Classic Values, Innovative Advice

San Diego City Employees' Retirement System

San Diego County Regional Airport Authority

Actuarial Valuation Report as of June 30, 2018

Produced by Cheiron

December 2018

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Classic Values, Innovative Advice

December 20, 2018

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

Re: San Diego County Regional Airport Authority June 30, 2018 Actuarial Valuation

Dear Members of the Board:

We are pleased to submit the June 30, 2018 Actuarial Valuation Report for the San Diego City Employees' Retirement System (SDCERS). The valuation results with respect to the San Diego County Regional Airport Authority 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	Alice Alsberghe, ASA, MAAA
Principal Consulting Actuary	Associate Actuary

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

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

A. Valuation Basis

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

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

There were no other changes in plan provisions. The employee contribution rates and other plan provisions can be found in Appendix C.

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

SECTION I – BOARD SUMMARY

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

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

1. SDCERS-Airport Authority Assets, Liabilities and Contributions

Table I-1 presents a comparison between the June 30, 2018 and June 30, 2017 SDCERS-Airport Authority 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 11.6% compared to the actuarial value of assets increase of 11.4%, the funding ratio decreased slightly from 89.2% as of June 30, 2017 to 89.0% as of June 30, 2018. SDCERS employs a commonly used actuarial smoothing method on the market value that dampens market volatility, so the actuarial value of assets increased less than the market value of assets, which increased by 11.8%. Measuring the funding ratio on a market value of assets basis, the ratio would be 91.3% as of June 30, 2018, resulting in an improvement from a market value funding ratio of 91.1% as of June 30, 2017. Section II-C of this report provides additional information explaining the development of the actuarial value of assets.

There was an increase in the Actuarially Determined Contribution (ADC), from $5,740,270 to $6,159,297. 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 - Airport Authority - Assets, Liabilities and Contributions

	June 30, 2018	June 30, 2017	% Change
Actuarial Liability	$ 204,269,851	$ 183,077,245	11.6%
Actuarial Value Assets	$ 181,889,637	$ 163,315,728	11.4%
Unfunded Actuarial Liability-Actuarial Value	$ 22,380,213	$ 19,761,517	13.3%
Funding Ratio-Actuarial Value	89.0%	89.2%	-0.2%
Market Value Assets	$ 186,556,143	$ 166,843,561	11.8%
Unfunded Actuarial Liability-Market Value	$ 17,713,708	$ 16,233,684	9.1%
Funding Ratio-Market Value	91.3%	91.1%	0.2%
Actuarially Determined Contribution (ADC)	$ 6,159,297	$ 5,740,270	7.3%

SECTION I – BOARD SUMMARY

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

The unfunded actuarial liability (UAL) for SDCERS-Airport Authority increased by $2.6 million; from $19.8 million to $22.4 million. Table I-2 below presents the specific components of this change in the UAL.

The Plan's UAL was expected to decrease by $1.0 million. The largest component of change in the UAL was the change to the discount rate assumption (total of $6.4 million). Net asset experience was favorable, decreasing the UAL by $2.3 million. There was also a small liability experience gain, which decreased the UAL by $0.5 million.

Table I-2
SDCERS - Airport Authority-Change in UAL

1.	**UAL at June 30, 2017**	**$**	**19,761,517**
2.	Expected change in UAL		(993,940)
3.	Asset experience		
	a. Anticipated investment loss/(gain)		(961,003)
	b. Actual investment loss/(gain)[1]		(1,565,222)
	c. Employer and Member contributions paid greater than expected		(1,675,617)
	d. Net asset experience (b - a + c)		(2,279,835)
4.	Liability experience gain[1]		(506,652)
5.	Change in economic assumptions		6,399,124
6.	Other miscellaneous		(0)
7.	Total change in UAL: 2 + 3d + sum of 4 through 6		2,618,697
8.	**UAL at June 30, 2018: 1 + 7**	**$**	**22,380,213**

* *Combined impact from experience is an actuarial gain of $2,071,874 ($1,565,222 actual investment gain plus $506,652 actual liability experience gain).*

SECTION I – BOARD SUMMARY

3. SDCERS-Airport Authority Change in Contributions

The Airport Authority's actuarially determined contribution (ADC) for FY 2020 increased by $0.42 million, from $5.74 million to $6.16 million. The ADC would have been expected to decrease by $0.06 million, assuming continued phase-in of investment experience from prior years and no changes in assumptions.

There was, however, a significant change to the assumptions which was the primary cause of the increase to the ADC. The discount rate assumption was reduced from 6.75% to 6.50%, increasing the ADC by $0.77 million. A net asset experience gain decreased the ADC by $0.20 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 - Airport Authority-Change in ADC

1.	**ADC at June 30, 2017**	**$**	**5,740,270**
2.	Expected change in ADC		(62,936)
3.	Asset experience		
	a. Anticipated investment loss/(gain)		(85,057)
	b. Actual investment loss/(gain)		(138,535)
	c. Employer and Member contributions paid greater than expected		(148,306)
	d. Net asset experience (b - a + c)		(201,784)
4.	Liability experience gain		(85,956)
5.	Change in economic assumptions		769,702
6.	Other miscellaneous		0
7.	Total change in ADC: 2 + 3d + sum of 4 through 6		419,026
8.	**ADC at June 30, 2018: 1 + 7**	**$**	**6,159,297**

SECTION I – BOARD SUMMARY

4. Airport Authority Membership

Table I-4 shows that total membership in SDCERS-Airport Authority increased by 4.0% from 2017 to 2018. The increase was attributable to the growth in the inactive membership (terminated vested, disabled, retirees and beneficiaries), offset by active membership, which decreased by 4.1%. Expected active member total payroll decreased by 0.1%; however, the average pay per active member increased by 4.1%. The total benefits in pay status and average benefit increased significantly, by 22.3% and 2.2% respectively.

Note: The payroll figures shown below are the expected amounts for the fiscal year beginning July 1, 2018.

Table I-4
SDCERS - Airport Authority - Membership Total

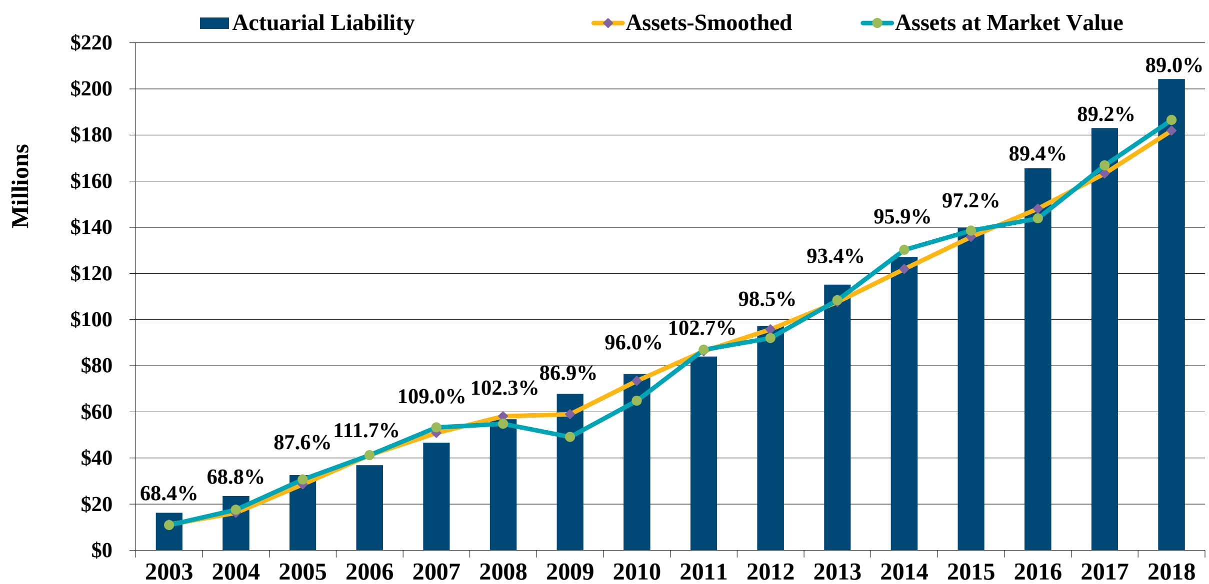
Valuation as of:	June 30, 2018	June 30, 2017	% Change
Active Counts	378	394	-4.1%
Terminated Vested	139	119	16.8%
Disabled	2	2	0.0%
Retirees	120	100	20.0%
Beneficiaries	6	5	20.0%
Total Airport Authority Members	645	620	4.0%
Active Member Payroll	$ 31,584,841	$ 31,628,301	-0.1%
Average Pay per Active Member	$ 83,558	$ 80,275	4.1%
Benefits in Pay Status	$ 5,768,246	$ 4,717,764	22.3%
Average Benefit	$ 45,064	$ 44,091	2.2%

C. Historical Trends SDCERS-Airport Authority

Despite the primary focus given each year on the most recently computed unfunded actuarial liability (UAL), funding ratio, and Airport Authority's 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 for both the market value and smoothed assets compared to actuarial liabilities, with SDCERS-Airport Authority funding ratios since 2003.

<u>SDCERS-Airport Authority Assets and Liabilities 2003 – 2018</u>



The chart indicates that in 2003 and 2004, the funding ratio was slightly more than 68% of the actuarial value of assets. In 2005 and 2006, the funding ratio significantly increased due to excess contributions and strong investment performance. In 2009, the funding ratio declined significantly to 86.9% due to investment losses; however, in 2010 there was a considerable increase in the funding ratio, to 96.0%, due to excess contributions.

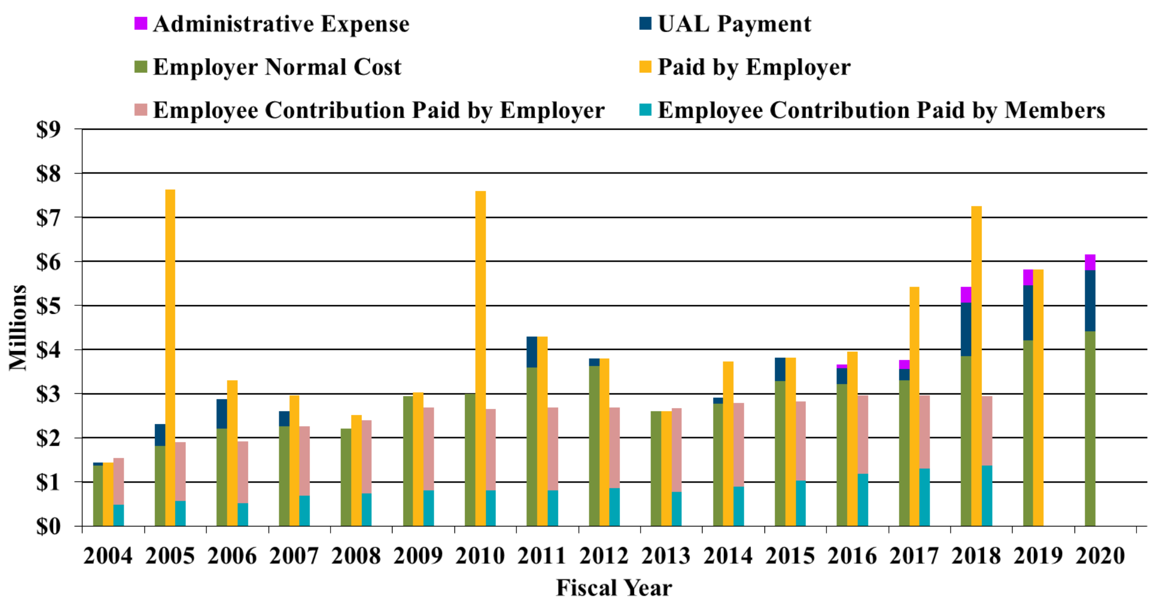
The funding ratio remained above 90% until 2016, dipping to 89.4% primarily due to changes in both demographic and economic assumptions. Despite excess contributions for fiscal years 2017 and 2018, the funding ratio remained below 90% given the reduction in the discount rate assumption in both years.

As mentioned earlier, the funding ratios represent the ratio of the smoothed (actuarial) assets over the actuarial liabilities. If the market value of assets were used instead, the funding ratio as of June 30, 2018 would be 91.3%.

SECTION I – BOARD SUMMARY

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

SDCERS-Airport Authority and Member Contributions FY 2004-2020



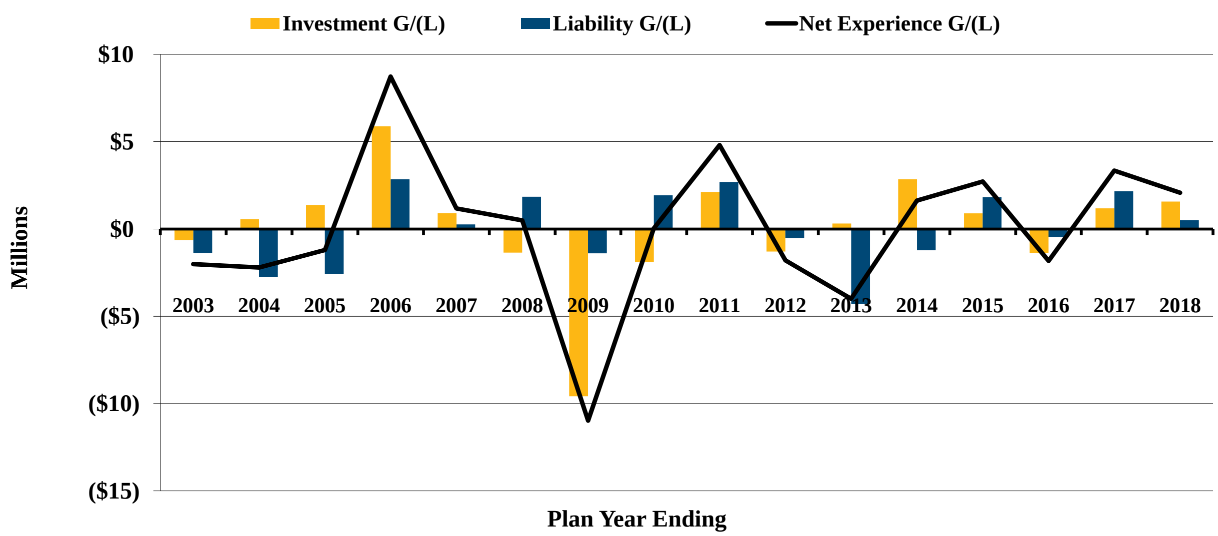
This chart compares the actual contributions made by the Airport Authority to the actuarially determined contributions (ADC). The ADC is broken out by component – Employer Normal Cost, plus UAL payment, plus administrative expenses. The contributions paid by the Airport Authority are based on the Board's 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 with FY 2016 to fund the administrative expenses. The chart indicates that the Airport Authority has been consistently paying at or above the ADC since FY 2004, with significant excess contribution amounts in FYs 2005, 2010, 2014, 2017, and 2018.

Employee contributions paid by the Airport Authority (pink bars) and paid by the Members (blue bars) are also shown in this chart. A substantial portion of employee contributions are "offset" (paid for) by the Airport Authority; however, such offsets are not permitted for New Members under PEPRA.

SECTION I – BOARD SUMMARY

The chart below for SDCERS-Airport Authority 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-Airport Authority Historical Gain/(Loss) 2003-2018



The key insights from this chart are:

- In 2004 through 2007 the System experienced investment gains (gold bars), depicted on an actuarial value of assets basis, which were more than offset by investment losses of 2008 through 2010.
- 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 fluctuated between gains and losses, which have generally been small relative to the total liability of the Plan. The 2013 liability loss, which was the most notable, was driven by salaries greater than expected.
- The small liability experience gain in 2018 was approximately 0.2% of the total liability.

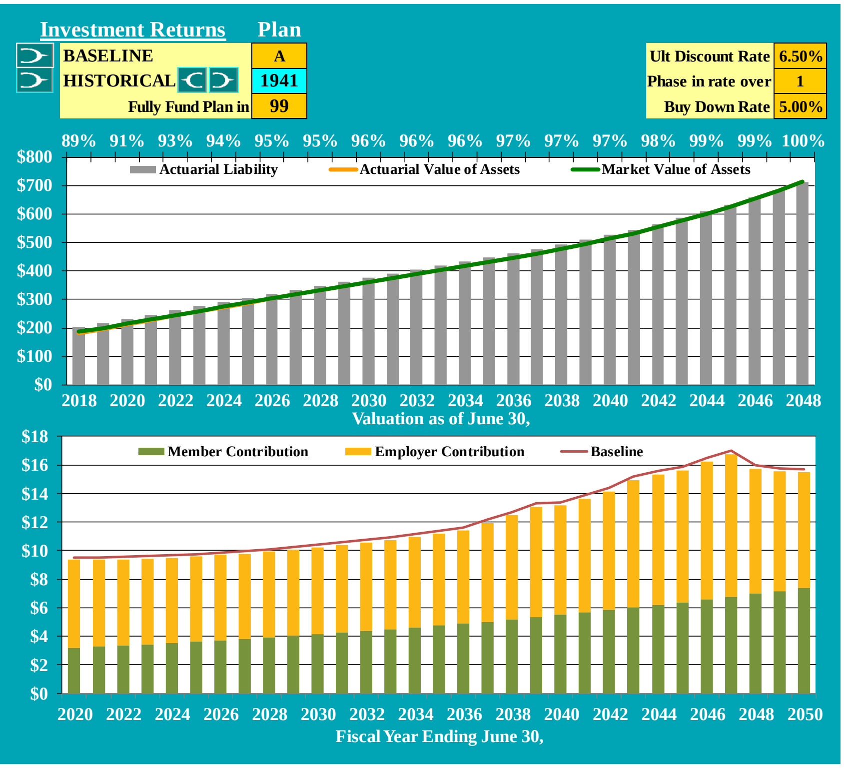
D. Projected Financial Trends

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

In the chart that follows, we project the SDCERS-Airport Authority assets and liabilities and the Airport Authority's contributions. These projections assume a 6.50% investment return and discount rate, as well as all experience conforming to the Plan's assumptions. 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-Airport Authority Projections FY 2019-2050 (earnings as assumed)

FYE	Return	Liab (G)/L	(mil) ADC	(mil) UAL	Disc Rate
2019	6.50%	0.0%	$ 5.7	$19.80	6.50%
2020	6.50%	0.0%	$ 6.2	$22.40	6.50%
2021	6.50%	0.0%	$ 6.1	$21.37	6.50%
2022	6.50%	0.0%	$ 6.0	$20.26	6.50%
2023	6.50%	0.0%	$ 6.0	$19.40	6.50%
2024	6.50%	0.0%	$ 6.0	$18.71	6.50%
2025	6.50%	0.0%	$ 6.0	$18.17	6.50%
2026	6.50%	0.0%	$ 6.0	$17.73	6.50%
2027	6.50%	0.0%	$ 6.0	$17.38	6.50%
2028	6.50%	0.0%	$ 6.0	$17.10	6.50%
2029	6.50%	0.0%	$ 6.1	$16.88	6.50%
2030	6.50%	0.0%	$ 6.1	$16.70	6.50%
2031	6.50%	0.0%	$ 6.2	$16.56	6.50%
2032	6.50%	0.0%	$ 6.2	$16.45	6.50%
2033	6.50%	0.0%	$ 6.3	$16.36	6.50%
2034	6.50%	0.0%	$ 6.3	$16.28	6.50%
2035	6.50%	0.0%	$ 6.4	$16.23	6.50%
2036	6.50%	0.0%	$ 6.5	$16.18	6.50%
2037	6.50%	0.0%	$ 6.9	$16.14	6.50%
2038	6.50%	0.0%	$ 7.3	$16.11	6.50%
2039	6.50%	0.0%	$ 7.7	$15.82	6.50%
2040	6.50%	0.0%	$ 7.7	$15.23	6.50%
2041	6.50%	0.0%	$ 8.0	$14.32	6.50%
2042	6.50%	0.0%	$ 8.3	$13.59	6.50%
2043	6.50%	0.0%	$ 8.9	$12.63	6.50%
2044	6.50%	0.0%	$ 9.1	$11.47	6.50%
2045	6.50%	0.0%	$ 9.3	$ 9.77	6.50%
2046	6.50%	0.0%	$ 9.7	$ 7.93	6.50%
2047	6.50%	0.0%	$ 10.0	$ 6.05	6.50%
2048	6.50%	0.0%	$ 8.8	$ 3.83	6.50%
2049	6.50%	0.0%	$ 8.4	$ 1.37	6.50%
2050	6.50%	0.0%	$ 8.1	$ 0.27	6.50%
N	6.50%	= average return			



Based on the assumed earnings, the Airport Authority's funded status (percentages at the top of the upper graph) is projected to reach 100% before the end of the projection period (30 years). The Airport Authority's ADC is projected to increase gradually during the period shown, and then decline towards the end of the period as 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

SECTION I – BOARD SUMMARY

from year to year. As a result, we present the following additional stress testing projection based on assuming varying returns in the future, which are 6.50% on average.

SDCERS-Airport Authority Projections FY 2019-2050 (earnings which vary by year)

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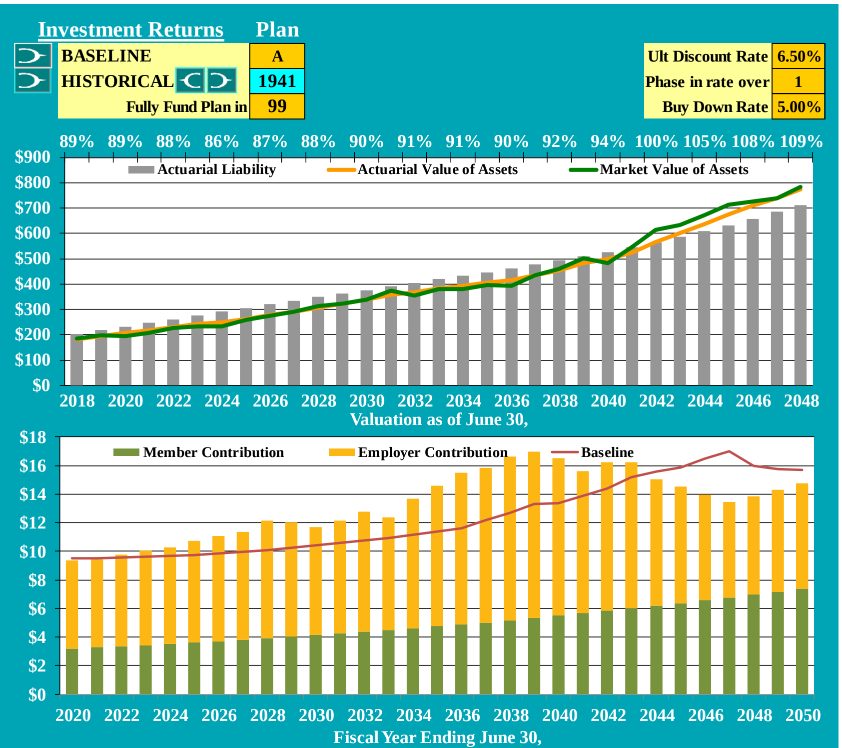
FYE	Return	Liab (G)/L	(mil) ADC	(mil) UAL	Disc Rate
2019	4.93%	0.0%	$ 5.7	$19.80	6.50%
2020	-1.90%	0.0%	$ 6.2	$22.40	6.50%
2021	6.46%	0.0%	$ 6.1	$22.11	6.50%
2022	8.23%	0.0%	$ 6.4	$25.87	6.50%
2023	3.65%	0.0%	$ 6.6	$29.19	6.50%
2024	-0.09%	0.0%	$ 6.7	$30.93	6.50%
2025	11.74%	0.0%	$ 7.1	$33.90	6.50%
2026	7.75%	0.0%	$ 7.4	$40.27	6.50%
2027	6.93%	0.0%	$ 7.5	$42.34	6.50%
2028	9.53%	0.0%	$ 8.2	$43.14	6.50%
2029	4.63%	0.0%	$ 8.0	$43.42	6.50%
2030	7.08%	0.0%	$ 7.5	$40.77	6.50%
2031	11.99%	0.0%	$ 7.9	$40.08	6.50%
2032	-2.54%	0.0%	$ 8.4	$39.49	6.50%
2033	10.07%	0.0%	$ 7.9	$33.97	6.50%
2034	2.25%	0.0%	$ 9.1	$37.11	6.50%
2035	6.35%	0.0%	$ 9.9	$37.00	6.50%
2036	1.98%	0.0%	$ 10.6	$39.71	6.50%
2037	12.51%	0.0%	$ 10.8	$41.15	6.50%
2038	8.08%	0.0%	$ 11.5	$45.74	6.50%
2039	10.99%	0.0%	$ 11.7	$43.14	6.50%
2040	-1.75%	0.0%	$ 11.1	$38.15	6.50%
2041	15.99%	0.0%	$ 10.0	$27.93	6.50%
2042	14.12%	0.0%	$ 10.4	$29.54	6.50%
2043	5.41%	0.0%	$ 10.2	$20.16	6.50%
2044	7.86%	0.0%	$ 8.8	$ 0.91	6.50%
2045	8.42%	0.0%	$ 8.2	#####	6.50%
2046	4.22%	0.0%	$ 7.4	#####	6.50%
2047	3.98%	0.0%	$ 6.7	#####	6.50%
2048	8.11%	0.0%	$ 6.9	#####	6.50%
2049	5.03%	0.0%	$ 7.1	#####	6.50%
2050	6.00%	0.0%	$ 7.3	#####	6.50%
N	6.50%	= average return			



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

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.

SECTION II – ASSETS

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

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

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

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

SECTION II – ASSETS

A. Disclosure of Market Value of Assets

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

Table II-1
SDCERS – All Employers
Summary of Reported Market Value of Total Defined Benefit Plan

Cash	$ 321,501,772
US Stocks	1,798,973,804
International Stocks	1,697,162,025
Private Equity	1,143,575,054
Bonds	2,574,477,478
Real Estate	837,875,276
Receivables	181,881,306
Miscellaneous	188,253,265
Accounts Payable	(656,709,038)
Market Value of Assets – June 30, 2018	**$ 8,086,990,942**

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, 2018

	Market Value Total Net Assets June 30, 2017	Market Value Total Net Assets June 30, 2018	Actuarial Value Total Assets June 30, 2018
City of San Diego	$ 7,000,219,655	$ 7,456,337,491	$ 7,214,925,011
Unified Port District	413,410,765	444,097,308	428,619,281
Airport Authority	166,843,561	186,556,143	181,889,637
Total-SDCERS	***$ 7,580,473,980***	***$ 8,086,990,942***	***$ 7,825,433,929***

SECTION II – ASSETS

C. Actuarial Value of Assets

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

The actuarial value of assets is equal to 100% of the expected actuarial value of assets as of June 30, 2018 plus 25% of the difference between the current actual market value of assets and the expected actuarial value of assets. (See Appendix B, Section B-2 for further explanation of the asset valuation method.) In no event will the actuarial value of assets ever be less than 80% of the market value of assets or ever greater than 120% of the market value of assets.

Table II-3
SDCERS - Airport Authority
Development of Actuarial Value of Assets at June 30, 2018
Expected Value of Assets Method

1. Actuarial Value of Assets at June 30, 2017	$	163,315,728
2. Amount in (1) with interest at 6.75% to June 30, 2018		174,339,540
3. Employer and Member contributions for the Plan Year ended June 30, 2018		10,481,327
4. Disbursements from Trust excluding investment expenses, June 30, 2017 through June 30, 2018		4,805,455
5. Interest on cash flows to June 30, 2018 at 6.75% per year		318,723
6. Expected Actuarial Value of Assets at June 30, 2018 = (2) + (3) – (4) + (5)		180,334,136
7. Actual Market Value of Assets at June 30, 2018		186,556,143
8. Excess of (7) over (6)		6,222,008
9. Preliminary Actuarial Value of Assets at June 30, 2018 = (6) + 25% of (8)	$	181,889,637
10. 80% Minimum Corridor on the Actuarial Value of Assets = 80% of (7)		149,244,915
11. 120% Maximum Corridor on the Actuarial Value of Assets = 120% of (7)		223,867,372
12. Final Actuarial Value of Assets at June 30, 2018 = (9), but no less than (10) and no more than (11)	$	181,889,637

D. Investment Performance

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

On an actuarial (smoothed) value of assets basis, the return for FY 2018 was 8.09%. This return produced for SDCERS-All Employers an overall investment gain of $86.2 million for the year ending June 30, 2018. (Note: this reported gain is different than the investment gain of $1.6 million reported in Table I-2 in this report. $1.6 million is the gain only for SDCERS-Airport Authority).

SECTION III – LIABILITIES

In this section, we present detailed information on System liabilities for SDCERS-Airport Authority including:

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

A. Disclosure

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

- **Present Value of Future Benefits:** Used for measuring all future SDCERS-APA obligations, represents the amount of money needed today to fully fund all benefits of SDCERS-APA 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. Table III-2 breaks 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-3 discloses the third of these liabilities, present value of accrued benefits, for the current and prior year valuations.

SECTION III – LIABILITIES

Table III-1
SDCERS - Airport Authority - Total

Valuation as of:		June 30, 2018		June 30, 2017
Present Value of Future Benefits				
Actives	$	160,008,846	$	155,051,831
Terminated Vested		11,469,689		9,791,622
Disabled		536,133		522,820
Retirees		80,098,144		63,602,504
Beneficiaries		1,291,814		1,242,349
Total Airport Authority	**$**	**253,404,626**	**$**	**230,211,126**
Actuarial Liability - EAN				
Total Present Value of Future Benefits	$	253,404,626	$	230,211,126
Present Value of Future Normal Costs				
Employer Portion		28,983,546		26,988,076
Employee Portion		20,151,229		20,145,806
Actuarial Liability - EAN	**$**	**204,269,851**	**$**	**183,077,245**
Actuarial Value of Assets	$	181,889,637	$	163,315,728
Unfunded EAN Actuarial Liability	**$**	**22,380,213**	**$**	**19,761,517**

Table III-2 shows actuarial liability as of June 30, 2018 for General, PEPRA and Executive Members of SDCERS-Airport Authority

Table III-2
SDCERS - Airport Authority as of June 30, 2018

		Total		General		PEPRA		Executives
Present Value of Future Benefits								
Actives	$	160,008,846	$	135,978,137	$	18,205,134	$	5,825,575
Terminated Vested		11,469,689		11,205,181		264,509		0
Disabled		536,133		536,133		0		0
Retirees		80,098,144		68,205,054		0		11,893,091
Beneficiaries		1,291,814		1,266,466		25,348		0
Total Airport Authority	**$**	**253,404,626**	**$**	**217,190,970**	**$**	**18,494,991**	**$**	**17,718,665**
Actuarial Liability - EAN								
Actives	$	110,874,071	$	102,677,812	$	4,078,922	$	4,117,336
Terminated Vested		11,469,689		11,205,181		264,509		0
Disabled		536,133		536,133		0		0
Retirees		80,098,144		68,205,054		0		11,893,091
Beneficiaries		1,291,814		1,266,466		25,348		0
Total Airport Authority	**$**	**204,269,851**	**$**	**183,890,645**	**$**	**4,368,779**	**$**	**16,010,427**

SECTION III – LIABILITIES

Table III-3 shows the present value of accrued benefits as of June 30, 2018 for all Members of SDCERS-Airport Authority.

Table III-3
SDCERS - Airport Authority - Present Value of Accrued Benefits

Valuation as of:	June 30, 2018	June 30, 2017	% Change
1. Present Value of Accrued Benefits			
a. Members Currently Receiving Payments	$ 81,926,091	$ 65,367,673	25.3%
b. Vested Terminated and Inactive Members	11,469,689	9,791,622	17.1%
c. Active Members	81,210,133	77,820,142	4.4%
d. Total PVAB	$ 174,605,913	$ 152,979,438	14.1%
2. Assets at Market Value	$ 186,556,143	$ 166,843,561	11.8%
3. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero	$ 0	$ 0	
4. Ratio of Assets to Value of Benefits (2)/(1)(d)	106.84%	109.06%	-2.3%

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-4
Development of 2018 Experience Gain/(Loss) SDCERS - Airport Authority
(In Thousands)

1.	Unfunded Actuarial Liability at June 30, 2017		$ 19,761.5
2.	Beginning of year Unfunded Actuarial Liability payment		(1,280.4)
3.	Interest accrued ((1+2) x 6.75%)		1,247.5
4.	Expected Unfunded Actuarial Liability at June 30, 2018 (1+2+3)		19,728.6
5.	Actual Unfunded Liability at June 30, 2018		22,380.2
6.	Difference: (4 - 5)		(2,651.6)
7.	Portion of difference (6) due to actuarial assumption or method changes		(6,399.1)
8.	Portion of difference (6) due to plan changes		0
9.	Portion of difference (6) due to contributions greater than expected		1,675.6
10.	Portion of difference (6) due to net experience Gain/(Loss)		2,071.9
	a) portion of (10) due to investment experience	*$ 1,565.2*	
	b) portion of (10) due to liability experience	*$ 506.7*	
	c) portion of (10) due to service purchases	*$ 0*	

SECTION III – LIABILITIES

Table III-5 shows the history of past experience gains and losses.

Table III-5
Experience Gain/(Loss) - Historical SDCERS - Airport Authority

Valuation Date	Gain/(Loss)	Beginning-of-Year Actuarial Liabilities	Gain/(Loss) % of Liability
6/30/2003	$ (2,013,702)	$ 11,526,293	-17.5%
6/30/2004	(2,204,850)	16,278,613	-13.5%
6/30/2005	(1,207,448)	23,578,460	-5.1%
6/30/2006	8,732,864	32,602,898	26.8%
6/30/2007	1,176,387	36,905,216	3.2%
6/30/2008	492,707	46,636,555	1.1%
6/30/2009	(10,976,099)	56,807,663	-19.3%
6/30/2010	27,790	67,870,945	0.0%
6/30/2011	4,808,814	76,447,473	6.3%
6/30/2012	(1,801,741)	84,042,425	-2.1%
6/30/2013	(3,923,241)	97,224,854	-4.0%
6/30/2014	1,621,374	115,200,048	1.4%
6/30/2015	2,722,867	127,174,087	2.1%
6/30/2016	(1,829,250)	139,786,634	-1.3%
6/30/2017	3,347,379	165,666,873	2.0%
6/30/2018	2,071,874	183,077,245	1.1%

SECTION IV – CONTRIBUTIONS

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

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

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

In January 2015 the Board voted to account for expected administrative expenses explicitly in the actuarially determined contribution (ADC). The administrative expense component is $367,719 for FY 2020 (assuming payment at the beginning of the year). This amount is assumed to increase by 2.5% per year.

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

SECTION IV – CONTRIBUTIONS

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

		WEIGHTED TOTAL AIRPORT	General	PEPRA	Executives
1.	Total Normal Cost Rate as of June 30, 2018	**24.17%**	27.00%	18.40%	30.02%
2.	Member Contribution Rate as of June 30, 2018	**9.72%**	10.08%	9.09%	9.55%
3.	Employer Normal Cost Rate as of June 30, 2018 (1-2)	**14.45%**	16.92%	9.31%	20.47%
4.	Actuarial Liability	**$ 204.3**	$ 183.9	$ 4.4	$ 16.0
5.	Actuarial Assets	**$ 181.9**	$ 163.7	$ 3.9	$ 14.3
6.	Total Unfunded Actuarial Liability (UAL) (4-5) [1]	**$ 22.4**	$ 20.1	$ 0.5	$ 1.8
7.	Preliminary FY20 UAL amortization [1]	**$ 0.6**	$ 0.5	$ 0.0	$ 0.0
8.	Negative Amortization Test for FY20				
	a. Total UAL on 6/30/18 less FY19 UAL payment	**$ 21.1**	$ 19.0	$ 0.5	$ 1.7
	b. Interest on 8a. To 6/30/19	**$ 1.4**	$ 1.2	$ 0.0	$ 0.1
	c. Preliminary FY20 UAL amortization (line 7)	**$ 0.6**	$ 0.5	$ 0.0	$ 0.0
	d. Negative interest (8b - 8c, not less than zero)	**$ 0.8**	$ 0.7	$ 0.0	$ 0.1
9.	Total FY20 UAL payment on 7/01/19 (8c + 8d)	**$ 1.4**	$ 1.2	$ 0.0	$ 0.1
10.	Total FY20 UAL payment throughout year	**$ 1.4**	$ 1.3	$ 0.0	$ 0.1
11.	Total Expected Payroll for FY20	**$ 33.0**	$ 18.0	$ 14.0	$ 1.0
12.	FY20 Normal Cost paid throughout the year	**$ 4.6**	$ 3.0	$ 1.3	$ 0.2
13.	FY20 Normal Cost paid at start of year	**$ 4.4**	$ 3.0	$ 1.3	$ 0.2
14.	Administrative Expenses paid throughout the year	**$ 0.4**	$ 0.3	$ 0.1	$ 0.0
15.	Determination of FY20 ADC %				
	a. Employer Normal Cost Rate (12 divided by 11)	**13.80%**	16.92%	9.31%	20.47%
	b. UAL Rate (line 10 divided by line 11)	**4.29%**	7.08%	0.22%	11.09%
	c. Admin Expense Rate (line 14 divided by line 11)	**1.15%**	1.52%	0.61%	2.00%
	d. Total employer ADC % (15a + 15b + 15c)	**19.24%**	25.53%	10.13%	33.57%
16.	Determination of FY20 ADC dollars				
	a. FY20 ADC if paid throughout year	**$ 6.4**	$ 4.6	$ 1.4	$ 0.3
	b. FY20 ADC if paid at beginning of year	**$ 6.2**	$ 4.5	$ 1.4	$ 0.3

[1] *See Table IV-2 for components of these amounts.*
Note: Numbers may not add due to rounding.

SECTION IV – CONTRIBUTIONS

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

Table IV-2
SDCERS - Airport Authority
Schedule of Amortization Bases as of July 1, 2018
Used in Development of the Airport Authority's Contribution for FY 2020

Type of Base	Date Established	Initial Amount	Initial Amortization Years	July 1, 2018 Outstanding Balance	FY 2020 Outstanding Balance (BOY) [1]	Remaining Amortization Years	FY 2020 Amortization Payment (BOY)
1. June 30, 2007 UAL	7/1/2007	$ (4,175,587)	14	$ (2,133,076)	$ (1,673,400)	3	$ (576,266)
2. Assumption Change	7/1/2008	2,808,340	30	3,312,363	3,293,996	20	221,186
3. Experience Gain	7/1/2008	(1,356,123)	15	(927,431)	(808,244)	5	(172,467)
4. Experience Loss	7/1/2009	9,892,984	15	7,461,110	6,687,347	6	1,208,287
5. Experience Gain	7/1/2010	(5,002,725)	15	(4,076,307)	(3,729,299)	7	(586,803)
6. Experience Gain [2]	7/1/2010	(1,750,000)	15	(1,425,930)	(1,304,544)	7	(205,269)
7. Experience Gain	7/1/2011	(4,235,009)	15	(3,670,326)	(3,410,826)	8	(477,078)
8. Assumption Change	7/1/2011	(574,045)	30	(656,779)	(657,021)	23	(40,073)
9. Experience Loss	7/1/2012	2,533,950	15	2,312,697	2,175,825	9	274,802
10. Method Change	7/1/2012	1,443,033	30	1,632,543	1,635,821	24	96,999
11. Experience Loss	7/1/2013	4,086,907	15	3,889,257	3,695,658	10	426,686
12. Assumption Change	7/1/2013	1,620,447	30	1,810,034	1,816,393	25	104,885
13. Experience Gain	7/1/2014	(2,736,843)	15	(2,702,995)	(2,589,584)	11	(276,053)
14. Experience Gain	7/1/2015	(2,751,012)	15	(2,800,501)	(2,701,482)	12	(268,088)
15. Assumption Change	7/1/2015	1,620,846	30	1,770,867	1,781,812	27	98,000
16. Experience Loss	7/1/2016	1,348,266	15	1,408,177	1,366,333	13	127,096
17. Assumption Change	7/1/2016	12,382,535	30	13,371,793	13,470,291	28	724,491
18. Experience Gain	7/1/2017	(4,573,974)	15	(4,882,717)	(4,761,435)	14	(417,590)
19. Assumption Change	7/1/2017	5,776,349	30	6,166,253	6,218,456	29	327,452
20. Experience Gain	7/1/2018	(3,877,943)	15	(3,877,943)	(4,130,009)	15	(343,229)
21. Assumption Change	7/1/2018	6,399,124	30	6,399,124	6,815,067	30	351,740
TOTAL				**$ 22,380,213**	**$ 23,191,157**		**$ 598,705**

[1] *July 1, 2018 outstanding balance adjusted to the FY2020 beginning of year (BOY), July 1, 2019.*
[2] *Reduction in UAL from anticipated impact of PSC correction as of the June 30, 2010 valuation.*

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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, 2018, issued on November 16, 2018.

Table V-1
SDCERS - Airport Authority
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, 2018
Investment Income	$ 1,565,222
Combined Liability Experience	506,652
Gain (or Loss) During Year from Financial Experience	$ 2,071,874
Non-Recurring Gain (or Loss) Items (e.g., Contributions, Assumption Changes)	(4,723,507)
Composite Gain (or Loss) During Year	$ (2,651,634)

SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORT INFORMATION

Table V-2
SDCERS - Airport Authority

Schedule of Funded Liabilities by Type
($ in thousands)

Valuation Date June 30,	(A) Active Member Contributions	(B) Retirees And Beneficiaries	(C) Remaining Active Members' Liabilities	Reported Assets [1]	Portion of Actuarial Liabilities Covered by Reported Assets (A)	(B)	(C)
2018 [5]	$ 14,815	$ 81,926	$ 107,529	$ 181,890	100%	100%	79.19%
2017 [5]	14,393	65,368	103,316	163,316	100	100	80.87
2016 [5]	14,073	50,999	100,595	148,084	100	100	82.52
2015 [5]	14,033	39,380	86,373	135,859	100	100	95.45
2014	12,949	34,430	79,795	121,918	100	100	93.41
2013 [5]	13,384	26,779	75,037	107,616	100	100	89.89
2012	11,371	22,438	63,416	95,793	100	100	97.74
2011 [5]	11,132	16,133	56,778	86,309	100	100	103.99
2010	10,611	11,832	54,004	73,401	100	100	94.36
2009	9,120	9,924	48,827	58,981	100	100	81.79
2008 [5]	7,335	6,341	43,131	58,096	100	100	102.99
2007 [4]	6,681	4,288	35,668	50,812	100	100	111.71
2006 [3]	5,402	2,783	28,720	41,222	100	100	115.03
2005	4,255	2,713	25,635	28,551	100	100	84.19
2004	2,935 [2]	795	19,848	16,225	100	100	62.95

[1] *Actuarial Value of Assets.*
[2] *Estimated.*
[3] *Reflects contingent liabilities (13th check), DROP 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.*

APPENDIX A – MEMBERSHIP INFORMATION

Table A-1
Reconciliation of Member Data
Airport Authority

	Active	Terminated Vested	Terminated Non-Vested	Disabled	Retired	Beneficiaries	DROP	Totals
Participants as of 7/1/2017	**394**	**55**	**64**	**2**	**80**	**5**	**20**	**620**
New Entrants	34	0	0	0	0	0	0	34
Returned to Work	1	0	(1)	0	0	0	0	0
Vested Terminations	(8)	9	(1)	0	0	0	0	0
Non-Vested Terminations	(16)	0	16	0	0	0	0	0
Retirements	(9)	(2)	0	0	13	0	(2)	0
DROP	(9)	0	0	0	0	0	9	0
Disabilities	0	0	0	0	0	0	0	0
New Continuants	0	0	0	0	0	0	0	0
New Dissolutions [1]	0	0	0	0	0	0	0	0
Benefits Ceased [2]	(2)	0	0	0	0	0	0	(2)
Lump Sum Cashout	(3)	(1)	0	0	0	0	0	(4)
Transferred Out	0	0	0	0	0	0	0	0
Miscellaneous Adjustments	(4)	0	0	0	0	1	0	(3)
Participants as of 7/1/2018	**378**	**61**	**78**	**2**	**93**	**6**	**27**	**645**

[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.*

APPENDIX A – MEMBERSHIP INFORMATION

Table A-2
SDCERS - Airport Authority
Active Member Data

	June 30, 2018	June 30, 2017	% Change
Count	378	394	-4.1%
Average Current Age	46.8	46.8	0.0%
Average Service	9.2	9.0	2.2%
Average Pensionable Earnings	$ 83,558	$ 80,275	4.1%
Annual Pensionable Earnings	$ 31,584,841	$ 31,628,301	-0.1%
Average Valuation Compensation[1]	$ 83,558	$ 80,275	4.1%
Annual Valuation Compensation[1]	$ 31,584,841	$ 31,628,301	-0.1%
Average Service Without Purchased Service	9.0	8.7	3.4%
Members with Paid Purchased Service	27	27	0.0%
Members with Any Purchased Service	27	27	0.0%
Amount of Paid Purchased Service	89	99	-10.2%
Amount of Total Purchased Service	91	102	-10.7%

[1] *The definition of valuation compensation differs from pensionable earnings due to IRS 401(a).*

APPENDIX A – MEMBERSHIP INFORMATION

Table A-3
SDCERS - Airport Authority
Non-Active Participant Data

	Count			Average Age		
	June 30, 2018	June 30, 2017	%Change	June 30, 2018	June 30, 2017	%Change
Retired [1]	120	100	20.0%	66.2	65.9	0.5%
Disabled	2	2	0.0%	62.6	61.6	1.6%
Beneficiaries	6	5	20.0%	66.9	65.1	2.8%
Payee Total	128	107	19.6%	66.2	65.8	0.6%
DROP Participants	27	20	35.0%	62.2	61.6	1.0%
Deferred Vested [2]	139	119	16.8%	45.6	46.3	-1.5%
Vested < 5 yrs svc	78	64	21.9%			

[1] *Includes DROP participants.*

[2] *Includes all participants having a contribution balance still on account with SDCERS.*

Table A-4
SDCERS - Airport Authority
Non-Active Participant Data

	Total Annual Benefit			Average Annual Benefit		
	June 30, 2018	June 30, 2017	%Change	June 30, 2018	June 30, 2017	%Change
Retired [1]	$ 5,631,213	$ 4,585,571	22.8%	$ 46,927	$ 45,856	2.3%
Disabled	37,816	37,088	2.0%	18,908	18,544	2.0%
Beneficiaries	99,216	95,106	4.3%	16,536	19,021	-13.1%
Payee Total	$ 5,768,246	$ 4,717,765	22.3%	$ 45,064	$ 44,091	2.2%
DROP Participants	$ 1,479,654	$ 1,027,120	44.1%	$ 54,802	$ 51,356	6.7%
Deferred Vested [2]	$ 3,221,978	$ 2,784,854	15.7%	$ 23,180	$ 23,402	-1.0%

[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 in account as of the valuation date.*

APPENDIX A – MEMBERSHIP INFORMATION

Table A-5
SDCERS - Airport Authority
Distribution of Active Members (Excludes DROP Participants) as of June 30, 2018
Total Airport Authority

Age	Years of Service 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	Total Count	Average Salary
Under 25	-	3	-	-	-	-	-	-	-	-	3	$ 49,679
25 to 29	9	13	1	-	-	-	-	-	-	-	23	60,859
30 to 34	8	26	9	-	-	-	-	-	-	-	43	65,560
35 to 39	2	17	10	6	1	-	-	-	-	-	36	77,253
40 to 44	4	20	6	14	8	-	-	-	-	-	52	85,268
45 to 49	4	11	15	19	10	3	2	-	-	-	64	95,216
50 to 54	2	10	8	10	13	6	6	1	-	-	56	92,296
55 to 59	1	13	5	19	13	6	2	1	-	-	60	89,843
60 to 64	-	3	6	10	6	3	2	-	-	-	30	86,733
65 to 69	1	1	1	6	1	-	-	-	-	-	10	98,908
70 and up	-	-	1	-	-	-	-	-	-	-	1	108,173
Tot Count	31	117	62	84	52	18	12	2	-	-	378	
Avg. Salary	$ 78,143	$ 77,023	$ 82,115	$ 88,928	$ 91,857	$ 107,568	$ 86,215	$ 96,290	$ -	$ -		$ 84,485

APPENDIX A – MEMBERSHIP INFORMATION

Table A-6
SDCERS - Airport Authority
Retirees (Includes DROP Participants), Disabled, and Beneficiaries Tabulated by Attained Age/Benefit Effective Date
Total Airport Authority

	Age										
Plan Year	Under 50	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 and up	Total
pre-2007	-	-	1	-	4	5	6	1	-	-	17
2009	-	-	-	1	1	2	-	-	-	-	4
2010	-	-	-	1	1	4	-	-	-	-	6
2011	-	-	-	-	7	3	-	-	-	-	10
2012	-	-	-	2	4	2	-	-	-	-	8
2013	-	-	-	4	2	1	-	-	-	-	7
2014	-	-	3	2	8	-	-	-	-	-	13
2015	-	-	1	1	7	-	1	-	-	-	10
2016	-	-	5	6	3	1	1	-	-	-	16
2017	-	-	5	9	6	-	-	-	-	-	20
2018	-	-	3	9	4	1	-	-	-	-	17
Total	-	-	18	35	47	19	8	1	-	-	128

Average Age at Retirement/Disability	5.4
Average Current Age	66.2
Average Annual Pension	$ 45,064

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 the projected FY 2019 Annual Comp as provided in the supplemental file "SDCRAA FY19 Projected Compensation.xlsx" and "Current Fiscal Year Pensionable Salary" or 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 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 PEPRA 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

APPENDIX A – MEMBERSHIP INFORMATION

supplemental file, the maximum of the annualized pay over the prior year and the last four fiscal years' pensionable salaries was used.

- 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 Relation 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, 2018. These COLA increases were provided in a supplemental file and incorporated into the benefit amounts.

- Members may retire and receive benefits from multiple plans (e.g., a City Police Officer could have also worked for the Airport Authority); we will value each Member's blended benefit individually. This will result in the counts being slightly higher than actual counts due to people having more than one benefit payable from multiple plans.

- We assume any retiree found in last year's "Payee" file and not in this year's file has died without a beneficiary and should be removed from the valuation data.

- We assume all deceased retirees with payments continuing to a beneficiary have already been accounted for in the "Payee" file.

- We exclude any payee receiving $0.00 from a blended benefit plan.

- The Final 415 Regulations were used to calculate the present value of Member benefits over the Internal Revenue Service Code 415 Benefit Limits.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

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

1. Investment Return

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

2. Inflation Rate

An inflation assumption of 3.05% compounded annually is used for projecting the total annual payroll growth for amortization of the UAL.

3. Administrative Expense

Administrative expenses are assumed to be $367,719 for FY 2020 (assuming payment at the beginning of the year), increasing by 2.50% annually.

4. Interest Credited to Member Contributions

6.50%, compounded annually.

5. Salary Increase Rate

Inflation component: 3.05% (Freezes were assumed for FYs 2013 and 2014).

The additional merit component:

Table B-1

Years of Service at Valuation Date	General
0	5.00%
1	4.00%
2	3.00%
3	2.00%
4	1.00%
5+	0.50%

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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, a 2.5% load is applied on the normal cost for future member contributions. For PEPRA Participants, the normal cost of the COL annuity benefit is equal to one-sixth of the employee contribution rate.

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.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

9. Rates of Termination

Table B-2
SDCERS - Airport Authority

Rates of Termination

Service	General
0	11.00%
1	10.00
2	9.00
3	8.00
4	7.00
5	5.50
6	4.50
7	4.50
8	4.00
9	4.00
10+	3.00

10% of terminating employees, with 5+ years of service at termination, are assumed to subsequently work for a reciprocal employer and receive 3.55% pay increases per year.

No terminations are assumed once retirement eligible.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

10. Rates of Disability

Table B-3
SDCERS - Airport Authority
Rates of Disability at Selected Ages

Age	General
20	0.01%
25	0.02
30	0.03
35	0.04
40	0.05
45	0.08
50	0.15
55	0.20
60	0.30

75% of the 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- 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 - Airport Authority
Rates of Mortality for Active Lives at Selected Ages

Age	Male	Female
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

All active Member deaths are assumed to not be duty-related.

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 - Airport Authority
Rates of Mortality for Retired Healthy Lives at Selected Ages

Age	Male	Female
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 - Airport Authority
Rates of Mortality for Disabled Lives at Selected Ages

Age	Male	Female
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
90	13.54	10.38

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

14. Rates of Retirement

Rates of Retirement are shown in the table below. Retirement rates include both service retirements and entry into DROP.

Table B-7
SDCERS - Airport Authority
Rates of Retirement by Service Years

Service	Prior to age 62	Age 62 or Greater
5-9	--	15.0%
10	--	33.0
11	--	33.0
12	--	33.0
13	--	33.0
14	--	33.0
15	--	40.0
16	--	40.0
17	--	40.0
18	--	40.0
19	--	40.0
20	30.0	45.0
21	15.0	47.0
22	17.5	49.0
23	20.0	51.0
24	22.5	53.0
25	22.5	55.0
26	22.5	57.0
27	25.0	59.0
28	25.0	61.0
29	30.0	63.0
30	30.0	65.0
31	40.0	67.0
32	40.0	69.0
33	40.0	71.0
34	40.0	73.0
35+	100.0	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 five years of service on the later of attained age or the earlier of age 62 or age 55 and 20+ years of service.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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.

16. Member Contributions for Spousal Continuance

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

17. Deferred Member Benefit

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

18. DROP Account Balances

For DROP participants still working, the liability for the account balances in the asset information received from SDCERS staff was adjusted to assume average commencement in 2½ years and an interest crediting rate of 2.7%. Thereafter, it was assumed the account balance would be converted to an annuity at an interest rate of 3.0% over an average period of 10 years. The 10-year period was selected to average among the available DROP payment elections, including a lump sum, life expectancy, and 20 years. The liability for pre-2006 DROP account balances still left on account was valued assuming they would be paid out until age 70½, with an interest crediting rate of 2.7%. The liability for the remaining account balances was adjusted based on the DROP annuity rate in effect at the Member's benefit effective date.

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

19. Other

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

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

20. Changes Since Last Valuation

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

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

B. Actuarial Methods

1. Actuarial Funding Method

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

The unfunded actuarial liability is amortized by annual payments. The payments are determined so that they will be a level percentage of pay, assuming payroll increases of 3.05% per year. The UAL is amortized over different closed periods depending on the source of the loss. The entire UAL as of June 30, 2007 is amortized over 14 years. Subsequent gains and losses are amortized over 15 years, changes in assumptions over 30 years, and changes in benefits over 20 years (or period over which benefit changes are paid, if shorter). Funding surplus, if any, is amortized over 30 years. Finally, if necessary,

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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

Expected administrative expenses are included in the actuarially determined contribution (ADC). The administrative expense component is $367,719 for FY 2020 (assuming payment at the beginning of the year). This amount is assumed to increase by 2.5% per year.

2. Asset Valuation Method

For the purposes of determining the Airport Authority'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 use of retirement benefits and expenses.

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

3. Changes Since Last Valuation

None.

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

APPENDIX C – SUMMARY OF PLAN PROVISIONS

The Airport Authority was spun off from the Unified Port District effective January 1, 2003. Existing liabilities and assets were transferred to the new plan based on an interim valuation dated December 31, 2002. The Airport Authority Plan is created pursuant to San Diego City Charter section 149, which became effective on April 24, 2002, and San Diego Municipal Code Chapter 2, Article 4, section 24.0912 and Division 18. This Plan is effective on January 1, 2003, and nothing in this Plan should be constructed to affect any rights or benefits Airport Authority employees have earned in this Retirement System as of that date.

1. Membership Requirement

Membership is mandatory upon first day of employment for all full-time Airport employees (§0103).*

Classic Participant means any Member who is not a PEPRA Participant (§0102).

PEPRA Participant means any Member hired on or after January 1, 2013 who has never been a member of a public retirement system or who had a break in service of more than six months before their Airport hire date (§0102).

2. Monthly Salary Base for Benefits

Classic Participants:
Highest contiguous 26 bi-weekly pay periods divided by 12 (§0102), subject to a 10% increase for employees who were both a UPD employee on December 31, 2002 and became an Airport employee on or after January 1, 2003 and were employed by the UPD and contributing to SDCERS on January 1, 2002, if the Member elects such increase in lieu of an increased benefit formula.

PEPRA Participants:
Highest 36 consecutive months divided by 36 (§0102). Base Salary cannot exceed 100% of the Social Security contribution and benefit base, indexed to the CPI-U.

3. Service Retirement

Eligibility

Classic Participants:
Age 62 with five years of service (excludes five-year permissible purchased service), or age 55 with 20 years of service (§0300).

PEPRA Participants:
Age 52 with five years of service (§0300).

* All "§" references are to the Airport Authority Plan Document.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Benefit

Classic Participants:
Member choice of: (1) formula in place on December 31, 2001 with 10% increase in Final Average Compensation, (2)"Andrecht" formula effective as of January 1, 2002, or (3) "2.5% at 55" multiplier with a benefit cap of 90% of Final Average Compensation effective April 1, 2004 for Non-Executive General Members. Executive Members receive "3% at 55" multiplier without an increase in Final Average Compensation.

PEPRA Participants:
1% per year of service at age 52, increasing to 2.5% at age 67, not to exceed 90% of Final Compensation (§0300).

For all employees, there is an additional benefit equal to the annuitized Member COL Annuity contributions at retirement date.

In all cases, there is an integration feature which provides for 2/3 of the formula multiplier on the first $400 of monthly Final Average Compensation. The 2/3 equals the Social Security integration factor.

Member Service Retirement Accrual Factors

Table C-1
SDCERS - Airport Authority
Member Service Retirement Accrual Factors

Age	Pre 12/31/2001	Andrecht	Post 4/1/2004	Executive	Post 1/1/2013
52	--	--	--	--	1.00%
53	--	--	--	--	1.10%
54	--	--	--	--	1.20%
55	2.00%	2.25%	2.50%	3.00%	1.30%
56	2.00%	2.25%	2.60%	3.00%	1.40%
57	2.00%	2.25%	2.70%	3.00%	1.50%
58	2.00%	2.25%	2.80%	3.00%	1.60%
59	2.08%	2.25%	2.90%	3.00%	1.70%
60	2.16%	2.30%	3.00%	3.00%	1.80%
61	2.24%	2.35%	3.00%	3.00%	1.90%
62	2.31%	2.40%	3.00%	3.00%	2.00%
63	2.39%	2.45%	3.00%	3.00%	2.10%
64	2.47%	2.50%	3.00%	3.00%	2.20%
65	2.55%	2.55%	3.00%	3.00%	2.30%
66	2.55%	2.55%	3.00%	3.00%	2.40%
67+	2.55%	2.55%	3.00%	3.00%	2.50%

Table C-2
SDCERS - Airport Authority

For Vested Members who terminated--	--the accrual factors are--
December 31, 2002 - Present	Pre 12/31/2001 factors above with 10% increase in Final Average Compensation, Andrecht, Post 4/1/2004 or Executive (if applicable)

Maximum Benefit

Effective April 1, 2004, there is a 90% benefit cap, as a percentage of pay, for non-Executive Members who choose post-4/1/2004 factors. This cap does not apply to the annuitized COL Annuity benefit.

Unmodified Form of Payment

Monthly payments continued for the life of the Member, with 50% continuance to the eligible spouse, domestic partner, or dependent child under 21 years of age upon Member's death. If there is no eligible spouse at time of retirement, the Member may receive either a lump sum payment equal to the accumulated surviving spouse contributions or use those contributions to provide a larger annuity. (§0600)

Note: Airport Authority employees participate in Social Security.

4. Non-Industrial Disability

Eligibility

Ten years of service. (§0502)

Benefit

Greater of 1.5% per year of service multiplied by final compensation, one-third of final compensation, or the earned service retirement benefit, if eligible. (§0503)

5. Industrial Disability

Eligibility

No age or service requirement (§0500).

Benefit

Greater of one-third of final compensation, or the earned service retirement benefit, if eligible. (§0501)

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. (§0701)

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

50% of earned benefit payable to eligible surviving spouse, domestic partner, or dependent child under 21 years of age. (§0703)

8. Industrial Active Death

50% of the final average compensation preceding death, payable to eligible surviving spouse, domestic partner or dependent child under 21 years of age. (§0704)

9. Death After Retirement

Continuance to surviving beneficiary depending on benefit selection made at retirement.

$2,000 payable in lump sum to the beneficiary or the estate of the retiree. (§0600, 0708)

10. Withdrawal Benefits

Less than five years of service

Refund of accumulated employee contributions with interest, or may keep deposits with SDCERS and earn additional interest, and use service with a reciprocal system to establish eligibility for earned benefits upon concurrent retirement from reciprocal system. (§0205, 0401)

Five or more years of service

If contributions left on deposit, entitled to earned benefits commencing any time after eligible to retire. (§0205)

11. Post-retirement Cost-of-Living Benefit

Based on changes in Consumer Price Index, to a maximum of 2% per year. (§1301)

12. COL Annuity

Actuarial equivalent of accumulated contributions in cost-of-living annuity account at time of retirement. (§0300)

13. Member Contributions

Vary by age at time of entrance into the system (§0200). While a significant portion of these contributions may be "offset," such offsets are not directly reflected in either the employee contributions or related refund calculations. Rates include cost of providing spouse's continuance, cost of providing COL Annuity, and cost of funding final one-year average in lieu of final three-year average. (§0102, 0200, 0201)

For members hired prior to January 1, 2013, the current contribution rates have been in place since at least the 2004 valuation. For members hired on or after January 1, 2013 under the California Public Employees' Pension Reform Act (PEPRA), the employee contribution rates were recalculated with the June 30, 2017 valuation.

The employee contribution rates for members under PEPRA are determined based on 50/50 cost-sharing of the total normal cost rate (excluding the COL Annuity) at each entry age. In addition, the rates include the full expected cost of the Cost-of-Living (COL) Annuity, which results in PEPRA Members paying more than half of the total normal cost rate. These rates are rounded to the nearest quarter of 1%. The COL Annuity contribution rate is equal to 20% of the sum of other employee contributions, in accordance with the plan document. Under the provisions of PEPRA, if the aggregate normal cost rate changes by more than 1% of payroll since the time the prior rates were established, then a recalculation of employee contribution rates is required. No recalculation is required with the June 30, 2018 valuation since the normal cost rate did not change by more than 1% of payroll. The assumptions used to calculate the employee contribution rates were the same as in the June 30, 2017 valuation, except that mortality tables were blended 50/50 between male and female rates for both members and beneficiaries.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Table C-3
SDCERS - Airport Authority
Employee Contribution Rates

	Hired Before January 1, 2013		Hired On or After January 1, 2013	
	Integrated Members		Integrated Members	
Entry Age	First $400/Mo.	Over $400/Mo.	First $400/Mo.	Over $400/Mo.
20	5.52%	8.28%	3.25%	5.00%
21	5.59	8.38	3.50	5.00
22	5.66	8.49	3.50	5.25
23	5.73	8.60	3.75	5.50
24	5.80	8.70	3.75	5.75
25	5.89	8.83	4.00	6.00
26	5.97	8.95	4.00	6.25
27	6.04	9.06	4.25	6.50
28	6.12	9.18	4.50	6.50
29	6.20	9.30	4.50	6.75
30	6.28	9.42	4.75	7.00
31	6.37	9.55	5.00	7.25
32	6.45	9.67	5.00	7.50
33	6.53	9.79	5.00	7.50
34	6.61	9.91	5.00	7.50
35	6.70	10.05	5.25	7.75
36	6.79	10.18	5.25	7.75
37	6.88	10.32	5.25	8.00
38	6.97	10.45	5.50	8.25
39	7.05	10.58	5.75	8.50
40	7.15	10.72	5.75	8.75
41	7.24	10.86	6.00	9.00
42	7.33	10.99	6.00	9.25
43	7.42	11.13	6.50	9.75
44	7.52	11.28	6.75	10.00
45	7.61	11.42	7.00	10.50
46	7.71	11.56	7.25	11.00
47	7.81	11.71	7.50	11.25
48	7.91	11.86	8.00	12.00
49	8.01	12.01	8.25	12.50
50	8.10	12.15	8.75	13.00
51	8.21	12.32	9.00	13.50
52	8.31	12.47	9.25	13.75
53	8.42	12.63	9.50	14.25
54	8.53	12.79	9.75	14.50
55	8.63	12.95	9.75	14.75
56	8.74	13.11	10.00	15.00
57	8.87	13.31	10.00	15.25

14. Internal Revenue Code Compliance

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

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 (§1200). Members eligible for service retirement are eligible to participate in DROP, but only those hired before October 3, 2006 may enter the program (§1201).

A participant in DROP may leave DROP at any time before the end of his or her designated DROP participation period by voluntarily leaving Airport Authority employment (§1202). The maximum DROP participation period is 60 months (§1201).

A DROP participation account is a nominal account established with the Retirement System, which is credited with the following amounts (§1203):

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

When a Member leaves DROP and Airport Authority employment, they begin to collect their monthly service retirement allowance, their supplemental 13^{th} 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 (§1206).

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 (§1207).

APPENDIX C – SUMMARY OF PLAN PROVISIONS

16. Blended Benefit with Participating Agencies

Members may retire and receive benefits from multiple Plans (e.g., an Airport Authority employee could have also worked for the Unified Port District).

17. Changes Since Last Valuation

None.

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 actuarial value of future normal costs. This is also referred to by some actuaries as “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 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 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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