

San Diego City Employees' Retirement System

City of San Diego

Actuarial Valuation Report as of June 30, 2017

Produced by Cheiron

December 2017

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December 22, 2017

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, 2017 Actuarial Valuation

Dear Members of the Board:

We are pleased to submit the June 30, 2017 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).

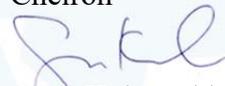
In preparing our report, we relied on information (some oral and some written) supplied by SDCERS' staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness 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



David Holland, FSA, MAAA, EA
Consulting Actuary

cc: Alice Alsberghe, ASA, MAAA

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

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 2019, 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, 2017 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 two significant changes for the June 30, 2017 valuation:

- The discount rate was lowered from 7.00% to 6.75%, and is scheduled to be reduced from 6.75% to 6.50% for the June 30, 2018 Actuarial Valuation.
- A five-year layering method was adopted for certain components of the UAL in order to improve the projected stability of future employer contributions. Under this method, two of the existing UAL bases were each split into five equal layers, with one layer continuing to be amortized over the same period, and each successive layer being amortized over one additional year. Details can be found in Table IV-2 of this report.

The December 5, 2017 agreement between the City of San Diego and the San Diego Police Officers Association is not reflected in this valuation, except in projecting total payroll to FY 2019 for the purpose of determining the Normal Cost portion of the ADC. However, the estimated impact of the agreement, based on our analysis dated November 15, 2017, is reflected in the projections shown on pages 9 and 10 of this report.

All other assumptions and methods remain the same as in the 2016 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.

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 add due to rounding.

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SECTION I – BOARD SUMMARY

B. Experience between June 30, 2016 and June 30, 2017

The following discussion summarizes the key results of the June 30, 2017 valuation and how they compare to the results from the June 30, 2016 valuation.

1. SDCERS-City Assets, Liabilities and Contributions

Table I-1 presents a comparison between the June 30, 2017 and June 30, 2016 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 6.1% compared to the actuarial value of assets increase of 5.5%, the funding ratio decreased slightly from 71.6% as of June 30, 2016 to 71.2% as of June 30, 2017. SDCERS employs a commonly used actuarial smoothing method on the market value that dampens market volatility, so the actuarial value of assets increased by only 5.5% whereas the market value of assets increased by 11.0%. Measuring the funding ratio on a market value of assets basis, the ratio would be 73.2% as of June 30, 2017, resulting in an improvement from a market value funding ratio of 70.0% as of June 30, 2016. Section II-C provides additional information explaining the development of the actuarial value of assets.

There was a decrease in the Actuarially Determined Contribution (ADC), from \$324.5 million to \$322.9 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.

Table I-1				
SDCERS - City of San Diego - Assets, Liabilities and Contributions				
		June 30, 2017	June 30, 2016	% Change
Actuarial Liability	\$	9,565,802,458	\$ 9,013,130,184	6.1%
Actuarial Value Assets	\$	6,808,418,225	\$ 6,455,378,088	5.5%
Unfunded Actuarial Liability-Actuarial Value	\$	2,757,384,233	\$ 2,557,752,096	7.8%
Funding Ratio-Actuarial Value		71.2%	71.6%	-0.4%
Market Value Assets	\$	7,000,219,655	\$ 6,307,412,212	11.0%
Unfunded Actuarial Liability-Market Value	\$	2,565,582,804	\$ 2,705,717,972	-5.2%
Funding Ratio-Market Value		73.2%	70.0%	3.2%
Actuarially Determined Contribution (ADC)	\$	322.9	\$ 324.5	-0.5%

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

SECTION I – BOARD SUMMARY

2. Components of UAL Change between June 30, 2016 and June 30, 2017

The unfunded actuarial liability (UAL) for SDCERS-City of San Diego increased by \$199.6 million; from \$2,557.8 million to \$2,757.4 million. Table I-2 below presents the specific components of the change in the UAL.

The Plan’s UAL was expected to grow by \$6.3 million. The increase in the UAL was driven by the change to the discount rate assumption (\$254.0 million). Net asset experience was favorable, decreasing the UAL by \$100.5 million. There was a relatively small liability experience loss of \$39.9 million, primarily due to salary (promotional increases greater than expected).

Table I-2	
SDCERS - City of San Diego-Change in UAL	
(In Millions)	
1. UAL at June 30, 2016	\$ 2,557.8
2. Expected change in UAL	6.3
3. Asset experience	
a. Anticipated investment loss/(gain)	34.8
b. Actual investment loss/(gain)*	(63.1)
c. Employee contributions paid greater than expected	(2.6)
d. Net asset experience (b - a + c)	(100.5)
4. Liability experience loss*	39.9
5. Change in economic assumptions	254.0
6. Change in amortization method	N/A
7. Other miscellaneous	(0.0)
8. Total change in UAL: 2 + 3d + sum of 4 through 7	199.6
9. UAL at June 30, 2017: 1 + 8	\$ 2,757.4

*Combined impact from experience is an actuarial gain of \$23.2 million (\$63.1 million actual investment gain less \$39.9 million actual liability experience loss).

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

SECTION I – BOARD SUMMARY

3. SDCERS-City Change in Contributions (ADC)

The City’s actuarially determined contribution (ADC) for FY 2019 decreased by \$1.6 million; from \$324.5 million to \$322.9 million. The ADC was expected to increase by \$4.8 million, assuming continued phase-in of investment experience from prior years and no changes in assumptions.

There were two significant offsetting changes which led to a slight overall decrease in the ADC. The discount rate assumption was reduced from 7.00% to 6.75%, which increased the ADC by \$17.5 million. However, the implementation of a five-year layering method for certain components of the UAL (described in detail in Appendix B) decreased the ADC by \$22.5 million.

Two other notable factors affecting the ADC were the net asset experience gain, which decreased the ADC by \$10.3 million, and the liability experience loss, which increased the ADC by \$8.8 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.

Table I-3	
SDCERS - City of San Diego-Change in ADC	
(In Millions)	
1. ADC at June 30, 2016	\$ 324.5
2. Expected change in ADC	4.8
3. Asset experience	
a. Anticipated investment loss/(gain)	3.6
b. Actual investment loss/(gain)	(6.5)
c. Employee contributions paid greater than expected	(0.3)
d. Net asset experience (b - a + c)	(10.3)
4. Liability experience loss	8.8
5. Change in economic assumptions	17.5
6. Change in amortization method	(22.5)
7. Other miscellaneous	0.0
8. Total change in ADC: 2 + 3d + sum of 4 through 7	(1.6)
9. ADC at June 30, 2017: 1 + 8	\$ 322.9

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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 steady, with a decrease of 0.3% from 2016 to 2017. However, there was movement from active and terminated vested to retiree status, with a 4.5% increase in retirees and decreases of 5.3% and 0.5% for active and terminated vested members, respectively. There was a decrease in expected active member payroll of 3.5% driven by the decrease in active members, but the average pay per active member increased by 2.0%. 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 the average.

Note: The payroll figures shown below are the expected amounts for the fiscal year beginning July 1, 2017.

Table I-4				
SDCERS - City of San Diego - Membership Total				
Valuation as of:	June 30, 2017	June 30, 2016	% Change	
Active Counts	6,388	6,748	-5.3%	
Terminated Vested	2,851	2,865	-0.5%	
Disabled	1,161	1,180	-1.6%	
Retirees	7,272	6,961	4.5%	
Beneficiaries	1,335	1,313	1.7%	
Total City Members	19,007	19,067	-0.3%	
Active Member Payroll	\$ 448,889,789	\$ 465,100,254	-3.5%	
Average Pay per Active Member	\$ 70,271	\$ 68,924	2.0%	
Benefits in Pay Status	\$ 470,812,001	\$ 443,788,677	6.1%	
Average Benefit	\$ 48,199	\$ 46,942	2.7%	

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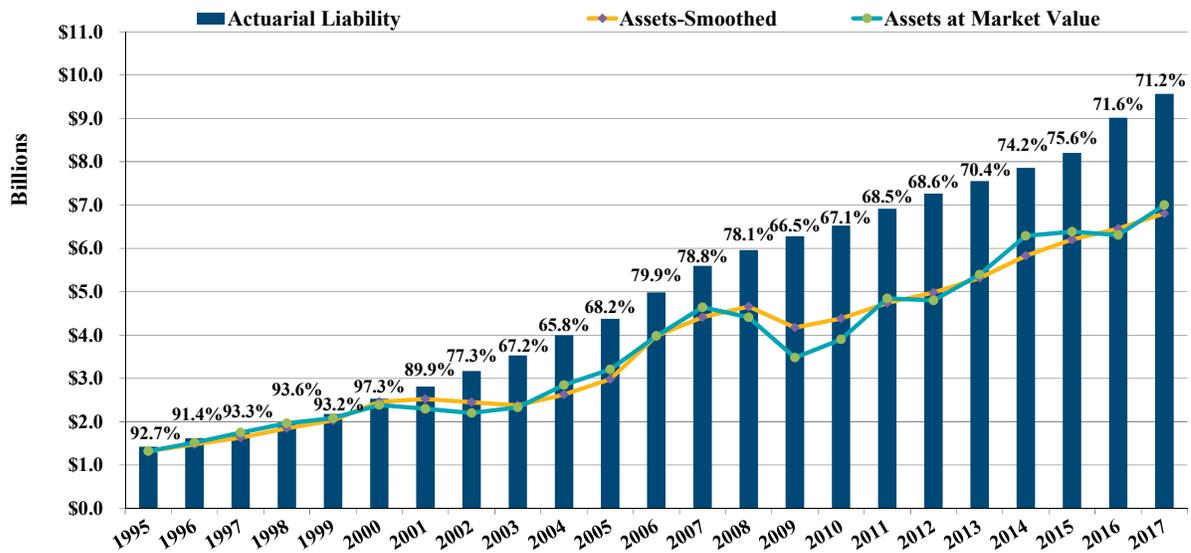
SECTION I – BOARD SUMMARY

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 1995-2017



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%.

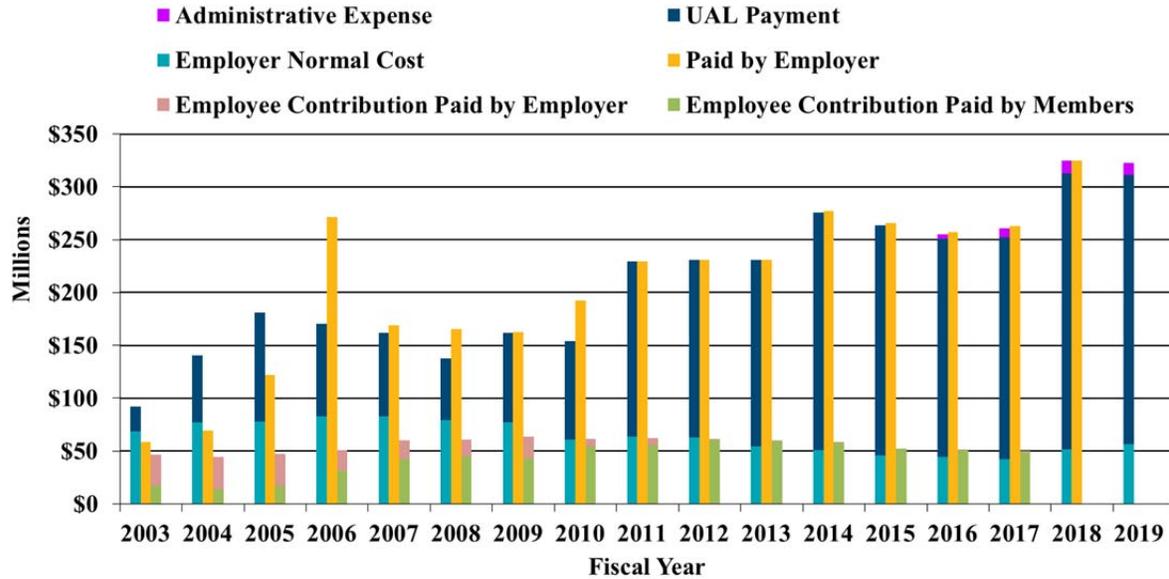
As mentioned earlier, the funding ratios represent the ratio of the smoothed (actuarial) assets over the actuarial liabilities. If the market value of assets were used instead, the funding ratio as of June 30, 2017 would be 73.2%.

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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 2003-2019



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.

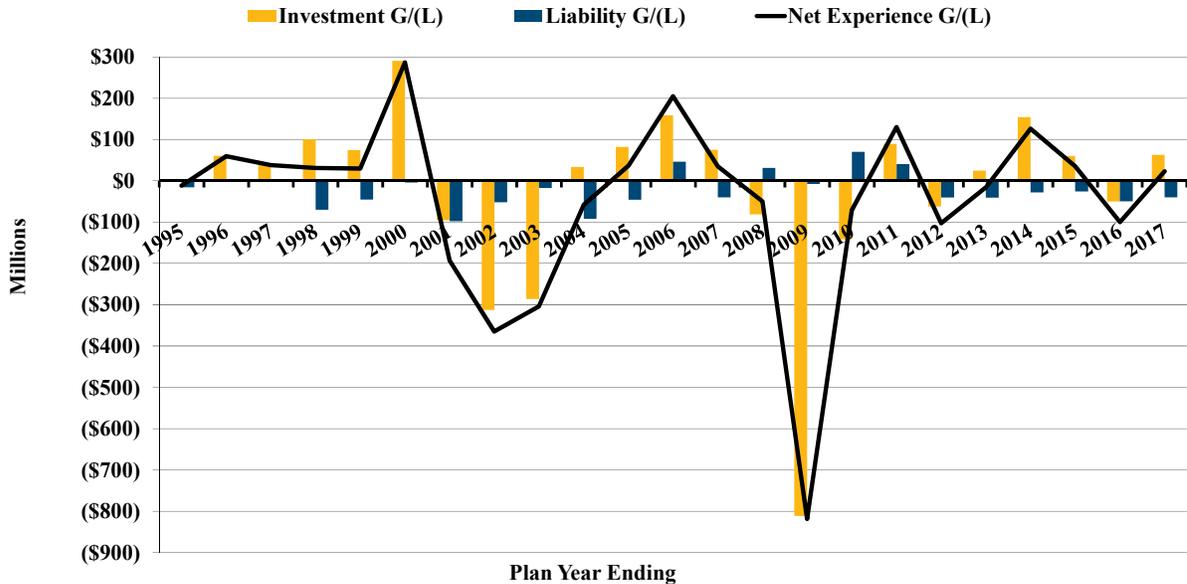
Employee contributions paid by the City and the Members are also shown in this chart. In the earlier years a substantial portion of employee contributions were “offset” (paid for) by the City (pink bars), but such offsets have disappeared almost completely in recent years.

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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) 1995-2017



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. However, since 2011 liability gains or losses have never been more than approximately 0.6% of the total liability.
- The liability experience in 2017 was measured under the new actuarial assumptions as adopted by the Board in September 2016 following the 2010-2015 Experience Study.

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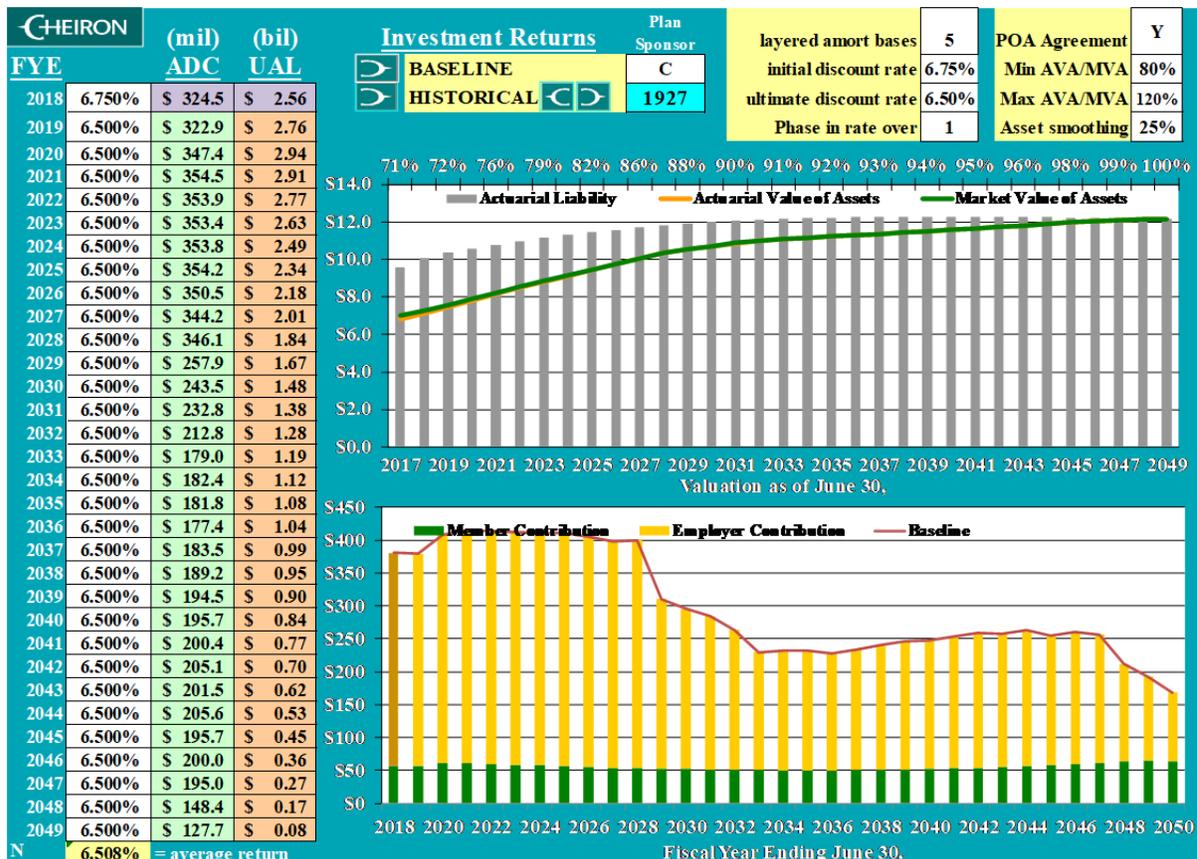
SECTION I – BOARD SUMMARY

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, 2017 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. These projections assume a 6.75% investment return and discount rate for FY 2018 and 6.50% for all years thereafter, 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 over the next few years and is expected (by the City) to result in active membership growth. 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.

SDCERS-City of San Diego Projections FY 2018-2050 (earnings as assumed)



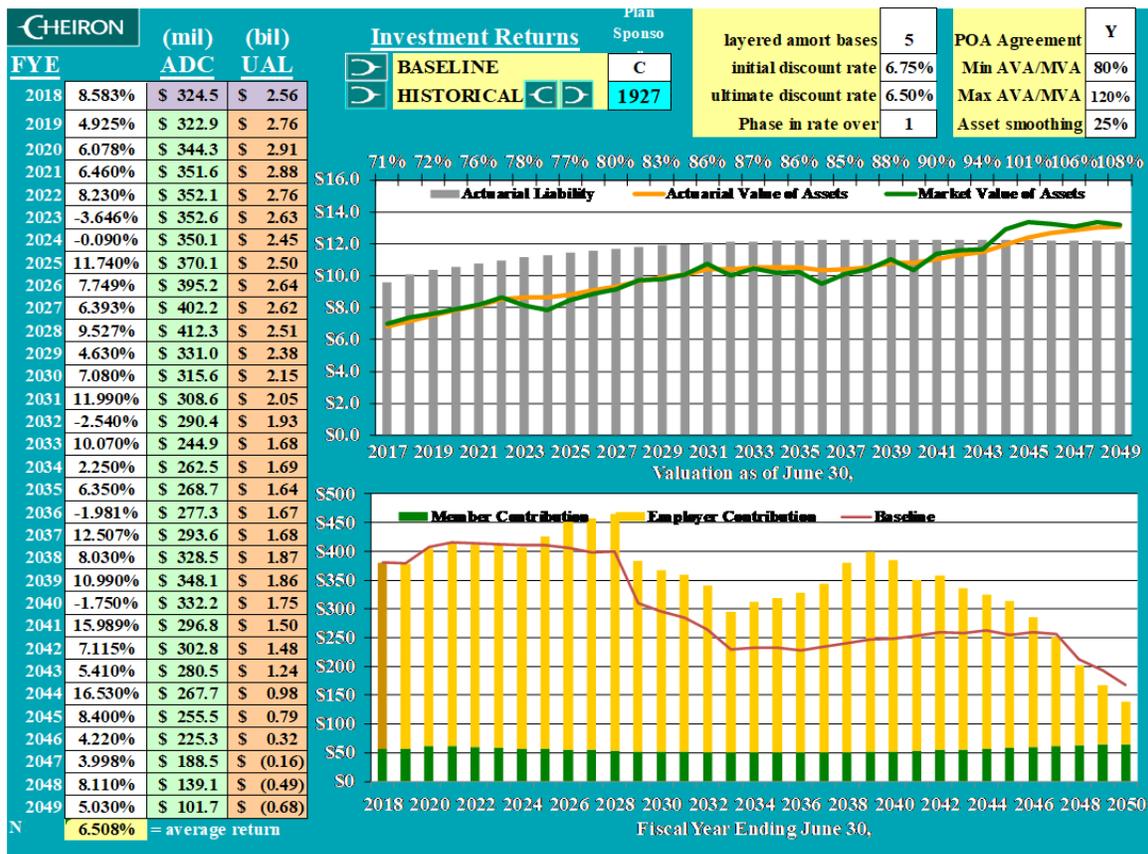
**SDCERS-CITY OF SAN DIEGO
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SECTION I – BOARD SUMMARY

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 period. The Plan's liabilities peak around 2040, and then begin to decline. 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 gradually increase from approximately \$323 million in FY 2019 to \$354 million in FY 2025. The projected contributions steadily decline in the following years until FY 2033, where they generally remain for the rest 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 approximately 6.51% on average.

SDCERS-City of San Diego Projections FY 2018-2050 (earnings which vary by year)



With varying annual earnings that average over the period to approximately 6.51%, one can see the volatility in the funding ratios in the top chart and 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.

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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, 2017 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.

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ACTUARIAL VALUATION AS OF JUNE 30, 2017**

SECTION II – ASSETS

A. Disclosure of Market Value of Assets

The market value of assets represents a “snap-shot” value as of June 30, 2017, 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, 2017.

Table II-1	
SDCERS – All Employers	
Summary of Reported Market Value of Total Defined Benefit Plan	
Cash	\$ 198,167,043
US Stocks	1,621,472,038
International Stocks	1,660,135,126
Private Equity	1,139,491,549
Bonds	2,328,373,527
Real Estate	779,440,981
Receivables	286,465,289
Miscellaneous	102,770,658
Accounts Payable	<u>(535,842,232)</u>
Market Value of Assets – June 30, 2017	\$ 7,580,473,980

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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.

Table II-2 Summary of Market and Actuarial Assets for Each Employer Group as of June 30, 2017			
	<u>Market Value</u> Total Net Assets June 30, 2016	<u>Market Value</u> Total Net Assets June 30, 2017	<u>Actuarial Value</u> Total Assets June 30, 2017
City of San Diego	\$ 6,307,412,212	\$ 7,000,219,655	\$ 6,808,418,225
Unified Port District	368,232,658	413,410,765	400,674,072
Airport Authority	<u>143,873,239</u>	<u>166,843,561</u>	<u>163,315,728</u>
Total-SDCERS	\$ 6,819,518,109	\$ 7,580,473,980	\$ 7,372,408,025

**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, 2017 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.

Table II-3 SDCERS - City of San Diego Development of Actuarial Value of Assets at June 30, 2017 Expected Value of Assets Method	
1. Actuarial Value of Assets at June 30, 2016	\$ 6,455,378,088
2. Amount in (1) with interest at 7.00% to June 30, 2017	6,907,254,554
3. Employer and Member contributions for the Plan Year ended June 30, 2017	322,622,411
4. Disbursements from Trust excluding investment expenses, June 30, 2016 through June 30, 2017	487,737,629
5. Interest on cash flows to June 30, 2017 at 7.00% per year	<u>2,345,079</u>
6. Expected Actuarial Value of Assets at June 30, 2017 = (2) + (3) – (4) + (5)	6,744,484,415
7. Actual Market Value of Assets at June 30, 2017	<u>7,000,219,655</u>
8. Excess of (7) over (6)	255,735,239
9. Preliminary Actuarial Value of Assets at June 30, 2017 = (6) + 25% of (8)	\$ 6,808,418,225
10. 80% Minimum Corridor on the Actuarial Value of Assets = 80% of (7)	5,600,175,724
11. 120% Maximum Corridor on the Actuarial Value of Assets = 120% of (7)	8,400,263,585
12. Final Actuarial Value of Assets at June 30, 2017 = (9), but no less than (10) and no more than (11)	\$ 6,808,418,225

**SDCERS-CITY OF SAN DIEGO
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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 13.5%. The return in FY 2016 was 1.1%.

On an actuarial (smoothed) value of assets basis, the return for FY 2017 was 8.13%. This return produced for SDCERS-All Employers an overall investment gain of \$68.5 million for the year ending June 30, 2017. (Note: this reported gain is different than the investment gain of \$63.1 million reported in Table I-2 of this report. \$63.1 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, 2016 and June 30, 2017, 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, 2017**

SECTION III – LIABILITIES

Table III-1				
SDCERS - City of San Diego - Total				
Valuation as of:	June 30, 2017		June 30, 2016	
Present Value of Future Benefits				
Actives	\$	3,382,309,128	\$	3,266,127,803
Terminated Vested		314,615,177		297,112,955
Disabled		519,588,312		507,024,032
Retirees		5,885,178,563		5,447,716,224
Beneficiaries		<u>287,968,200</u>		<u>266,652,626</u>
Total City	\$	10,389,659,380	\$	9,784,633,641
Actuarial Liability - EAN				
Total Present Value of Future Benefits	\$	10,389,659,380	\$	9,784,633,641
Present Value of Future Normal Costs				
Employer Portion		447,948,281		397,156,705
Employee Portion		<u>375,908,641</u>		<u>374,346,752</u>
Actuarial Liability - EAN	\$	9,565,802,458	\$	9,013,130,184
Actuarial Value of Assets	\$	6,808,418,225	\$	6,455,378,088
Unfunded EAN Actuarial Liability	\$	2,757,384,233	\$	2,557,752,096

Table III-2 shows the actuarial liability as of June 30, 2017 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, 2017				
	Total	General-Old	General-2009	Elected
Present Value of Future Benefits				
Actives	\$	1,878,107,626	\$	1,768,866,150
Terminated Vested		243,162,936		239,061,820
Disabled		106,868,771		106,125,390
Retirees		3,010,321,313		3,000,184,177
Beneficiaries		<u>115,516,459</u>		<u>114,861,004</u>
Total City General & Elected	\$	5,353,977,105	\$	5,229,098,541
Actuarial Liability - EAN				
Actives	\$	1,511,773,838	\$	1,471,427,238
Terminated Vested		243,162,936		239,061,820
Disabled		106,868,771		106,125,390
Retirees		3,010,321,313		3,000,184,177
Beneficiaries		<u>115,516,459</u>		<u>114,861,004</u>
Total City General & Elected	\$	4,987,643,316	\$	4,931,659,629
			\$	111,240,130
			\$	13,638,434

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

SECTION III – LIABILITIES

Table III-3 shows the actuarial liability as of June 30, 2017 for Police Members of SDCERS-City of San Diego.

Table III-3						
SDCERS - City of San Diego - Police as of June 30, 2017						
	Total	Police-Old	Police-2009	Police-2012	Police-2012 No COL	Police-Prop B
Present Value of Future Benefits						
Actives	\$ 1,013,914,907	\$ 818,604,156	\$ 50,249,444	\$ 13,872,326	\$ 27,912,532	\$ 103,276,449
Terminated Vested	59,193,307	57,791,484	588,720	124,267	326,917	361,919
Disabled	287,065,208	287,065,208	-	-	-	-
Retirees	1,854,752,888	1,854,752,888	-	-	-	-
Beneficiaries	119,795,458	119,795,458	-	-	-	-
Total City Safety	\$ 3,334,721,768	\$ 3,138,009,194	\$ 50,838,164	\$ 13,996,593	\$ 28,239,449	\$ 103,638,368
Actuarial Liability - EAN						
Actives	\$ 673,258,591	\$ 631,829,159	\$ 20,168,138	\$ 4,340,379	\$ 7,156,737	\$ 9,764,178
Terminated Vested	59,193,308	57,791,484	588,720	124,267	326,917	361,919
Disabled	287,065,208	287,065,208	-	-	-	-
Retirees	1,854,752,888	1,854,752,888	-	-	-	-
Beneficiaries	119,795,458	119,795,458	-	-	-	-
Total City Safety	\$ 2,994,065,452	\$ 2,951,234,197	\$ 20,756,858	\$ 4,464,646	\$ 7,483,654	\$ 10,126,097

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

SECTION III – LIABILITIES

Table III-4 shows the actuarial liability as of June 30, 2017 for Fire and Lifeguard Members of SDCERS-City of San Diego.

Table III-4 SDCERS - City of San Diego - Fire and Lifeguard as of June 30, 2017					
	Total	Fire-Old	Fire-2012	Lifeguard	Lifeguard-2011
Present Value of Future Benefits					
Actives	\$ 490,286,596	\$ 437,962,743	\$ 1,702,763	\$ 50,139,437	\$ 481,652
Terminated Vested	12,258,933	11,281,578	14,009	963,346	-
Disabled	125,654,333	111,572,568	-	14,081,765	-
Retirees	1,020,104,363	945,984,081	-	74,120,282	-
Beneficiaries	<u>52,656,283</u>	<u>51,483,534</u>	-	<u>1,172,749</u>	-
Total City Safety	\$ 1,700,960,508	\$ 1,558,284,505	\$ 1,716,772	\$ 140,477,579	\$ 481,652
Actuarial Liability - EAN					
Actives	\$ 373,419,777	\$ 338,630,899	\$ 263,180	\$ 34,486,062	\$ 39,636
Terminated Vested	12,258,933	11,281,578	14,009	963,346	-
Disabled	125,654,333	111,572,568	-	14,081,765	-
Retirees	1,020,104,363	945,984,081	-	74,120,282	-
Beneficiaries	<u>52,656,283</u>	<u>51,483,534</u>	-	<u>1,172,749</u>	-
Total City Safety	\$ 1,584,093,689	\$ 1,458,952,660	\$ 277,189	\$ 124,824,204	\$ 39,636

Table III-5 shows the present value of accrued benefits as of June 30, 2017 for all Members of SDCERS-City of San Diego.

Table III-5 SDCERS - City of San Diego - Present Value of Accrued Benefits				
	Valuation as of:	June 30, 2017	June 30, 2016	% Change
Present Value of Accrued Benefits				
1. Present Value of Benefits Accrued and Vested to Date				
a. Members Currently Receiving Payments		\$ 6,692,735,075	\$ 6,221,392,882	7.6%
b. Vested Terminated and Inactive Members		314,615,177	297,112,955	5.9%
c. Active Members		<u>2,002,664,968</u>	<u>2,000,407,740</u>	<u>0.1%</u>
d. Total PVAB		\$ 9,010,015,220	\$ 8,518,913,577	5.8%
2. Assets at Market Value		\$ 7,000,219,655	\$ 6,307,412,212	11.0%
3. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero		\$ 2,009,795,566	\$ 2,211,501,365	
4. Ratio of Assets to Value of Benefits (2)/(1)(d)		77.69%	74.04%	3.7%

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

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.

Table III-6 Development of 2017 Experience Gain/(Loss) SDCERS - City of San Diego (In Millions)		
1. Unfunded Actuarial Liability at June 30, 2016		\$ 2,557.8
2. Beginning of year Unfunded Actuarial Liability payment		(194.0)
3. Interest accrued ((1+2) x 7.00%)		<u>165.5</u>
4. Expected Unfunded Actuarial Liability at June 30, 2017 (1+2+3)		2,529.3
5. Actual Unfunded Liability at June 30, 2017		2,757.4
6. Difference: (4 - 5)		(228.1)
7. Portion of difference (6) due to actuarial assumption or method changes		(254.0)
8. Portion of difference (6) due to plan changes		-
9. Portion of difference (6) due to contributions greater than expected		2.6
10. Portion of difference (6) due to net experience Gain/(Loss)		23.2
a) portion of (10) due to investment experience	\$	63.1
b) portion of (10) due to liability experience	\$	(39.9)
c) portion of (10) due to service purchases	\$	-

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

SECTION III – LIABILITIES

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

Table III-7			
Experience Gain/(Loss) - Historical SDCERS - City of San Diego			
Valuation		Beginning-of-Year	Gain/(Loss)
<u>Date</u>	<u>Gain/(Loss)</u>	<u>Actuarial Liabilities</u>	<u>% of Liability</u>
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 ¹	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

¹ 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, 2017**

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 2019 payroll to determine the normal cost component of the FY 2019 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 difference between the EAN actuarial liability and the actuarial value of assets is the unfunded actuarial liability. The UAL for FY 2019 is to be amortized over several different periods. Table IV-2 shows the outstanding balance, the FY 2019 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 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 \$11.8 million for FY 2019 (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 2019 is developed.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

SECTION IV – CONTRIBUTIONS

**Table IV-1
SDCERS - City of San Diego
Development of the City's Contribution as of June 30, 2017 for FY 2019
(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, 2017	25.61%	21.12%	21.45%	18.98%	36.06%
2. Member Contribution Rate as of June 30, 2017	12.53%	<u>10.38%</u>	<u>10.62%</u>	<u>8.94%</u>	<u>9.05%</u>
3. Employer Normal Cost Rate as of June 30, 2017 (1-2)	13.08%	10.74%	10.83%	10.04%	27.01%
4. Actuarial Liability	\$9,565.8	\$4,987.6	\$4,931.7	\$43.5	\$12.5
5. Actuarial Assets	\$6,808.4	<u>\$3,556.9</u>	<u>\$3,517.5</u>	<u>\$30.4</u>	<u>\$8.9</u>
6. Total Unfunded Actuarial Liability (UAL) (4-5) ¹	\$2,757.4	\$1,430.8	\$1,414.1	\$13.0	\$3.6
7. Preliminary FY17 UAL amortization ¹	\$254.9	\$136.2	\$134.6	\$1.2	\$0.3
8. <u>Negative Amortization Test for FY19</u>					
a. Total UAL on 6/30/17 less FY18 UAL payment	\$2,496.1	\$1,295.2	\$1,280.1	\$11.8	\$3.2
b. Interest on 8a. To 6/30/18	\$168.5	\$87.4	\$86.4	\$0.8	\$0.2
c. Preliminary FY19 UAL amortization (line 7)	\$254.9	<u>\$136.2</u>	<u>\$134.6</u>	<u>\$1.2</u>	<u>\$0.3</u>
d. Negative interest (8b - 8c, not less than zero)	-	-	-	-	-
9. Total FY19 UAL payment on 7/01/18 (8c + 8d)	\$254.9	\$136.2	\$134.6	\$1.2	\$0.3
10. Total FY19 UAL payment throughout year	\$263.3	\$140.7	\$139.1	\$1.3	\$0.4
11. Total Expected Payroll for FY19	\$438.3	\$244.2	\$207.9	\$35.9	\$0.3
12. FY19 Normal Cost paid throughout the year	\$58.1	\$26.2	\$22.5	\$3.6	\$0.1
13. FY19 Normal Cost paid at start of year	\$56.2	\$25.4	\$21.8	\$3.5	\$0.1
14. Administrative Expenses paid throughout the year	\$12.2	\$6.3	\$6.1	\$0.2	\$0.0
15. Determination of FY19 ADC %					
a. Employer Normal Cost Rate (12 divided by 11)	13.25%	10.74%	10.83%	10.04%	27.01%
b. UAL Rate (line 10 divided by line 11)	60.07%	57.65%	66.91%	3.58%	100.85%
c. Admin Expense Rate (line 14 divided by line 11)	2.78%	<u>2.59%</u>	<u>2.95%</u>	<u>0.52%</u>	<u>4.85%</u>
d. Total employer ADC % (15a + 15b + 15c)	76.11%	70.98%	80.69%	14.13%	132.71%
16. Determination of FY19 ADC dollars					
a. FY19 ADC if paid throughout year	\$333.6	\$173.3	\$167.8	\$5.1	\$0.5
b. FY19 ADC if paid at beginning of year	\$322.9	\$167.7	\$162.4	\$4.9	\$0.4

¹See 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, 2017**

SECTION IV – CONTRIBUTIONS

Table IV-1 (cont.) SDCERS - City of San Diego Development of the City's Contribution as of June 30, 2017 for FY 2019 (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, 2017	32.19%	32.92%	31.55%	31.56%	29.04%	28.78%	33.23%	33.30%	34.10%	31.46%
2. Member Contribution Rate as of June 30, 2017	<u>15.69%</u>	<u>16.34%</u>	<u>15.30%</u>	<u>15.23%</u>	<u>12.75%</u>	<u>12.86%</u>	<u>16.58%</u>	<u>16.07%</u>	<u>16.84%</u>	<u>15.27%</u>
3. Employer Normal Cost Rate as of June 30, 2017 (1-2)	16.50%	16.58%	16.25%	16.33%	16.29%	15.92%	16.65%	17.23%	17.26%	16.19%
4. Actuarial Liability	\$4,578.2	\$2,951.2	\$20.8	\$4.5	\$7.5	\$10.1	\$1,459.0	\$0.3	\$124.8	\$0.0
5. Actuarial Assets	<u>\$3,251.5</u>	<u>\$2,091.2</u>	<u>\$14.4</u>	<u>\$3.1</u>	<u>\$5.1</u>	<u>\$7.0</u>	<u>\$1,041.7</u>	<u>\$0.2</u>	<u>\$88.9</u>	<u>\$0.0</u>
6. Total Unfunded Actuarial Liability (UAL) (4-5) ¹	\$1,326.6	\$860.1	\$6.4	\$1.4	\$2.3	\$3.2	\$417.2	\$0.1	\$35.9	\$0.0
7. Preliminary FY17 UAL amortization ¹	\$118.6	\$74.3	\$0.6	\$0.1	\$0.2	\$0.3	\$39.7	\$0.0	\$3.4	\$0.0
8. <u>Negative Amortization Test for FY19</u>										
a. Total UAL on 6/30/17 less FY18 UAL payment	\$1,200.9	\$778.6	\$5.8	\$1.2	\$2.1	\$2.9	\$377.7	\$0.1	\$32.5	\$0.0
b. Interest on 8a. To 6/30/18	\$81.1	\$52.6	\$0.4	\$0.1	\$0.1	\$0.2	\$25.5	\$0.0	\$2.2	\$0.0
c. Preliminary FY19 UAL amortization (line 7)	<u>\$118.6</u>	<u>\$74.3</u>	<u>\$0.6</u>	<u>\$0.1</u>	<u>\$0.2</u>	<u>\$0.3</u>	<u>\$39.7</u>	<u>\$0.0</u>	<u>\$3.4</u>	<u>\$0.0</u>
d. Negative interest (8b - 8c, not less than zero)	-	-	-	-	-	-	-	-	-	-
9. Total FY19 UAL payment on 7/01/18 (8c + 8d)	\$118.6	\$74.3	\$0.6	\$0.1	\$0.2	\$0.3	\$39.7	\$0.0	\$3.4	\$0.0
10. Total FY19 UAL payment throughout year	\$122.6	\$76.8	\$0.6	\$0.1	\$0.2	\$0.3	\$41.0	\$0.0	\$3.5	\$0.0
11. Total Expected Payroll for FY19	\$194.2	\$78.5	\$8.8	\$2.7	\$6.3	\$50.3	\$41.5	\$0.4	\$5.6	\$0.1
12. FY19 Normal Cost paid throughout the year	\$31.9	\$13.0	\$1.4	\$0.4	\$1.0	\$8.0	\$6.9	\$0.1	\$1.0	\$0.0
13. FY19 Normal Cost paid at start of year	\$30.9	\$12.6	\$1.4	\$0.4	\$1.0	\$7.8	\$6.7	\$0.1	\$0.9	\$0.0
14. Administrative Expenses paid throughout the year	\$5.9	\$3.4	\$0.1	\$0.0	\$0.0	\$0.3	\$1.8	\$0.0	\$0.2	\$0.0
15. Determination of FY19 ADC %										
a. Employer Normal Cost Rate (12 divided by 11)	16.42%	16.58%	16.25%	16.33%	16.29%	15.92%	16.65%	17.23%	17.26%	16.19%
b. UAL Rate (line 10 divided by line 11)	63.13%	97.81%	6.53%	4.48%	3.33%	0.56%	98.93%	2.21%	63.36%	1.03%
c. Admin Expense Rate (line 14 divided by line 11)	<u>3.01%</u>	<u>4.33%</u>	<u>0.86%</u>	<u>0.79%</u>	<u>0.74%</u>	<u>0.62%</u>	<u>4.38%</u>	<u>0.74%</u>	<u>3.05%</u>	<u>0.65%</u>
d. Total employer ADC % (15a + 15b + 15c)	82.56%	118.72%	23.64%	21.60%	20.36%	17.11%	119.95%	20.18%	83.68%	17.88%
16. Determination of FY19 ADC dollars										
a. FY19 ADC if paid throughout year	\$160.3	\$93.2	\$2.1	\$0.6	\$1.3	\$8.6	\$49.8	\$0.1	\$4.7	\$0.0
b. FY19 ADC if paid at beginning of year	\$155.1	\$90.2	\$2.0	\$0.6	\$1.2	\$8.3	\$48.2	\$0.1	\$4.5	\$0.0

¹ 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, 2017**

SECTION IV – CONTRIBUTIONS

Table IV-2 shows information on each layer of the June 30, 2017 UAL.

Table IV-2 SDCERS - City of San Diego Schedule of Amortization Bases as of July 1, 2017 Used in Development of the City's Contribution for FY 2019								
Type of Base	Date		Initial	July 1, 2017	Outstanding	Remaining	Amortization	
	Established	Initial Amount	Amortization	Outstanding	Balance for FY	Amortization	Payment for FY	
			Years	Balance	2018 (BOY) ¹	Years	2018 (BOY) ²	
1. June 30, 2007 UAL	7/1/2007	\$ 1,184,242,049	20	\$ 325,064,528	\$ 309,200,814	10	\$ 36,053,983	
2. Assumption Change	7/1/2008	83,787,434	30	30,995,915	30,918,041	21	2,047,995	
3. Experience Loss	7/1/2008	13,564,981	15	3,234,639	2,902,329	6	527,360	
4. Experience Loss	7/1/2009	810,661,179	15					
- Layer 1				41,770,133	38,255,191	7	6,059,988	
- Layer 2				41,770,133	38,255,191	8	5,392,652	
- Layer 3				41,770,133	38,255,191	9	4,874,472	
- Layer 4				41,770,133	38,255,191	10	4,460,700	
- Layer 5				41,770,133	38,255,191	11	4,122,859	
5. Experience Loss	7/1/2010	25,942,732	15	7,108,989	6,613,340	8	932,251	
6. Experience Gain ³	7/1/2010	(50,000,000)	14	(11,990,224)	(10,981,251)	7	(1,739,535)	
7. Experience Gain	7/1/2011	(141,139,563)	15	(40,633,738)	(38,268,713)	9	(4,876,195)	
8. Assumption Change	7/1/2011	188,313,322	30	67,214,897	67,406,169	24	4,090,687	
9. Experience Loss	7/1/2012	36,799,824	15	35,309,814	33,586,634	10	3,916,328	
10. Method Change	7/1/2012	2,465,954	30	2,777,748	2,789,802	25	165,010	
11. Non-Police UAL ⁴	7/1/2012	1,564,122,860	15					
- Layer 1				255,081,203	238,361,823	10	31,425,046	
- Layer 2				255,081,203	238,361,823	11	29,407,521	
- Layer 3				255,081,203	238,361,823	12	27,739,239	
- Layer 4				255,081,203	238,361,823	13	26,339,489	
- Layer 5				255,081,203	238,361,823	14	25,150,612	
12. Experience Loss	7/1/2013	25,877,674	15	24,672,379	23,380,031	11	2,760,986	
13. Salary Freeze	7/1/2013	(194,945,486)	15	(185,312,837)	(175,445,388)	11	(20,858,214)	
14. Assumption Change	7/1/2013	146,882,570	30	155,757,282	154,487,470	26	10,868,146	
15. Experience Gain	7/1/2014	(129,251,561)	15	(129,103,396)	(123,325,416)	12	(13,542,578)	
16. Experience Gain	7/1/2015	(37,814,454)	15	(39,141,165)	(37,570,464)	13	(3,927,777)	
17. Assumption Change	7/1/2015	95,828,141	30	102,249,652	101,585,107	28	6,965,940	
18. Experience Loss	7/1/2016	90,825,538	15	97,183,326	93,715,448	14	9,337,586	
19. Assumption Change	7/1/2016	543,780,953	30	581,845,620	578,035,127	29	39,601,881	
20. Experience Gain	7/1/2017	(8,079,441)	15	(8,079,441)	(8,624,803)	15	(602,438)	
21. Assumption Change	7/1/2017	253,973,564	30	253,973,564	271,116,780	30	18,164,375	
TOTAL				\$ 2,757,384,233	\$ 2,664,606,128		\$ 254,858,367	

¹ July 1, 2017 outstanding balance adjusted to the FY2019 beginning of year (BOY), July 1, 2018.

² 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.

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

⁴ 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, 2017**

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 Solvency Test 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, 2017, issued on November 17, 2017.

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	
Type of Activity	Gain (or Loss) for Year ending June 30, 2017
Investment Income	\$ 63,106,890
Combined Liability Experience	<u>(39,883,695)</u>
Gain (or Loss) During Year from Financial Experience	\$ 23,223,195
Non-Recurring Gain (or Loss) Items (e.g., Contributions, Assumption Changes)	<u>(251,342,990)</u>
Composite Gain (or Loss) During Year	\$ (228,119,795)

**SDCERS-CITY OF SAN DIEGO
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SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORT INFORMATION

Table V-2 SDCERS - City of San Diego SOLVENCY TEST Actuarial Liabilities For (\$ in thousands)							
Valuation Date	(A) Active Member Contributions	(B) Retirees And Beneficiaries	(C) Remaining Active Members' Liabilities	Reported Assets¹	Portion of Actuarial Liabilities Covered by Reported Assets		
					(A)	(B)	(C)
2017 ⁵	\$ 808,937	\$ 6,692,735	\$ 2,064,131	\$ 6,808,418	100%	89.64%	0.00%
2016 ⁵	798,226	6,221,393	1,993,511	6,455,378	100	90.93	0.00
2015 ⁵	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 ⁵	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 ⁵	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 ⁵	522,966	3,286,668	2,153,916	4,662,346	100	100	39.50
2007 ⁴	482,526	3,101,594	2,013,532	4,413,311	100	100	41.19
2006 ³	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 ²	1,946,660	1,635,681	2,628,680	100	100	16.33

¹ Actuarial Value of Assets.

² Estimated.

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

⁴ 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.

⁵ Reflects revised actuarial and economic assumptions.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-1 Reconciliation of Member Data Total SDCERS - City of San Diego								
	<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>
Participants as of 7/1/2016	6,748	738	2,127	1,180	5,824	1,313	1,137	19,067
New Entrants	168	0	12	0	0	0	0	180
Returned to Work	20	(5)	(15)	0	0	0	0	0
Vested Terminations	(59)	59	0	0	0	0	0	0
Non-Vested Terminations	(83)	0	83	0	0	0	0	0
Retirements	(62)	(50)	(6)	0	388	0	(270)	0
DROP	(292)	(1)	0	0	0	0	293	0
Disabilities	(5)	(1)	0	11	(2)	0	(3)	0
New Continuants	0	0	0	0	0	94	0	94
New Dissolutions ¹	0	0	0	1	5	0	13	19
Benefits Ceased ²	(8)	(3)	(2)	(32)	(121)	(70)	(6)	(242)
Lump Sum Cashout	(38)	(5)	(76)	0	0	0	0	(119)
Transfers In/Out	(1)	(1)	(3)	0	0	0	0	(5)
Miscellaneous Adjustments	0	0	0	1	7	(2)	7	13
Participants as of 7/1/2017	6,388	731	2,120	1,161	6,101	1,335	1,171	19,007

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

² Includes deaths and benefits that were terminated or suspended.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-2 Reconciliation of Member Data City General								
	<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>
Participants as of 7/1/2016	4,574	597	1,678	409	3,931	737	717	12,643
New Entrants	49	0	1	0	0	0	0	50
Returned to Work	17	(5)	(12)	0	0	0	0	0
Vested Terminations	(48)	48	0	0	0	0	0	0
Non-Vested Terminations	(54)	0	54	0	0	0	0	0
Retirements	(56)	(32)	(5)	0	269	0	(176)	0
DROP	(194)	0	0	0	0	0	194	0
Disabilities	(2)	0	0	2	0	0	0	0
New Continuants	0	0	0	0	0	53	0	53
New Dissolutions ¹	0	0	0	1	4	0	8	13
Benefits Ceased ²	(7)	(2)	(2)	(13)	(85)	(58)	(6)	(173)
Lump Sum Cashout	(22)	(4)	(55)	0	0	0	0	(81)
Transferred Out	0	(1)	(3)	0	0	0	0	(4)
Miscellaneous Adjustments	0	0	0	1	4	0	7	12
Participants as of 7/1/2017	4,257	601	1,656	400	4,123	732	744	12,513

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

² Includes deaths and benefits that were terminated or suspended.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-3 Reconciliation of Member Data City Safety								
	<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>
Participants as of 7/1/2016	2,174	141	449	771	1,893	576	420	6,424
New Entrants	119	0	11	0	0	0	0	130
Returned to Work	3	0	(3)	0	0	0	0	0
Vested Terminations	(11)	11	0	0	0	0	0	0
Non-Vested Terminations	(29)	0	29	0	0	0	0	0
Retirements	(6)	(18)	(1)	0	119	0	(94)	0
DROP	(98)	(1)	0	0	0	0	99	0
Disabilities	(3)	(1)	0	9	(2)	0	(3)	0
New Continuants	0	0	0	0	0	41	0	41
New Dissolutions ¹	0	0	0	0	1	0	5	6
Benefits Ceased ²	(1)	(1)	0	(19)	(36)	(12)	0	(69)
Lump Sum Cashout	(16)	(1)	(21)	0	0	0	0	(38)
Transferred Out	(1)	0	0	0	0	0	0	(1)
Miscellaneous Adjustments	0	0	0	0	3	(2)	0	1
Participants as of 7/1/2017	2,131	130	464	761	1,978	603	427	6,494

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

² Includes deaths and benefits that were terminated or suspended.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-4 SDCERS - City of San Diego Active Member Data			
	<u>June 30, 2017</u>	<u>June 30, 2016</u>	<u>% Change</u>
<u>Total</u>			
Count	6,388	6,748	-5.3%
Average Current Age	45.1	45.0	0.4%
Average Service	14.0	13.8	1.1%
Average Pensionable Earnings	\$ 70,271	\$ 68,924	2.0%
Annual Pensionable Earnings	\$ 448,889,789	\$ 465,100,255	-3.5%
Average Valuation Compensation ¹	\$ 70,271	\$ 68,924	2.0%
Annual Valuation Compensation ¹	\$ 448,889,789	\$ 465,100,255	-3.5%
Average Service Without Purchased Service	13.4	13.2	1.5%
Members with Paid Purchased Service	1,105	1,242	-11.0%
Members with Any Purchased Service	1,139	1,282	-11.2%
Amount of Paid Purchased Service	3,671	4,172	-12.0%
Amount of Total Purchased Service	3,912	4,450	-12.1%
<u>General</u>			
Count	4,257	4,574	-6.9%
Average Current Age	48.0	47.6	0.8%
Average Service	15.2	14.8	2.7%
Average Pensionable Earnings	\$ 62,912	\$ 61,327	2.6%
Annual Pensionable Earnings	\$ 267,818,260	\$ 280,510,311	-4.5%
Average Valuation Compensation ¹	\$ 62,912	\$ 61,327	2.6%
Annual Valuation Compensation ¹	\$ 267,818,260	\$ 280,510,311	-4.5%
Average Service Without Purchased Service	14.5	14.0	3.6%
Members with Paid Purchased Service	836	957	-12.6%
Members with Any Purchased Service	846	966	-12.4%
Amount of Paid Purchased Service	2,920	3,411	-14.4%
Amount of Total Purchased Service	3,015	3,507	-14.0%
<u>Safety</u>			
Count	2,131	2,174	-2.0%
Average Current Age	39.3	39.4	-0.3%
Average Service	11.6	11.8	-1.7%
Average Pensionable Earnings	\$ 84,970	\$ 84,908	0.1%
Annual Pensionable Earnings	\$ 181,071,529	\$ 184,589,944	-1.9%
Average Valuation Compensation ¹	\$ 84,970	\$ 84,908	0.1%
Annual Valuation Compensation ¹	\$ 181,071,529	\$ 184,589,944	-1.9%
Average Service Without Purchased Service	11.2	11.3	-0.9%
Members with Paid Purchased Service	269	285	-5.6%
Members with Any Purchased Service	293	316	-7.3%
Amount of Paid Purchased Service	750	761	-1.4%
Amount of Total Purchased Service	896	943	-5.0%

¹ 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, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-5 SDCERS - City of San Diego Non-Active Participant Data						
	Count			Average Age		
	June 30, 2017	June 30, 2016	%Change	June 30, 2017	June 30, 2016	%Change
Total						
Retired ¹	7,272	6,961	4.5%	66.2	66.0	0.2%
Disabled	1,161	1,180	-1.6%	67.0	66.5	0.8%
Beneficiaries	<u>1,335</u>	<u>1,313</u>	1.7%	<u>73.7</u>	<u>73.7</u>	0.0%
Payee Total	9,768	9,454	3.3%	67.3	67.1	0.2%
DROP Participants	1,171	1,137	3.0%	57.5	57.3	0.2%
Deferred Vested ²	2,851	2,865	-0.5%	48.0	47.5	0.9%
Vested < 10 yrs svc	2,120	2,127	-0.3%			
General						
Retired ¹	4,867	4,648	4.7%	67.6	67.5	0.1%
Disabled	400	409	-2.2%	65.9	65.3	0.9%
Beneficiaries	<u>732</u>	<u>737</u>	-0.7%	<u>75.8</u>	<u>76.1</u>	-0.4%
Payee Total	5,999	5,794	3.5%	68.5	68.4	0.1%
DROP Participants	744	717	3.8%	59.5	59.4	0.2%
Deferred Vested ²	2,257	2,275	-0.8%	49.4	48.9	1.0%
Vested < 10 yrs svc	1,656	1,678	-1.3%			
Safety						
Retired ¹	2,405	2,313	4.0%	63.2	63.0	0.3%
Disabled	761	771	-1.3%	67.7	67.2	0.7%
Beneficiaries	<u>603</u>	<u>576</u>	4.7%	<u>71.2</u>	<u>70.7</u>	0.7%
Payee Total	3,769	3,660	3.0%	65.4	65.1	0.5%
DROP Participants	427	420	1.7%	54.0	53.8	0.4%
Deferred Vested ²	594	590	0.7%	42.3	42.2	0.2%
Vested < 10 yrs svc	464	449	3.3%			

¹ Includes DROP Participants.

² Includes all Participants having a contribution balance still on account with SDCERS.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-6 SDCERS - City of San Diego Non-Active Participant Data						
	Total Annual Benefit			Average Annual Benefit		
	June 30, 2017	June 30, 2016	%Change	June 30, 2017	June 30, 2016	%Change
Total						
Retired ¹	\$ 401,762,775	\$ 377,042,523	6.6%	\$ 55,248	\$ 54,165	2.0%
Disabled	41,914,596	41,346,765	1.4%	36,102	35,040	3.0%
Beneficiaries	<u>27,134,630</u>	<u>25,399,388</u>	6.8%	<u>20,326</u>	<u>19,345</u>	5.1%
Payee Total	\$ 470,812,001	\$ 443,788,676	6.1%	\$ 48,199	\$ 46,942	2.7%
DROP Participants	\$ 66,448,172	\$ 63,721,088	4.3%	\$ 56,745	\$ 56,043	1.3%
Deferred Vested ²	\$ 157,417,824	\$ 147,243,821	6.9%	\$ 55,215	\$ 51,394	7.4%
General						
Retired ¹	\$ 218,233,812	\$ 204,018,917	7.0%	\$ 44,839	\$ 43,894	2.2%
Disabled	8,289,571	8,285,148	0.1%	20,724	20,257	2.3%
Beneficiaries	<u>11,711,587</u>	<u>11,152,636</u>	5.0%	<u>15,999</u>	<u>15,132</u>	5.7%
Payee Total	\$ 238,234,969	\$ 223,456,701	6.6%	\$ 39,712	\$ 38,567	3.0%
DROP Participants	\$ 32,244,913	\$ 30,116,085	7.1%	\$ 43,340	\$ 42,003	3.2%
Deferred Vested ²	\$ 126,968,084	\$ 117,269,574	8.3%	\$ 56,255	\$ 51,547	9.1%
Safety						
Retired ¹	\$ 183,528,963	\$ 173,023,606	6.1%	\$ 76,311	\$ 74,805	2.0%
Disabled	33,625,026	33,061,617	1.7%	44,185	42,881	3.0%
Beneficiaries	<u>15,423,043</u>	<u>14,246,752</u>	8.3%	<u>25,577</u>	<u>24,734</u>	3.4%
Payee Total	\$ 232,577,032	\$ 220,331,975	5.6%	\$ 61,708	\$ 60,200	2.5%
DROP Participants	\$ 34,203,259	\$ 33,605,003	1.8%	\$ 80,101	\$ 80,012	0.1%
Deferred Vested ²	\$ 30,449,740	\$ 29,974,247	1.6%	\$ 51,262	\$ 50,804	0.9%

¹ Includes DROP Participants.

² 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
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-7 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2017 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	25	28	-	-	-	-	-	-	-	-	-	53
25 to 29	90	255	67	-	-	-	-	-	-	-	-	412
30 to 34	37	222	354	104	1	-	-	-	-	-	-	718
35 to 39	21	89	316	283	110	2	-	-	-	-	-	821
40 to 44	15	59	182	263	320	91	2	-	-	-	-	932
45 to 49	11	59	144	163	410	318	124	19	-	-	-	1,248
50 to 54	11	44	121	121	307	272	270	131	12	1	-	1,290
55 to 59	4	25	74	83	194	95	70	45	6	-	-	596
60 to 64	1	17	48	56	68	20	16	7	1	-	-	234
65 to 69	-	5	22	22	6	7	1	1	-	-	-	64
70 and up	-	4	10	2	2	1	-	-	-	-	1	20
Total Count	215	807	1,338	1,097	1,418	806	483	203	19	2	-	6,388

Table A-8 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2017 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	\$ 56,630	\$ 58,343	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 57,535
25 to 29	47,581	64,015	69,619	-	-	-	-	-	-	-	-	61,336
30 to 34	45,082	65,376	76,063	75,191	63,487	-	-	-	-	-	-	71,018
35 to 39	50,849	63,283	76,379	77,247	76,521	82,689	-	-	-	-	-	74,640
40 to 44	51,357	60,969	70,949	77,718	78,348	81,354	74,168	-	-	-	-	75,475
45 to 49	46,860	53,044	67,603	68,312	76,213	82,342	77,088	66,365	-	-	-	74,332
50 to 54	55,032	50,797	66,434	64,128	64,779	74,194	75,867	72,335	66,178	85,068	-	69,415
55 to 59	69,533	47,160	63,301	55,711	59,253	68,017	66,955	71,986	59,172	-	-	62,086
60 to 64	44,343	42,174	65,643	57,440	55,041	61,956	75,248	51,427	108,922	-	-	58,904
65 to 69	-	45,900	58,435	68,698	50,506	67,833	57,208	65,748	-	-	-	61,363
70 and up	-	32,607	50,656	35,637	55,721	34,805	-	-	-	75,607	-	46,506
Avg. Salary	\$ 49,524	\$ 61,116	\$ 71,779	\$ 71,502	\$ 70,761	\$ 77,102	\$ 74,822	\$ 70,946	\$ 66,215	\$ 80,338	\$ -	\$ 70,271

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APPENDIX A – MEMBERSHIP INFORMATION

Table A-9 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2017 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	-	5	-	-	-	-	-	-	-	-	5
25 to 29	18	83	36	-	-	-	-	-	-	-	137
30 to 34	8	77	163	50	1	-	-	-	-	-	299
35 to 39	11	47	188	119	62	2	-	-	-	-	429
40 to 44	6	39	138	135	189	56	1	-	-	-	564
45 to 49	8	50	121	124	271	166	80	18	-	-	838
50 to 54	11	43	114	102	251	216	224	127	12	1	1,101
55 to 59	4	24	70	79	190	87	64	44	6	-	568
60 to 64	1	17	47	56	68	20	15	7	1	-	232
65 to 69	-	5	22	22	6	7	1	1	-	-	64
70 and up	-	4	10	2	2	1	-	-	-	1	20
Total Count	67	394	909	689	1,040	555	385	197	19	2	4,257

Table A-10 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2017 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	\$ -	\$ 36,263	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 36,263
25 to 29	36,377	50,852	55,694	-	-	-	-	-	-	-	50,223
30 to 34	33,732	51,685	63,676	58,676	63,487	-	-	-	-	-	58,950
35 to 39	42,731	53,827	70,882	59,603	62,969	82,689	-	-	-	-	64,075
40 to 44	43,441	54,693	66,460	66,957	68,080	71,988	65,748	-	-	-	66,611
45 to 49	42,626	48,400	64,207	62,282	67,053	68,589	63,127	64,600	-	-	64,467
50 to 54	55,032	50,000	65,282	60,555	59,177	68,150	69,034	71,200	66,178	85,068	64,789
55 to 59	69,533	46,553	62,081	53,748	58,524	65,436	62,877	71,228	59,172	-	60,410
60 to 64	44,343	42,174	63,914	57,440	55,041	61,956	74,306	51,427	108,922	-	58,394
65 to 69	-	45,900	58,435	68,698	50,506	67,833	57,208	65,748	-	-	61,363
70 and up	-	32,607	50,656	35,637	55,721	34,805	-	-	-	75,607	46,506
Avg. Salary	\$ 43,644	\$ 50,276	\$ 65,164	\$ 60,974	\$ 62,631	\$ 68,008	\$ 66,949	\$ 69,873	\$ 66,215	\$ 80,338	\$ 62,912



**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, 2017 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	25	23	-	-	-	-	-	-	-	-	-	48
25 to 29	72	172	31	-	-	-	-	-	-	-	-	275
30 to 34	29	145	191	54	-	-	-	-	-	-	-	419
35 to 39	10	42	128	164	48	-	-	-	-	-	-	392
40 to 44	9	20	44	128	131	35	1	-	-	-	-	368
45 to 49	3	9	23	39	139	152	44	1	-	-	-	410
50 to 54	-	1	7	19	56	56	46	4	-	-	-	189
55 to 59	-	1	4	4	4	8	6	1	-	-	-	28
60 to 64	-	-	1	-	-	-	1	-	-	-	-	2
65 to 69	-	-	-	-	-	-	-	-	-	-	-	-
70 and up	-	-	-	-	-	-	-	-	-	-	-	-
Total Count	148	413	429	408	378	251	98	6	-	-	-	2,131

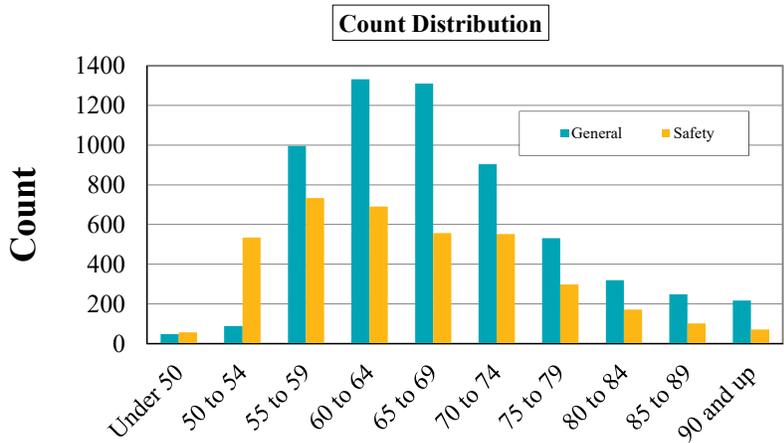
Table A-12 SDCERS - City of San Diego Distribution of Active Members as of June 30, 2017 Safety												
Age	Average Salary Years of Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up		
Under 25	\$ 56,630	\$ 63,144	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,751
25 to 29	50,382	70,366	85,789	-	-	-	-	-	-	-	-	66,873
30 to 34	48,213	72,647	86,634	90,483	-	-	-	-	-	-	-	79,631
35 to 39	59,779	73,865	84,452	90,050	94,026	-	-	-	-	-	-	86,202
40 to 44	56,635	73,207	85,025	89,067	93,162	96,340	82,588	-	-	-	-	89,061
45 to 49	58,151	78,842	85,466	87,483	94,071	97,362	102,473	98,142	-	-	-	94,496
50 to 54	-	85,068	85,197	83,309	89,886	97,506	109,141	108,391	-	-	-	96,361
55 to 59	-	61,729	84,647	94,481	93,876	96,089	110,448	105,331	-	-	-	96,088
60 to 64	-	-	146,927	-	-	-	89,380	-	-	-	-	118,154
65 to 69	-	-	-	-	-	-	-	-	-	-	-	-
70 and up	-	-	-	-	-	-	-	-	-	-	-	-
Avg. Salary	\$ 52,185	\$ 71,458	\$ 85,793	\$ 89,283	\$ 93,128	\$ 97,211	\$ 105,754	\$ 106,173	\$ -	\$ -	\$ -	\$ 84,970

**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, 2017**

<u>Age</u>	<u>Count</u>		<u>Total</u>
	<u>General</u>	<u>Safety</u>	
Under 50	48	57	105
50 to 54	89	534	623
55 to 59	996	733	1,729
60 to 64	1,332	691	2,023
65 to 69	1,311	558	1,869
70 to 74	904	553	1,457
75 to 79	532	298	830
80 to 84	320	172	492
85 to 89	249	102	351
90 and up	218	71	289
Total	5,999	3,769	9,768

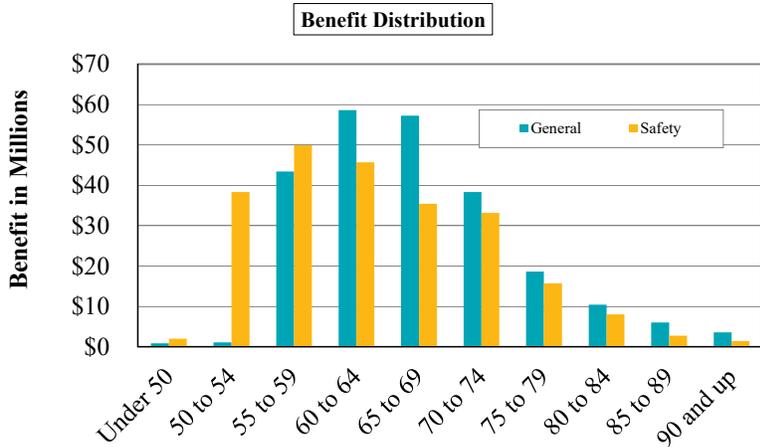


**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

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, 2017**

<u>Age</u>	<u>Annual Benefit</u>		
	<u>General</u>	<u>Safety</u>	<u>Total</u>
Under 50	\$ 853,857	\$ 2,004,428	\$ 2,858,285
50 to 54	1,142,133	38,361,148	39,503,281
55 to 59	43,448,022	49,900,555	93,348,577
60 to 64	58,592,185	45,678,463	104,270,648
65 to 69	57,199,910	35,415,195	92,615,105
70 to 74	38,337,221	33,173,007	71,510,228
75 to 79	18,618,669	15,743,851	34,362,520
80 to 84	10,431,542	8,086,085	18,517,627
85 to 89	6,043,578	2,771,351	8,814,929
90 and up	<u>3,567,059</u>	<u>1,442,949</u>	<u>5,010,008</u>
Total	\$ 238,234,175	\$ 232,577,032	\$ 470,811,207



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.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

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 “13th 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 “13th Check Supplement Amount” will have their projected “13th Check Supplement Amount” calculated assuming \$30 multiplied by the “13th Check Supplement Years,” provided they are eligible based on “13th Check Supplement Years.”
- Payees’ “Cola Pension” and “Star Cola Pension” do not include a COLA as of July 1, 2017. 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.

The December 5, 2017 agreement between the City of San Diego and the San Diego Police Officers Association is not reflected in the assumptions for this valuation, except in projecting total payroll to FY 2019 for the purpose of determining the Normal Cost portion of the ADC.

1. Investment Return

SDCERS' assets are assumed to earn 6.75% net of investment expenses. This assumption is scheduled to decline to 6.50% in the 2018 valuation.

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 \$11,787,500 for FY 2018 (assuming payment at the beginning of the year), increasing by 2.50% annually.

4. Interest Credited to Member Contributions

6.75%, compounded annually.

5. Salary Increase Rate

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

The additional merit component:

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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

SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

9. Rates of Termination

Table B-2
SDCERS - City of San Diego
Rates of Termination

<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.

SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017

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):

Table B-4		
SDCERS - City of San Diego		
Rates of Mortality for Active Lives at Selected Ages		
	General and Safety	
<u>Age</u>	<u>Male</u>	<u>Female</u>
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.

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):

Table B-5		
SDCERS - City of San Diego		
Rates of Mortality for Retired Healthy Lives at Selected Ages		
<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):

Table B-6 SDCERS - City of San Diego Rates of Mortality for Disabled Lives at Selected Ages		
<u>Age</u>	<u>Male</u>	<u>Female</u>
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

**SDCERS-CITY OF SAN DIEGO
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APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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.

Table B-7 SDCERS - City of San Diego Rates of Retirement by Age and Service				
<u>Service</u>	<u>General - All Plans</u>		<u>Safety - All Plans</u>	
	<u>Prior to age 62</u>	<u>Age 62 or greater</u>	<u>Prior to age 55</u>	<u>Age 55 or greater</u>
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

Table B-8 SDCERS - City of San Diego Rates of Retirement by Age for General 2009 Plan	
<u>Age</u>	<u>Rates</u>
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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APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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

Table B-9 SDCERS - City of San Diego Rates of Retirement at Selected Ages	
<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 2.0%. Thereafter, it was assumed the account balance would be converted to an annuity at an interest rate of 2.8% 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 2.0%. 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

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 7.00% to 6.75% for the 2017 valuation. This assumption is scheduled to be further reduced to 6.50% for the 2018 valuation.

The DROP interest crediting rate used to value the liability for account balances was increased from 1.5% to 2.0% to reflect the Board's adoption of these rates at its November 2017 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.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Expected administrative expenses are included in the actuarially determined contribution (ADC). The administrative expense component is \$11,787,500 for FY 2019 (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

An adjustment to the method for calculating the UAL amortization payment using a 5-year layering approach for specified bases was implemented, as voted by the SDCERS Board at the September 2017 meeting.

* *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).

* 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.

**SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017**

APPENDIX C – SUMMARY OF PLAN PROVISIONS

General Member Service Retirement Accrual Factors

Table C-1				
SDCERS - City of San Diego				
General Member Service Retirement Accrual Factors				
Retirement	Hired Before July 1, 2009			Hired on or After
<u>Age</u>	<u>Option 1</u>	<u>Option 2</u>	<u>Option 3</u>	<u>July 1, 2009</u>
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.

SDCERS-CITY OF SAN DIEGO
ACTUARIAL VALUATION AS OF JUNE 30, 2017

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Safety Member Service Retirement Accrual Factors

Table C-2				
SDCERS - City of San Diego				
Safety Member Service Retirement Accrual Factors				
	Police Hired Before July 1, 2009 Lifeguard Hired Before July 1, 2011 Fire Hired Before January 1, 2012			Police-2009 Lifeguard-2011 Fire-2012
Retirement	Police & Fire	Lifeguard	Safety	Police-2012
Age	Option 1	Option 1	Option 2	Police Prop 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:

Table C-3	
SDCERS - City of San Diego	
<u>For Vested Members who terminated--</u>	<u>--the accrual factors are--</u>
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

SDCERS-CITY OF SAN DIEGO
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APPENDIX C – SUMMARY OF PLAN PROVISIONS

SAFETY:

Table C-4 SDCERS - City of San Diego	
<u>For Vested Members who terminated--</u>	<u>--the accrual factors are--</u>
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				
<u>Age</u>	General	Safety		
		<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, 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 2011 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 2013, 2015, 2016 and 2017 for various economic and demographic assumption changes. Table C-6 and Table C-7 contain the contribution rates by Plan.

Table C-6 SDCERS - City of San Diego General Member Contribution Rates					
GENERAL			GENERAL		
Entry Age	Hired Before 7/1/2009	Hired On or After 7/1/2009	Entry Age	Hired Before 7/1/2009	Hired On or After 7/1/2009
20	8.58%	4.79%	40	11.63	10.06
21	8.69	5.02	41	11.72	10.29
22	8.87	5.26	42	11.81	10.51
23	9.09	5.52	43	12.09	10.76
24	9.31	5.77	44	12.32	10.99
25	9.53	6.03	45	12.54	11.22
26	9.74	6.30	46	12.73	11.44
27	9.95	6.57	47	12.90	11.66
28	10.18	6.85	48	13.05	11.86
29	10.41	7.14	49	13.18	12.05
30	10.62	7.43	50	13.30	12.22
31	10.82	7.72	51	13.39	12.36
32	11.01	8.01	52	13.46	12.48
33	11.19	8.30	53	13.31	12.56
34	11.35	8.59	54	13.12	12.61
35	11.61	8.88	55	12.84	12.47
36	11.56	9.15	56	12.59	12.19
37	11.51	9.39	57	12.34	11.93
38	11.49	9.62	58	12.34	11.93
39	11.54	9.84	59	12.34	11.93

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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	14.53%	12.69%	14.76%	12.69%	14.53%	12.89%	12.69%	10.63%	9.59%
21	14.65	13.07	14.87	13.07	14.65	13.27	13.07	10.96	10.02
22	14.90	13.41	15.12	13.41	14.90	13.61	13.41	11.23	10.52
23	15.21	13.73	15.40	13.73	15.21	13.94	13.73	11.51	11.05
24	15.52	14.05	15.68	14.05	15.52	14.28	14.05	11.79	11.62
25	15.83	14.38	15.96	14.38	15.83	14.61	14.38	12.06	12.10
26	16.13	14.71	16.23	14.71	16.13	14.94	14.71	12.33	12.46
27	16.41	15.03	16.47	15.03	16.41	15.27	15.03	12.60	12.78
28	16.69	15.35	16.69	15.35	16.69	15.59	15.35	12.87	13.06
29	16.96	15.66	16.88	15.66	16.96	15.91	15.66	13.13	13.34
30	17.20	15.97	17.04	15.97	17.20	16.21	15.97	13.39	13.60
31	17.31	16.30	16.95	16.30	17.31	16.55	16.30	13.66	13.88
32	17.49	16.58	16.88	16.58	17.49	16.84	16.58	13.89	14.12
33	17.71	16.81	16.87	16.81	17.71	17.07	16.81	14.10	14.32
34	17.89	17.00	16.92	17.00	17.89	17.26	17.00	14.24	14.49
35	18.10	17.21	17.10	17.21	18.10	17.48	17.21	14.42	14.67
36	18.34	17.43	17.33	17.43	18.34	17.70	17.43	14.62	14.86
37	18.60	17.68	17.57	17.68	18.60	17.95	17.68	14.82	15.09
38	18.89	17.95	17.85	17.95	18.89	18.23	17.95	15.05	15.32
39	19.18	18.23	18.12	18.23	19.18	18.52	18.23	15.28	15.55
40	19.48	18.50	18.40	18.50	19.48	18.79	18.50	15.52	15.79
41	19.84	18.85	18.74	18.85	19.84	19.14	18.85	15.80	16.08
42	20.16	19.15	19.03	19.15	20.16	19.45	19.15	16.06	16.35
43	20.43	19.42	19.30	19.42	20.43	19.73	19.42	16.28	16.57
44	20.67	19.65	19.52	19.65	20.67	19.95	19.65	16.47	16.76
45	20.93	19.89	19.77	19.89	20.93	20.21	19.89	16.67	16.97
46	20.55	19.53	19.42	19.53	20.55	19.84	19.53	16.37	16.67
47	20.29	19.29	19.17	19.29	20.29	19.59	19.29	16.17	16.46
48	20.02	19.02	18.91	19.02	20.02	19.32	19.02	15.95	16.23
49	19.72	18.74	18.63	18.74	19.72	19.04	18.74	15.71	15.99

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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 13th 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 13th 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 13th 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 7.00% to 6.75%.

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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