$ 54,158	\$ 66,027	\$ 71,038	\$ 73,833	\$ 71,781	\$ 79,006	\$ 75,665	\$ 71,962	\$ 71,337	\$ 80,338	\$ 72,310

**SDCERS-CITY OF SAN DIEGO  
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**APPENDIX A – MEMBERSHIP INFORMATION**

Table A-9 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2018 General											
Age	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	
Under 25	1	-	-	-	-	-	-	-	-	-	1
25 to 29	8	54	42	-	-	-	-	-	-	-	104
30 to 34	4	56	136	40	4	-	-	-	-	-	240
35 to 39	4	33	150	150	51	2	-	-	-	-	390
40 to 44	3	25	131	136	168	57	2	-	-	-	522
45 to 49	7	24	107	114	247	166	59	8	-	-	732
50 to 54	5	31	107	101	234	210	197	127	10	1	1,023
55 to 59	3	19	60	85	182	99	70	38	9	-	565
60 to 64	-	14	52	54	66	31	20	9	1	-	247
65 to 69	1	3	20	22	7	4	1	-	1	-	59
70 and up	-	1	8	3	2	1	-	-	-	1	16
<b>Total Count</b>	36	260	813	705	961	570	349	182	21	2	3,899

Table A-10 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2018 General											
Age	Average Salary Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	
Under 25	\$ 54,923	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 54,923
25 to 29	35,740	53,387	50,116	-	-	-	-	-	-	-	50,708
30 to 34	33,000	51,019	62,357	56,588	73,583	-	-	-	-	-	58,448
35 to 39	44,697	55,756	69,822	64,389	60,925	78,747	-	-	-	-	65,167
40 to 44	46,347	51,577	72,621	66,065	67,750	78,924	69,191	-	-	-	68,861
45 to 49	48,712	49,817	62,443	67,134	67,217	72,303	63,284	61,280	-	-	66,530
50 to 54	35,086	47,634	65,896	61,318	61,126	68,725	69,160	71,686	62,904	85,068	65,566
55 to 59	39,748	57,535	57,901	60,214	57,319	64,927	68,374	70,448	77,152	-	61,632
60 to 64	-	41,635	63,427	57,749	58,490	67,788	68,130	52,751	108,931	-	60,355
65 to 69	37,100	34,434	56,504	60,613	49,674	56,847	86,764	-	65,748	-	56,468
70 and up	-	52,531	44,865	50,963	57,522	34,805	-	-	-	75,607	49,362
<b>Avg. Salary</b>	\$ 40,651	\$ 51,436	\$ 64,656	\$ 63,087	\$ 62,898	\$ 69,969	\$ 68,001	\$ 70,033	\$ 71,337	\$ 80,338	\$ 64,207

**SDCERS-CITY OF SAN DIEGO  
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**APPENDIX A – MEMBERSHIP INFORMATION**

Table A-11 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2018 Safety											
Age	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	
Under 25	28	16	-	-	-	-	-	-	-	-	44
25 to 29	46	173	28	-	-	-	-	-	-	-	247
30 to 34	19	135	161	82	-	-	-	-	-	-	397
35 to 39	8	39	99	190	38	-	-	-	-	-	374
40 to 44	-	19	42	137	147	21	-	-	-	-	366
45 to 49	-	5	21	46	136	161	37	1	-	-	407
50 to 54	-	1	3	17	54	69	49	4	-	-	197
55 to 59	-	1	1	7	8	8	5	3	-	-	33
60 to 64	-	-	1	1	-	-	-	1	-	-	3
65 to 69	-	-	-	-	-	-	-	-	-	-	-
70 and up	-	-	-	-	-	-	-	-	-	-	-
<b>Total Count</b>	101	389	356	480	383	259	91	9	-	-	2,068

Table A-12 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2018 Safety											
Age	Average Salary Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up	
Under 25	\$ 57,886	\$ 69,301	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 62,037
25 to 29	59,186	74,105	84,647	-	-	-	-	-	-	-	72,521
30 to 34	58,267	76,801	86,527	89,449	-	-	-	-	-	-	82,471
35 to 39	63,223	80,693	84,610	90,204	97,379	-	-	-	-	-	87,883
40 to 44	-	74,851	84,111	89,913	94,719	94,118	-	-	-	-	90,637
45 to 49	-	91,606	85,377	87,987	94,268	99,733	99,066	93,805	-	-	95,663
50 to 54	-	87,620	85,159	85,179	90,389	98,842	110,513	123,582	-	-	98,486
55 to 59	-	65,915	72,383	91,787	87,936	95,000	95,977	105,559	-	-	92,147
60 to 64	-	-	146,927	86,612	-	-	-	93,805	-	-	109,115
65 to 69	-	-	-	-	-	-	-	-	-	-	-
70 and up	-	-	-	-	-	-	-	-	-	-	-
<b>Avg. Salary</b>	\$ 58,972	\$ 75,779	\$ 85,611	\$ 89,617	\$ 94,071	\$ 98,894	\$ 105,060	\$ 110,957	\$ -	\$ -	\$ 87,587





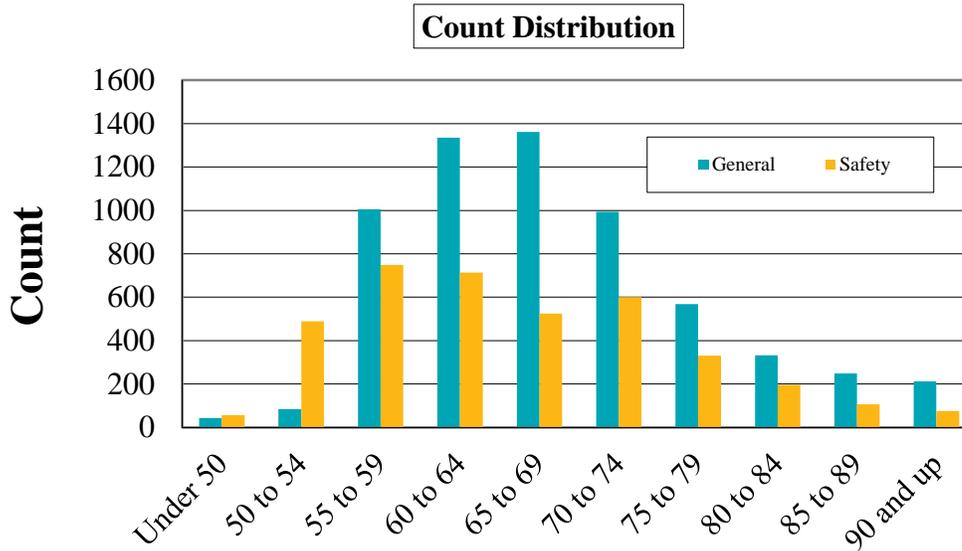


**SDCERS-CITY OF SAN DIEGO  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Table A-16  
SDCERS - City of San Diego  
Distribution of Retirees (Includes DROP Participants),  
Disabled, and Beneficiaries  
as of June 30, 2018**

<u>Age</u>	<u>Count</u>		<u>Total</u>
	<u>General</u>	<u>Safety</u>	
Under 50	44	57	101
50 to 54	84	489	573
55 to 59	1,005	749	1,754
60 to 64	1,335	713	2,048
65 to 69	1,361	525	1,886
70 to 74	993	600	1,593
75 to 79	568	331	899
80 to 84	332	196	528
85 to 89	249	106	355
90 and up	212	75	287
<b>Total</b>	<b>6,183</b>	<b>3,841</b>	<b>10,024</b>

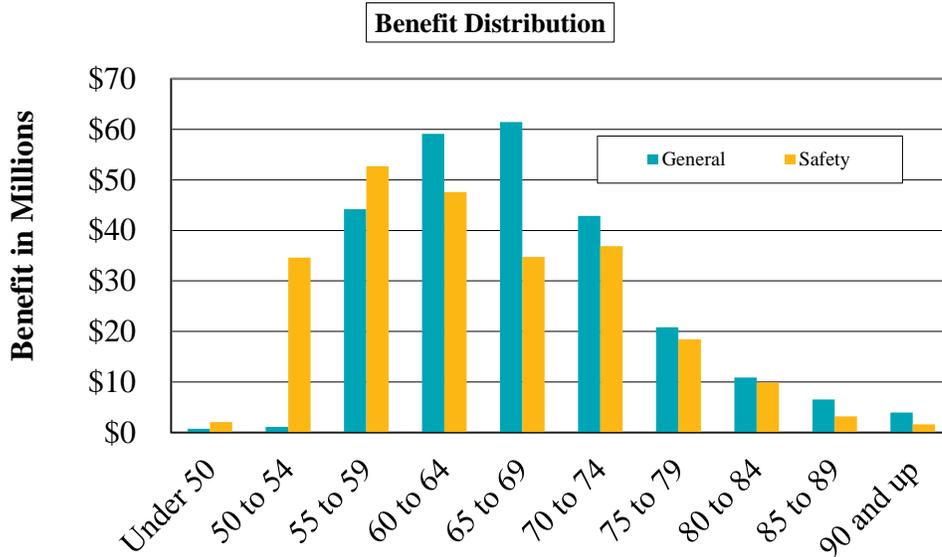


**SDCERS-CITY OF SAN DIEGO  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Table A-17  
SDCERS - City of San Diego  
Distribution of Retirees (Includes DROP Participants),  
Disabled, and Beneficiaries  
as of June 30, 2018**

<u>Age</u>	<u>Annual Benefit</u>		
	<u>General</u>	<u>Safety</u>	<u>Total</u>
Under 50	\$ 778,425	\$ 2,065,856	\$ 2,844,281
50 to 54	1,131,814	34,637,849	35,769,663
55 to 59	44,209,415	52,690,336	96,899,750
60 to 64	59,095,659	47,597,583	106,693,242
65 to 69	61,418,253	34,774,323	96,192,576
70 to 74	42,861,156	36,884,210	79,745,366
75 to 79	20,838,983	18,456,682	39,295,665
80 to 84	10,906,319	9,896,501	20,802,820
85 to 89	6,566,884	3,208,813	9,775,697
90 and up	<u>3,978,403</u>	<u>1,627,770</u>	<u>5,606,172</u>
Total	\$ 251,785,310	\$ 241,839,922	\$ 493,625,233



## APPENDIX A – MEMBERSHIP INFORMATION

### Data Assumptions and Practices

In preparing our data, we relied on information supplied by the SDCERS staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. Our methodology for obtaining the data used for the valuation is based upon the following assumptions and practices:

- Benefit service for Actives and Inactives was calculated using “SDCERS Srv Credit.” An adjusted date of hire is retroactively calculated from the valuation date based on benefit service. Purchased Service that has been paid for is already included in the “SDCERS Srv Credit” field. Purchased Service that has been contracted for, but not paid as of the valuation date, is assumed to be paid in full, and this service will be reflected in the projected benefit.
- Valuation Salary will be the maximum of “Current Fiscal Year Pensionable Salary” and an annualized last pay period “Pensionable Salary,” carried forward with assumed salary increases. Historical salaries, “1 Yr Prior Fiscal Year Pensionable Salary,” “2 Yr Prior Fiscal Year Pensionable Salary,” “3 Yr Prior Fiscal Year Pensionable Salary,” and “4 Yr Prior Fiscal Year Pensionable Salary,” are considered in the calculation of the projected benefit.
- Actives with “Employment Type” equal to “Half Time” or “3/4 Time” are assumed to accrue service based on employment type (i.e., ½ year, ¾ year) for each future plan year; therefore, Valuation Salary is adjusted to a full time equivalent.
- “Contrib Rate” was updated to reflect the new contribution rates for active employees. If the “Contrib Rate” was not provided, the prior year contribution for the member was used to update and reflect the new rate.
- For accounts having duplicate records in the Actives and Inactives by Social Security Number, the information from the latest payroll date is regarded as most up to date. The other record is treated as out of date and invalid.
- Records on the provided “Member” file are considered to be Active if they have no “Death Date,” no “Separation Date,” do not have a retiree record and they received pay in the last pay period (Last Pay Period = 26 or 27) of the current FY.
- Records on the “Member” file are considered to be Inactive if they do not have a “Death Date,” do not have a retiree record, and either have a “Separation Date” or have a “Last Pay Period” earlier than the last pay period of the current FY.
- For Inactives, the “Highest Pensionable Salary” as provided in a supplemental file was used for calculating projected benefits as applicable. If a participant was not provided in the supplemental file, the maximum of the annualized pay over the prior year and the last four fiscal years’ pensionable salaries was used.

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**APPENDIX A – MEMBERSHIP INFORMATION**

- We assume that any active member found in the inactive data last year has returned to work and should be valued as active.
- Records on the “Payee” file are considered in pay status if their benefit is not suspended.
- For duplicate records (based on SSN and Benefit Type) in the payee file, records having the same plan and same benefit type but different benefit amounts, we have added those benefit amounts together.
- Pension Benefit for retirees for each plan was calculated by summing “Monthly Pension,” “Monthly Annuity,” “COLA Annuity,” “Surv Spouse Annuity,” and “COLA Pension” and subtracting “DRO Reduction Amt.” The “DRO Reduction Amt” field is mainly for Qualified Domestic Relations Order purposes. The “13<sup>th</sup> Check Supplement Amount” field is added as an annual benefit and the “Corbett Supplement” is annualized for new retirees in the City only. It is assumed the payment is annual for retirees already in pay status prior to this valuation.
- Members retiring since the prior valuation date and not having a “13<sup>th</sup> Check Supplement Amount” will have their projected “13<sup>th</sup> Check Supplement Amount” calculated assuming \$30 multiplied by the “13<sup>th</sup> Check Supplement Years,” provided they are eligible based on “13<sup>th</sup> Check Supplement Years.”
- Payees’ “COLA Pension” and “Star COLA Pension” do not include a COLA as of July 1, 2018. These COLA increases were provided in a supplemental file and incorporated into the benefit amounts.
- Members may retire and receive benefits from multiple Plans (e.g., a City Police Officer could have also worked for the Airport Authority); we will value each Member’s blended benefit individually. This will result in the counts being slightly higher than actual counts due to people having more than one benefit payable from multiple plans.
- We assume any retiree found in last year’s “Payee” file and not in this year’s file has died without a beneficiary and should be removed from the valuation data.
- We assume all deceased retirees with payments continuing to a beneficiary have already been accounted for in the “Payee” file.
- We exclude any payee receiving \$0.00 from a blended benefit plan.
- The Final 415 Regulations were used to calculate the present value of Member benefits over the Internal Revenue Service Code 415 Benefit Limits.

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**A. Actuarial Assumptions**

The SDCERS Board has the authority to select economic and demographic assumptions for the plan. The investment return, inflation and COLA assumptions reflect the results of an economic experience study performed by Cheiron and presented to the SDCERS Board in September 2017. All other assumptions reflect the results of a full experience study performed by Cheiron covering the period July 1, 2010 through June 30, 2015, and adopted by the SDCERS Board in September 2016.

For fiscal year 2019, the general salary increases from the May 22, 2018 Memorandum from the City of San Diego are reflected in the results for this valuation. For fiscal year 2020, per the December 5, 2017 agreement between the City of San Diego and the San Diego Police Officers Association, the salary increases are not reflected in the assumptions for this valuation, except in projecting total payroll to FY 2020 for the purpose of determining the Normal Cost portion of the ADC.

**1. Investment Return**

SDCERS' assets are assumed to earn 6.50% net of investment expenses.

**2. Inflation Rate**

An inflation assumption of 3.05% compounded annually is used for projecting the total annual payroll growth for amortization of the UAL (except for the City non-Police tiers, which is amortized in level dollar amounts).

**3. Administrative Expense**

Administrative expenses are assumed to be \$12,082,188 for FY 2020 (assuming payment at the beginning of the year), increasing by 2.50% annually.

**4. Interest Credited to Member Contributions**

6.50%, compounded annually.

**5. Salary Increase Rate**

Inflation component: 3.05% (Freezes were assumed for FYs 2013 - 2018).

The additional merit component:

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

<b>Table B-1</b>		
<b><u>Years of Service at Valuation Date</u></b>	<b><u>General</u></b>	<b><u>Safety</u></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%

**6. Cost-of-Living Increase in Benefits**

Assumed to be 1.9% per annum, compounded.

**7. COL Annuity Benefit**

For both active and terminated vested Members, the actuarial liability for the COL annuity benefit is valued by adding one-sixth of accumulated member contribution accounts. For active Members, the normal cost of the COL annuity benefit is equal to one-sixth of the employee contribution rate.

Members under the Elected, City Police 2012 No COL Plan, and City Police Prop B Plan do not receive a COL annuity benefit.

**8. 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. However, such offsets are not directly reflected in either the employee contributions or related refund calculations.

100% of non-vested and 0% of vested deferred Members are assumed to elect a refund of Member contributions at termination.

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**9. Rates of Termination**

<b>Table B-2 SDCERS - City of San Diego Rates of Termination</b>		
<u>Service</u>	<u>General</u>	<u>Safety</u>
0	10.00%	10.00%
1	9.00	8.00
2	8.50	6.00
3	7.50	5.00
4	6.50	4.00
5	5.50	3.00
6	4.50	2.75
7	4.25	2.50
8	4.00	2.25
9	3.25	2.00
10	2.75	1.80
11	2.75	1.80
12	2.75	1.80
13	2.75	1.80
14	2.75	1.80
15	2.75	1.60
16	2.75	1.60
17	2.75	1.60
18	2.75	1.60
19	2.75	1.60
20+	2.75	1.50

20% of terminating employees, with 10+ years of service at termination (4+ years of service for Elected), are assumed to subsequently work for a reciprocal employer and receive 3.55% pay increases per year.

No terminations are assumed once retirement eligible.

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APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

10. Rates of Disability

**Table B-3**  
**SDCERS - City of San Diego**  
**Rates of Disability at Selected Ages**

<u>Age</u>	<u>General</u>	<u>Safety</u>
20	0.01%	0.15%
25	0.02	0.18
30	0.03	0.20
35	0.04	0.27
40	0.05	0.37
45	0.08	0.47
50	0.15	0.57
55	0.20	0.67
60	0.30	--

75% of the General and Elected disabilities and 90% of the Safety disabilities are assumed to be industrial disability retirements. Non-industrial disability retirement is subject to a service requirement.

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**11. Rates of Mortality for Active Lives**

Active Members use the CalPERS Pre-Retirement Mortality Table base rates from the CalPERS January 2014 experience study, projected 20 years from the 2009 base year using a variation of Scale MP-2015 from the Society of Actuaries. The scale was modified using the Society of Actuaries’ model implementation tool with rates converging to the ultimate rate in 2019 (instead of 2029) and an ultimate rate of improvement of 0.75% (instead of 1.0%) up to age 85 and decreasing to 0.60% (instead of 0.85%) at age 95.

Sample rates are as follows (including mortality improvement projection):

<b>Table B-4</b>		
<b>SDCERS - City of San Diego</b>		
<b>Rates of Mortality for Active Lives at Selected Ages</b>		
	<b>General and Safety</b>	
<b><u>Age</u></b>	<b><u>Male</u></b>	<b><u>Female</u></b>
20	0.02%	0.02%
25	0.03	0.02
30	0.04	0.02
35	0.05	0.03
40	0.06	0.04
45	0.09	0.06
50	0.13	0.09
55	0.21	0.14
60	0.31	0.19
65	0.42	0.27
70	0.58	0.38

50% of active Member deaths for Safety Members are assumed to be industrial and all active Member deaths for General and Elected Members are assumed to be non-industrial deaths.

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**12. Rates of Mortality for Retired Healthy Lives & Terminated Vested Members**

Retired healthy and terminated vested Members use the CalPERS Post-Retirement Healthy Mortality Table base rates from the CalPERS January 2014 Experience Study, with a 10% increase to female rates, projected 20 years from the 2009 base year using a variation of Scale MP-2015 from the Society of Actuaries. The scale was modified using the Society of Actuaries' model implementation tool with rates converging to the ultimate rate in 2019 (instead of 2029) and an ultimate rate of improvement of 0.75% (instead of 1.0%) up to age 85 and decreasing to 0.60% (instead of 0.85%) at age 95.

Sample rates are as follows (including mortality improvement projection):

<b>Table B-5 SDCERS - City of San Diego Rates of Mortality for Retired Healthy Lives at Selected Ages</b>		
<u>Age</u>	<u>Male</u>	<u>Female</u>
40	0.09%	0.09%
45	0.18	0.19
50	0.42	0.46
55	0.54	0.45
60	0.71	0.50
65	0.88	0.67
70	1.44	1.13
75	2.42	1.98
80	4.30	3.38
85	7.76	6.13
90	13.54	11.42

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**13. Rates of Mortality for Retired Disabled Lives**

Disabled Members use the CalPERS Work-Related Disability Mortality Table base rates from the CalPERS January 2014 Experience Study, projected 20 years from the 2009 base year using a variation of Scale MP-2015 from the Society of Actuaries. The scale was modified using the Society of Actuaries’ model implementation tool with rates converging to the ultimate rate in 2019 (instead of 2029) and an ultimate rate of improvement of 0.75% (instead of 1.0%) up to age 85 and decreasing to 0.60% (instead of 0.85%) at age 95.

Sample rates are as follows (including mortality improvement projection):

<b>Table B-6</b>		
<b>SDCERS - City of San Diego</b>		
<b>Rates of Mortality for Disabled Lives at Selected Ages</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
40	0.19%	0.17%
45	0.26	0.24
50	0.42	0.42
55	0.54	0.41
60	0.75	0.54
65	1.19	0.86
70	1.80	1.44
75	3.11	2.42
80	5.41	4.14
85	8.55	6.64

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**14. Rates of Retirement**

Rates of Retirement for City General and City Safety are shown in the two tables below. Retirement rates include both service retirements and entry into DROP.

<b>Table B-7 SDCERS - City of San Diego Rates of Retirement by Age and Service</b>				
<b>Service</b>	<b>General - All Plans</b>		<b>Safety - All Plans</b>	
	<b>Prior to age 62</b>	<b>Age 62 or greater</b>	<b>Prior to age 55</b>	<b>Age 55 or greater</b>
10	--	45.0%	--	45.0%
11	--	40.0	--	40.0
12	--	40.0	--	40.0
13	--	40.0	--	40.0
14	--	40.0	--	40.0
15	--	40.0	--	35.0
16	--	43.0	--	35.0
17	--	46.0	--	35.0
18	--	49.0	--	35.0
19	--	52.0	--	35.0
20	50.0	55.0	25.0	50.0
21	35.0	40.0	30.0	45.0
22	37.5	40.0	35.0	45.0
23	40.0	40.0	40.0	45.0
24	42.5	40.0	45.0	45.0
25	45.0	40.0	50.0	45.0
26	47.5	40.0	55.0	45.0
27	47.5	40.0	60.0	45.0
28	47.5	40.0	65.0	45.0
29	47.5	40.0	65.0	45.0
30	55.0	40.0	100.0	100.0
31	57.5	40.0	100.0	100.0
32	60.0	40.0	100.0	100.0
33	62.5	40.0	100.0	100.0
34	65.0	40.0	100.0	100.0
35+	100.0	100.0	100.0	100.0

<b>Table B-8 SDCERS - City of San Diego Rates of Retirement by Age for General 2009 Plan</b>	
<b>Age</b>	<b>Rates</b>
55	3.0%
56	3.0
57	3.0
58	5.0
59	5.0
60	10.0
61	15.0
62	20.0
63	30.0
64	40.0
65	50.0
66	50.0
67	50.0
68	50.0
69	50.0
70	100.0

All members are assumed to retire at the later of current age or age 70, regardless of service.

For terminated vested Members, we assume that retirement will occur provided they have at least 10 years of service on the later of attained age or:

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

General 2009 Members: Age 65.

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

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

<b>Table B-9 SDCERS - City of San Diego Rates of Retirement at Selected Ages</b>	
<u>Age</u>	<u>Elected Officials</u>
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 terminated vested City 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 at least eight years of service.

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

**15. Family Composition**

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.

Actual data is used for current pensioners, if available.

## APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

### 16. 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.

### 17. 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 participants without sufficient data or service, accumulated participant contribution balances, with interest, were used as the actuarial liability.

### 18. 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 2½ years and an interest crediting rate of 2.7%. Thereafter, it was assumed the account balance would be converted to an annuity at an interest rate of 3.0% 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. The liability for pre-2006 DROP account balances still left on account was valued assuming they would be paid out until age 70½, with an interest crediting rate of 2.7%. The liability for the remaining account balances was adjusted based on the DROP annuity rate in effect at the Member's benefit effective date.

These adjustments are applied to the DROP account balance values provided in the financial statements. The account balance liability is allocated to each individual Tier (e.g., General) based on the total amount of the DROP account balances for that Tier in the valuation data.

### 19. Other

The contribution requirements and benefit values of a plan are calculated by applying actuarial assumptions to the benefit provisions and Member information furnished, using the actuarial funding methods described in this 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

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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

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.

**20. Changes Since Last Valuation**

In September 2017, the SDCERS Board voted to reduce the discount rate from 6.75% to 6.50% for the 2018 valuation.

Effective January 1, 2019, the DROP interest crediting rate used to value the liability for account balances is increased from 2.0% to 2.7%, and the DROP annuity rate is increased from 2.8% to 3.0%, to reflect the Board's adoption of these rates at its November 2018 meeting.

**B. Actuarial Methods**

**1. Actuarial Funding Method**

The Entry Age Normal funding method was used for active employees, whereby the normal cost rate is computed as the average level annual percent of pay required to fund the retirement benefits for all Members between their dates of hire and assumed dates of retirement. The EAN actuarial liability is the difference between the Plan's total present value of future benefits and the present value of future normal costs, calculated for each sub-group (e.g., General). The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets, and is allocated to each sub-group based on its liability.

The unfunded actuarial liability is amortized by annual payments. For the non-Police portion of the Plan, the UAL payments are determined as level dollar amounts. For the Police portion of the Plan, the payments are determined as a level percentage of pay, assuming payroll increases of 3.05% per year. The UAL is amortized over various closed periods. The UAL as of June 30, 2007 is amortized over 20 years. Subsequent gains and losses are amortized over 15 years, changes in assumptions over 30 years, and changes in benefits over five years. The non-Police portion of the UAL as of June 30, 2012 is amortized over 15 years. Funding surplus, if any, is amortized over 30 years.

Effective with the June 30, 2017 valuation, the remaining balances of the 2009 experience loss and 2012 non-Police UAL were re-amortized using a 5-year layering approach, in which one-fifth of the remaining balance continues to be amortized over the same period, while each additional one-fifth is amortized over an additional year. For details, see Table IV-2.

Finally, if necessary, there is an additional UAL cost component to ensure that there is no negative amortization in any year.

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Expected administrative expenses are included in the actuarially determined contribution (ADC). The administrative expense component is \$12,082,188 for FY 2020 (assuming payment at the beginning of the year). This amount is assumed to increase by 2.5% per year.

**2. Asset Valuation Method**

For the purposes of determining the City of San Diego’s actuarially determined contribution to SDCERS, we use a smoothed actuarial value of assets. The asset smoothing method dampens the volatility in asset values that could occur because of the fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process. Assets are assumed to be used exclusively for the provision of retirement benefits and expenses.

The actuarial value of assets is equal to 100% of the *expected actuarial value of assets\** plus 25% of the difference between the current market value of assets and the expected actuarial value of assets. In no event will the actuarial value of assets ever be less than 80% of the market value of assets nor greater than 120% of the market value of assets.

**3. Changes Since Last Valuation**

None.

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\* *The expected actuarial value of assets is equal to the prior year’s actuarial value of assets increased with actual contributions made, decreased with actual disbursements made, all items (prior assets, contributions and disbursements) further adjusted with expected investment returns for the year.*

## APPENDIX C – SUMMARY OF PLAN PROVISIONS

### 1. Membership Requirement

Membership is mandatory from the first day of employment with the City, for all full, three-quarter, and half-time classified employees initially hired between July 1, 1991 and July 19, 2012 and for any unclassified employees initially hired between August 11, 1993 and July 19, 2012 (§24.0104).\*

Membership is mandatory from the first day of employment for Police Recruits hired between July 1, 1991 and June 30, 2016 and for all sworn Police Officers initially hired on or after July 1, 1991 (City Charter §140).

As a result of Proposition B, new employees (other than sworn Police) initially hired on or after July 20, 2012 will not participate in SDCERS.

### 2. Monthly Salary Base for Benefits

*General and Safety Old Plan Members:*

Highest consecutive 12-month average in any qualified employment with a California governmental jurisdiction (§24.0103), subject to a 10% increase for those who joined the system before July 1, 2002, if the General or Safety Member elects such increase in lieu of an increased benefit formula (§24.0402 and §24.0403).

*General-2009 Plan Members:*

Average of highest three years in any qualified employment with a California governmental jurisdiction (§24.0103).

*Police-2009 Plan Members:*

Highest consecutive 12-month average in any qualified employment with a California governmental jurisdiction (§24.0103).

*Lifeguard-2011 Plan, Fire-2012 Plan, Police-2012 Plan, Police-2012 No COL Plan, and Police-Prop B Plan Members:*

Average of highest three years in any qualified employment with a California governmental jurisdiction (§24.0103).

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\* All “§” references are to the City of San Diego Municipal Code.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

**3. Service Retirement**

**Eligibility**

*General Members:*

Age 62 with 10 years of service, or age 55 with 20 years of service (§141 of City Charter).

*Safety Members (includes Fire, Lifeguard, and Police):*

Age 55 with 10 years of service, or age 50 with 20 years of service (§141 of City Charter).

*Elected Officers:*

Age 55 with 4 years of service. Eligible to retire at any age with 8 years of service, however, benefit is reduced by 2% per year for each year under age 55 (§24.1705).

**Benefit**

The basic formula used to calculate monthly retirement allowances for all membership categories is: Retirement Factor X Final Average Compensation X Years of Service Credit.

*General Members:*

For General-Old Plan Members, choice of factors in place on June 30, 2000 (Option 1), or factors effective as of July 1, 2000 (Option 2), or factors in effect as of July 1, 2002 (Option 3), with a benefit cap of 90% of Final Average Compensation unless an exception to the 90% cap applies (§24.0402).

For General-2009 Plan Members, factors shown in Table C-1 (§24.0402.1).

There is an additional amount equal to the annuitized Member COL Annuity contributions at retirement date.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**General Member Service Retirement Accrual Factors**

<b>Table C-1</b>				
<b>SDCERS - City of San Diego</b>				
<b>General Member Service Retirement Accrual Factors</b>				
<b>Retirement</b>	<b>Hired Before July 1, 2009</b>			<b>Hired on or After</b>
<b>Age</b>	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	<b>July 1, 2009</b>
55	2.00%	2.25%	2.50%	1.00%
56	2.00%	2.25%	2.50%	1.25%
57	2.00%	2.25%	2.50%	1.65%
58	2.00%	2.25%	2.50%	1.758%
59	2.08%	2.25%	2.50%	1.874%
60	2.16%	2.30%	2.55%	2.00%
61	2.24%	2.35%	2.60%	2.12%
62	2.31%	2.40%	2.65%	2.24%
63	2.39%	2.45%	2.70%	2.36%
64	2.47%	2.50%	2.75%	2.46%
65 and up	2.55%	2.55%	2.80%	2.60%

*Elected Officers:*

The retirement factor for Elected Officers is 3.5% (§24.1706). A 2% annual reduction factor applies to benefits for Members retiring prior to age 55 (§24.1705).

*Safety Members:*

For all Safety-Old Plan Members, choice of factors in place on June 30, 2000 (Option 1), or factors effective as of July 1, 2000 (Option 2), with a benefit cap of 90% of Final Average Compensation unless an exception to the 90% cap applies (§24.0403).

For Police-2009 Plan, Lifeguard-2011 Plan, Fire-2012 Plan, Police-2012 Plan, Police-2012 No COL Plan, and Police-Prop B Plan Members, formula shown in Table C-2 (§24.0403).

There is an additional amount equal to the annuitized Member COL Annuity contributions at retirement date, with the exception of Police-2012 No COL Plan and Police-Prop B Plan Members.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**Safety Member Service Retirement Accrual Factors**

<b>Table C-2</b>				
<b>SDCERS - City of San Diego</b>				
<b>Safety Member Service Retirement Accrual Factors</b>				
	<b>Police Hired Before July 1, 2009 Lifeguard Hired Before July 1, 2011 Fire Hired Before January 1, 2012</b>			<b>Police-2009 Lifeguard-2011 Fire-2012</b>
<b>Retirement</b>	<b>Police &amp; Fire</b>	<b>Lifeguard</b>	<b>Safety</b>	<b>Police-2012</b>
<b>Age</b>	<b>Option 1</b>	<b>Option 1</b>	<b>Option 2</b>	<b>Police Prop B</b>
50	2.50%	2.20%	3.00%	2.50%
51	2.60%	2.32%	3.00%	2.60%
52	2.70%	2.44%	3.00%	2.70%
53	2.80%	2.57%	3.00%	2.80%
54	2.90%	2.72%	3.00%	2.90%
55 and up	2.99%	2.77%	3.00%	3.00%

For vested Members who terminate City employment, different retirement accrual factors may apply depending on which options were available at the time of termination.

For Members of the General-2009 Plan who terminate City employment, the accrual factors are those shown in Tables C-1. For Members of the Police-2009 Plan, Lifeguard-2011 Plan, Fire-2012 Plan, Police-2012 Plan, Police-2012 No COL Plan, and Police-Prop B Plan who terminate City employment, the accrual factors are those shown in Table C-2. For General-Old Plan and Safety-Old Plan Members, the accrual factors are as shown in Tables C-3 and C-4:

GENERAL:

<b>Table C-3</b>	
<b>SDCERS - City of San Diego</b>	
<b><u>For Vested Members who terminated--</u></b>	<b><u>--the accrual factors are--</u></b>
Prior to January 1, 1997	See Table C-5
January 1, 1997 - June 30, 2000	Option 1 without 10% increase in Final Average Compensation
July 1, 2000 - June 30, 2002	Option 1 with 10% increase in Final Average Compensation; or Option 2
July 1, 2002 - Present	Option 3

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

SAFETY:

Table C-4 SDCERS - City of San Diego	
<b><u>For Vested Members who terminated--</u></b>	<b><u>--the accrual factors are--</u></b>
Prior to January 1, 1997	See Table C-5
January 1, 1997 - June 30, 2000	Option 1 without 10% increase in Final Average Compensation
July 1, 2000 - Present	Option 1 with 10% increase in Final Average Compensation; or Option 2

Table C-5 SDCERS - City of San Diego Pre-1997 Member Service Retirement Accrual Factors				
	General	Safety		
<u>Age</u>		<u>Police</u>	<u>Fire</u>	<u>Lifeguard</u>
50	--	2.50%	2.20%	2.00%
51	--	2.54%	2.32%	2.10%
52	--	2.58%	2.44%	2.22%
53	--	2.62%	2.57%	2.34%
54	--	2.66%	2.72%	2.47%
55	1.48%	2.70%	2.77%	2.62%
56	1.55%	2.77%	2.77%	2.62%
57	1.63%	2.77%	2.77%	2.62%
58	1.72%	2.77%	2.77%	2.62%
59	1.81%	2.77%	2.77%	2.62%
60	1.92%	2.77%	2.77%	2.62%
61	1.99%	2.77%	2.77%	2.62%
62	2.09%	2.77%	2.77%	2.62%
63	2.20%	2.77%	2.77%	2.62%
64	2.31%	2.77%	2.77%	2.62%
65 and up	2.43%	2.77%	2.77%	2.62%

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**Maximum Benefit**

*General-Old Plan Members:* 90% of Final Average compensation if Option 3 is chosen, unless an exception to the 90% cap applies.

*General-2009 Plan Members:* 80% of Final Average compensation.

*Safety-Old Plan Members:* 90% of Final Average Compensation.

*Police-2009 Plan, Lifeguard-2011 Plan, Fire-2012 Plan, Police-2012 Plan and Police-2012 No COL Plan Members:* 90% of Final Average compensation.

*Police-Prop B Plan Members:* 80% of Final Average compensation, with 3% reduction for each year if retiring earlier than age 55.

*Elected Officers:* None.

**Unmodified Form of Payment**

Monthly payments continued for the life of the Member, with 50% continuance to the eligible spouse upon Member's death. If there is no eligible spouse at the time of retirement, the Member may receive either a lump sum payment equal to the accumulated surviving spouse contributions or an actuarially equivalent annuity (§24.0601).

**Note:** City employees withdrew from Social Security effective January 1, 1982. We assume that all future benefits for active Members will be determined on a non-integrated basis.

**Note:** Effective July 1, 1991, service credit earned under the 1981 Pension System will be considered equivalent to SDCERS service for the purpose of benefit calculations (i.e., the above formulas will apply to 1981 Pension System service) (§24.1102, 24.0210, 24.0310).

**4. Non-Industrial Disability**

**Eligibility**

Ten years of service (Charter §141).

**Benefit**

*General Members:*

Greater of 1.5% per year of service, one-third of final compensation, or the earned service retirement benefit (§24.0502, §24.0505).

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

*Safety Members:*

Greater of 1.8% per year of service, one-third of final compensation, or the earned service retirement benefit (§24.0502, §24.0504).

*Elected Officers:*

Earned service retirement benefit (§24.1707).

**5. Industrial Disability**

**Eligibility**

No age or service requirement (§24.0501).

**Benefit**

*General Members:*

Greater of one-half of final compensation, or the earned service retirement benefit if eligible. (§24.0502, §24.0505).

*Safety Members:*

Greater of one-half of final compensation, or the earned service retirement benefit if eligible. (§24.0502, §24.0503).

*Elected Officers:*

Earned service retirement benefit (§24.1707).

**6. Non-Industrial Active Death Before Eligible to Retire**

Refund of employee contributions with interest, plus one month's salary for each completed year of service, to a maximum of six months' salary (§24.0702).

**7. Non-Industrial Active Death After Eligible to Retire for Service**

50% of earned benefit payable to surviving eligible spouse, domestic partner, or dependent child under 18 years of age (§24.0704).

**8. Industrial Active Death**

50% of the final average compensation preceding death, payable to eligible spouse, domestic partner, or dependent child under 18 years of age (§24.0705).

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**9. Death After Retirement**

Continuance to surviving beneficiary depending on benefit selection made at retirement (§24.0601).

\$2,000 payable in lump sum to the beneficiary or the estate of the retiree. (§24.0710).

**10. Withdrawal Benefits (§24.0206, §24.0306)**

**Pre-12/8/76 Hires**

If contributions left on deposit, entitled to earned benefits, commencing any time after eligible to retire.

**Post-12/7/76 Hires**

*Less than ten years of service:*

Refund of accumulated employee contributions with interest, or may keep deposits in the System and earn additional interest and use service with a reciprocal system to establish eligibility for earned benefits upon concurrent retirement from reciprocal system (§24.0206, 24.0306, 24.1005).

*Ten or more years of service:*

If contributions left on deposit, entitled to earned benefits commencing any time after eligible to retire (§24.0206, 24.0306).

**11. Post-retirement Cost-of-Living Adjustment Benefit**

*General and Safety Members:*

Based on changes in Consumer Price Index, to a maximum of 2% per year (§24.1505).

**12. COL Annuity**

Actuarial equivalent of accumulated contributions in cost-of-living annuity account at time of retirement (§24.0103).

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**13. Member Contributions**

Member contributions vary by age at time of entrance into SDCERS (§24.0201, §24.0301), and were recalculated following the experience study in 2016 based on the then current actuarial assumptions, in accordance with the requirement in San Diego City Charter Section 143 for “substantially equal” employer and employee contributions. Member contributions have subsequently been adjusted in 2017 and 2018 for economic assumption changes. Table C-6 and Table C-7 contain the contribution rates by Plan.

<b>Table C-6</b>					
<b>SDCERS - City of San Diego</b>					
<b>General Member Contribution Rates</b>					
<u>Entry Age</u>	<u>GENERAL</u>		<u>Entry Age</u>	<u>GENERAL</u>	
	<u>Hired Before 7/1/2009</u>	<u>Hired On or After 7/1/2009</u>		<u>Hired Before 7/1/2009</u>	<u>Hired On or After 7/1/2009</u>
20	9.14%	5.06%	40	12.39	10.63
21	9.26	5.30	41	12.48	10.88
22	9.45	5.56	42	12.58	11.11
23	9.68	5.83	43	12.88	11.37
24	9.92	6.10	44	13.12	11.61
25	10.16	6.38	45	13.35	11.86
26	10.37	6.66	46	13.56	12.09
27	10.60	6.95	47	13.74	12.32
28	10.85	7.24	48	13.90	12.53
29	11.08	7.55	49	14.04	12.73
30	11.31	7.85	50	14.17	12.91
31	11.53	8.16	51	14.26	13.07
32	11.73	8.46	52	14.34	13.19
33	11.92	8.77	53	14.18	13.28
34	12.09	9.08	54	13.97	13.32
35	12.37	9.38	55	13.68	13.18
36	12.31	9.67	56	13.41	12.89
37	12.26	9.93	57	13.15	12.61
38	12.24	10.16	58	13.15	12.61
39	12.29	10.40	59	13.15	12.61

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

Table C-7  
SDCERS - City of San Diego  
Safety Member Contribution Rates

Entry Age	FIRE		LIFEGUARD		POLICE				
	Hired Before 1/1/2012	Hired On or After 1/1/2012	Hired Before 7/1/2011	Hired On or After 7/1/2011	Hired Before 7/1/2009	Hired On or After 7/1/2009 and Before 1/1/2012	Hired On or After 1/1/2012 and and Before 8/2/2012	Hired On or After 8/2/2012 and and Before 7/1/2013	Hired On or After 7/1/2013
20	15.46%	13.47%	15.66%	13.47%	15.46%	13.69%	13.47%	11.29%	10.19%
21	15.59	13.87	15.78	13.87	15.59	14.09	13.87	11.64	10.64
22	15.86	14.23	16.05	14.23	15.86	14.45	14.23	11.93	11.17
23	16.19	14.57	16.34	14.57	16.19	14.80	14.57	12.22	11.73
24	16.52	14.92	16.64	14.92	16.52	15.17	14.92	12.52	12.34
25	16.84	15.26	16.94	15.26	16.84	15.51	15.26	12.81	12.85
26	17.16	15.61	17.22	15.61	17.16	15.86	15.61	13.09	13.23
27	17.47	15.95	17.48	15.95	17.47	16.21	15.95	13.38	13.57
28	17.76	16.29	17.71	16.29	17.76	16.55	16.29	13.67	13.87
29	18.04	16.62	17.91	16.62	18.04	16.89	16.62	13.95	14.16
30	18.30	16.95	18.08	16.95	18.30	17.22	16.95	14.22	14.44
31	18.42	17.30	17.98	17.30	18.42	17.58	17.30	14.51	14.74
32	18.61	17.59	17.91	17.59	18.61	17.88	17.59	14.76	15.00
33	18.85	17.84	17.90	17.84	18.85	18.13	17.84	14.97	15.21
34	19.04	18.04	17.96	18.04	19.04	18.33	18.04	15.13	15.39
35	19.26	18.26	18.15	18.26	19.26	18.56	18.26	15.32	15.58
36	19.51	18.50	18.39	18.50	19.51	18.80	18.50	15.52	15.78
37	19.80	18.76	18.64	18.76	19.80	19.07	18.76	15.74	16.02
38	20.10	19.05	18.94	19.05	20.10	19.36	19.05	15.98	16.27
39	20.41	19.34	19.23	19.34	20.41	19.66	19.34	16.23	16.52
40	20.72	19.64	19.52	19.64	20.72	19.96	19.64	16.48	16.76
41	21.11	20.01	19.88	20.01	21.11	20.33	20.01	16.78	17.08
42	21.45	20.32	20.20	20.32	21.45	20.66	20.32	17.05	17.36
43	21.74	20.61	20.48	20.61	21.74	20.95	20.61	17.29	17.60
44	21.99	20.85	20.71	20.85	21.99	21.19	20.85	17.49	17.80
45	22.27	21.11	20.97	21.11	22.27	21.46	21.11	17.71	18.02
46	21.87	20.73	20.60	20.73	21.87	21.07	20.73	17.39	17.70
47	21.59	20.47	20.34	20.47	21.59	20.80	20.47	17.18	17.48
48	21.30	20.19	20.06	20.19	21.30	20.52	20.19	16.94	17.24
49	20.98	19.88	19.77	19.88	20.98	20.22	19.88	16.68	16.98

**SDCERS-CITY OF SAN DIEGO  
ACTUARIAL VALUATION AS OF JUNE 30, 2018**

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

The employee contribution rates are the sum of four components, three of which are specified in the Municipal Code: a cost-of-living rate (§24.1506(a)), a surviving spouse rate (§24.0601), and, other than Police hired on or after August 2, 2012, a COL Annuity rate (§24.1506(b)). The fourth component is the “substantially equal” rate as defined in San Diego City Charter Section 143, which is 50% of the normal cost of accrued service retirement allowances, payable either immediately or deferred until a later age, when a member leaves employment via termination, disability, or service retirement. Since the cost-of-living rate funds the Member’s portion of the post-retirement cost-of-living benefit, the surviving spouse rate funds the Member’s portion of surviving spouse allowances, and the COL Annuity rate funds the COL Annuity, these benefits are not included in the calculation of the “substantially equal” rate.

All benefits not included in the components described above are paid for entirely by the City. Those benefits paid for entirely by the City include the refund of Member contributions for non-vested terminations, the portion of the disability allowance in excess of the earned service retirement (if any), the 13<sup>th</sup> check benefit, the pre-retirement death benefit for non-vested Members, the pre-retirement industrial death benefit, and the post-retirement \$2,000 lump sum benefit.

The assumptions used to develop the rates were the same as those used in this valuation, except that mortality tables for General Members were blended 50/50 between male and female rates, mortality tables for Safety Members were blended 90/10 between male and female rates, and mortality table for beneficiaries of Safety Members were blended 10/90 between male and female rates.

Elected Officers (General) contribute 9.05% of total salary, regardless of entry age (§24.1704).

#### **14. Internal Revenue Code Limitation**

Benefits provided by SDCERS’ Trust Fund are subject to the limitations set forth in Section 415 of the Internal Revenue Code in accordance with the “grandfather” election in Section 415(b)(10) of the Code (§24.1004).

As of the June 30, 2006 valuation, active participants’ benefit payments were limited by Section 415 of the Internal Revenue Code. As of the June 30, 2007 valuation, all benefit payments were limited by Section 415 of the Internal Revenue Code.

#### **15. Deferred Retirement Option Plan**

Effective April 1, 1997, a deferred retirement option plan (DROP) was created and offered to Members as an alternative method of benefit accrual. Members eligible for service retirement are eligible to participate in DROP, but only those hired before July 1, 2005 may enter the program (§24.1402.1).

## **APPENDIX C – SUMMARY OF PLAN PROVISIONS**

A participant in DROP may leave DROP at any time before the end of his or her designated DROP participation period by voluntarily leaving City employment (§24.1403). The maximum DROP participation period is 60 months, with certain exception for Firefighters (§24.1402).

A DROP participation account is a nominal account established with the Retirement System, which is credited with the following amounts (§24.1404):

- The Member's monthly service retirement allowance, credited monthly, calculated at the date of DROP entry and increased each year by a cost-of-living adjustment.
- The Member's supplemental 13<sup>th</sup> check benefit, if applicable, credited annually.
- 3.05% of base compensation, payable by the City and credited bi-weekly.
- 3.05% of base compensation, payable by the Member and credited bi-weekly.
- Interest credited to the DROP account, as determined by the Board.

When a Member leaves DROP and City employment, they begin to collect their monthly service retirement allowance, their supplemental 13<sup>th</sup> check benefit (if applicable), and the amounts credited to their DROP participation account, payable as a single lump sum distribution, as a 240-month annuity with equal payments, or any other form approved by the Board and subject to applicable provisions of the Internal Revenue Code (§24.1407).

DROP is not intended to jeopardize the tax-qualified status of the retirement system under the rules and regulations of the Internal Revenue Service. Benefits provided under this division are subject to the limitations of Section 415 of the Internal Revenue Code relating to the amount of benefits that can be paid.

### **16. Blended Benefit with Participating Agencies**

Members may retire and receive benefits from multiple Plans (e.g., a City Police Officer could have also worked for the Airport Authority).

### **17. Changes since Last Valuation**

The member contribution rates were updated to reflect the reduction in the discount rate from 6.75% to 6.50%.

**Note:** The summary of major plan provisions is designed to outline principal plan benefits. If the SDCERS staff should find the plan summary not in accordance with the actual provisions, the actuary should immediately be alerted so the proper provisions are valued.

**APPENDIX D – GLOSSARY OF TERMS**

**1. Actuarial Liability**

The Actuarial Liability is the difference between the present value of all future system benefits and the present value of total future normal costs. This is also referred to by some actuaries as the “accrued liability” or “actuarial accrued liability.”

**2. Actuarial Assumptions**

Estimates of future experience with respect to rates of mortality, disability, turnover, retirement rate or rates of investment income and salary increases. Actuarial assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

**3. Accrued Service**

Service credited under the System which was rendered before the date of the actuarial valuation.

**4. Actuarial Equivalent**

A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

**5. Actuarial Cost Method**

A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of a retirement system benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

**6. Actuarial Gain/(Loss)**

The difference between actual experience and actuarial assumption anticipated experience during the period between two actuarial valuation dates.

**7. Actuarial Present Value**

The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

**APPENDIX D – GLOSSARY OF TERMS**

**8. Actuarially Determined Contribution (ADC)**

Contribution determined each year based on the SDCERS Board’s adopted funding policy. The term also exists in GASB 67 and 68 as a contribution determined by the actuary in accordance with Actuarial Standards of Practice, but no further guidance is provided.

**9. Amortization**

Paying off an interest-discounted amount with periodic payments of interest and principal— as opposed to paying off with a lump sum payment.

**10. Normal Cost**

The actuarial present value of retirement system benefits allocated to the current year by the actuarial funding method.

**11. Unfunded Actuarial Liability (UAL)**

The difference between actuarial liability and the actuarial value of assets.

Most retirement systems have unfunded actuarial liability. They arise each time new benefits are added and each time an actuarial loss is realized.

The existence of unfunded actuarial liability is not in itself bad, any more than a mortgage on a house is bad. Unfunded actuarial liability does not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial accrued liability, and the trend in its amount (after due allowance for devaluation of the dollar).



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