Classic Values, Innovative Advice

San Diego City Employees' Retirement System

San Diego County Regional Airport Authority

Actuarial Valuation Report as of June 30, 2022

Produced by Cheiron

February 2023

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Classic Values, Innovative Advice

February 23, 2023

Board of Administration
San Diego City Employees' Retirement System
401 West A Street, Suite 800
San Diego, California 92101

Re: San Diego County Regional Airport Authority June 30, 2022 Actuarial Valuation

Dear Members of the Board,

We are pleased to submit the June 30, 2022 Actuarial Valuation Report for the San Diego County Regional Airport Authority (Airport Authority, the "Plan") of the San Diego City Employees' Retirement System (SDCERS).

The purpose of this report is to present the annual actuarial valuation of the SDCERS-Airport Authority Defined Benefit Plan. 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.

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, the 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.

Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. 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 actuarial valuation report 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 such other users.

Sincerely,
Cheiron

Gene Kalwarski, FSA, EA, MAAA, FCA
Principal Consulting Actuary

Alice Alsberghe, ASA, EA, MAAA
Consulting Actuary

SECTION I – BOARD SUMMARY

The primary purpose of the SDCERS-Airport Authority actuarial valuation is to disclose and comment on, 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,
- Disclosures related to the Plan's risks of SDCERS-Airport Authority,
- The Airport Authority's Actuarially Determined Contribution (ADC) for Fiscal Year 2024,
- PEPRA Member contribution rates as required under California Government Code section 7522.30, and
- Information required for the Annual Comprehensive Financial Report (ACFR).

In this section, we present a summary of the principal valuation results. This summary includes the basis upon which the June 30, 2022 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

For the sixth year in a row, the Airport Authority has been making contributions to the Plan in excess of the Actuarially Determined Contribution (ADC). These excess contributions are made in accordance with the Airport Authority's Board policy to maintain a 95% funding ratio, including a minimum of 90%. As of the June 30, 2022 actuarial valuation the Airport Authority's funding ratio is above 95%, at 95.4%, up from 94.6% in the prior year.

There were no changes in assumptions, methods, or plan provisions with this valuation. All assumptions and methods can be found in Appendix B of this report. A summary of 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.

B. Experience between June 30, 2021 and June 30, 2022

The following discussion summarizes the key results of the June 30, 2022 valuation and how they compare to the results from the June 30, 2021 valuation.

1. SDCERS-Airport Authority Assets, Liabilities and Contributions

Table I-1 presents a comparison between the June 30, 2022 and June 30, 2021 SDCERS-Airport Authority assets, liabilities, unfunded actuarial liability, funding ratios and contributions.

The key results shown in Table I-1 show that the funding ratio, measured using an actuarial smoothing method, increased from 94.6% as of June 30, 2021 to 95.4% as of June 30, 2022. The funding ratio increased because the actuarial value of assets grew by 8.4% which was more than the liability growth of 7.4%. Measured on a market value of assets basis, the June 30, 2022 funding ratio decreased to 96.5% compared to 104.1% in the prior year. Investment return on a market value basis was -1.44%, whereas on an actuarial value basis the return was 7.32%. Section III of this report provides additional detail on SDCERS' assets, including an explanation of the development of the actuarial value of assets. More details on the liability growth are presented in Item 2 of this section, and in Section IV of this report.

The Airport Authority's Actuarially Determined Contribution (ADC) increased slightly compared to the prior year, from $4,943,566 to $4,959,564. The components of this change are shown in Table I-3. These figures assume payment at the beginning of the fiscal year in which they are paid. Contribution amounts assuming payment throughout the year may be found in Table V-1.

Table I-1
SDCERS - Airport Authority - Assets, Liabilities and Contributions

	June 30, 2022	June 30, 2021	% Change
Actuarial Liability	$ 271,995,591	$ 253,255,628	7.4%
Actuarial Value Assets	$ 259,606,440	$ 239,570,733	8.4%
Unfunded Actuarial Liability-Actuarial Value	$ 12,389,151	$ 13,684,895	-9.5%
Funding Ratio-Actuarial Value	95.4%	94.6%	0.8%
Market Value Assets	$ 262,565,673	$ 263,538,875	-0.4%
Unfunded Actuarial Liability-Market Value	$ 9,429,918	$ (10,283,246)	-191.7%
Funding Ratio-Market Value	96.5%	104.1%	-7.6%
Actuarially Determined Contribution (ADC)	$ 4,959,564	$ 4,943,566	0.3%

SECTION I – BOARD SUMMARY

2. Components of UAL Change between June 30, 2021 and June 30, 2022

The unfunded actuarial liability (UAL) for SDCERS-Airport Authority decreased by \$1.3 million; from \$13.7 million to \$12.4 million. Table I-2 below presents the specific components of this change in the UAL.

The Plan's UAL was expected to decrease by approximately \$8.6 million, assuming all assumptions were met. Despite the actuarial investment gain of \$1.0 million (7.32% return on the actuarial value of assets being above the assumed return of 6.50%) and the additional contributions made by the Airport Authority of \$2.2 million, the net asset experience fell short of the anticipated asset gain by \$3.0 million. This is due to the partial (25%) recognition of the market value asset loss for the year ending June 30, 2022, which offset the large anticipated investment gain.

The Plan experienced a liability loss of \$4.3 million, primarily due to salary increases above those assumed, offset by demographic experience (retirement, death, disability, and termination) deviating from the assumptions.

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

1.	**UAL at June 30, 2021**	**\$**	**13,684,895**
2.	Expected change in UAL		(8,568,270)
3.	Asset experience		
	a. Anticipated investment loss/(gain)		(6,262,018)
	b. Actual investment loss/(gain)[1]		(1,005,288)
	c. Employer and Member contributions paid greater than expected		(2,237,747)
	d. Net asset experience (b - a + c)		3,018,983
4.	Liability experience loss[1]		4,253,543
5.	Change in assumptions or methods		0
6.	Other miscellaneous		0
7.	Total change in UAL: 2 + 3d + sum of 4 through 6		(1,295,744)
8.	**UAL at June 30, 2022: 1 + 7**	**\$**	**12,389,151**

[1] Net impact of asset and liability experience is an actuarial loss of \$3,248,254 (\$1,005,288 actual investment gain minus \$4,253,543 actual liability experience loss).

SECTION I – BOARD SUMMARY

3. SDCERS-Airport Authority Change in Contributions

The Airport Authority's actuarially determined contribution (ADC) for FY 2023 increased slightly by approximately $16,000, from $4.94 million to $4.96 million. The ADC would have been expected to decrease by $0.7 million, assuming continued phase-in of investment experience from prior years.

Despite the actuarial investment gain and the additional contributions made by the Airport Authority, the net asset experience fell short of the anticipated asset gain by approximately $0.3 million on the ADC. The liability experience loss increased the ADC by $0.4 million.

Table I-3 below presents the specific components of the change in the ADC. We provide more detail on the development of this contribution in Section V.

Table I-3 SDCERS - Airport Authority-Change in ADC			
1.	**ADC at June 30, 2021**	**$**	**4,943,566**
2.	Expected change in ADC		(663,771)
3.	Asset experience		
	a. Anticipated investment loss/(gain)		(554,239)
	b. Actual investment loss/(gain)		(88,976)
	c. Employer and Member contributions paid greater than expected		(198,059)
	d. Net asset experience (b - a + c)		267,204
4.	Liability experience loss		412,565
5.	Change in assumptions or methods		0
6.	Other miscellaneous		0
7.	Total change in ADC: 2 + 3d + sum of 4 through 6		15,998
8.	**ADC at June 30, 2022: 1 + 7**	**$**	**4,959,564**

SECTION I – BOARD SUMMARY

4. SDCERS-Airport Authority Membership

Table I-4 shows that total membership in SDCERS-Airport Authority increased by 4.2% from 2021 to 2022. Active membership declined by 1.1% whereas retiree members increased by 6.2%.

The payroll figures shown below are based on June 30, 2022 data with expected salary increases and projected pay for the fiscal year beginning July 1, 2022. Expected total payroll for active members increased by 5.6%; with the average pay per active member increasing by 6.8%. The total benefits in pay status and average benefit increased by 9.0% and 0.8%, respectively.

Table I-4
SDCERS - Airport Authority - Membership Total

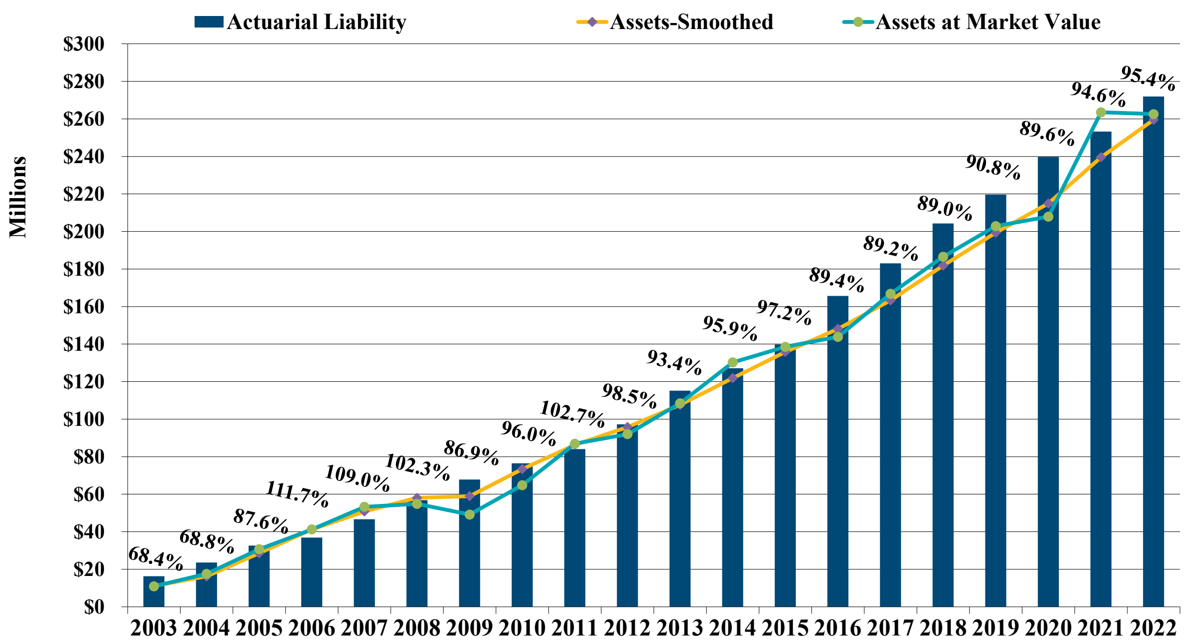
Valuation as of:	June 30, 2022	June 30, 2021	% Change
Active Counts	353	357	-1.1%
Terminated	182	163	11.7%
Disabled	3	3	0.0%
Retirees	172	162	6.2%
Beneficiaries	12	8	50.0%
Total Airport Authority Members	722	693	4.2%
Active Member Payroll	$ 32,528,943	$ 30,809,714	5.6%
Average Pay per Active Member	$ 92,150	$ 86,302	6.8%
Benefits in Pay Status	$ 9,132,255	$ 8,379,473	9.0%
Average Benefit	$ 48,836	$ 48,436	0.8%

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 the market value and smoothed assets compared to actuarial liabilities, with SDCERS-Airport Authority funding ratios, measured as the ratio of smoothed (actuarial) value of assets to actuarial liabilities, since 2003.

SDCERS-Airport Authority Assets and Liabilities 2003 – 2022



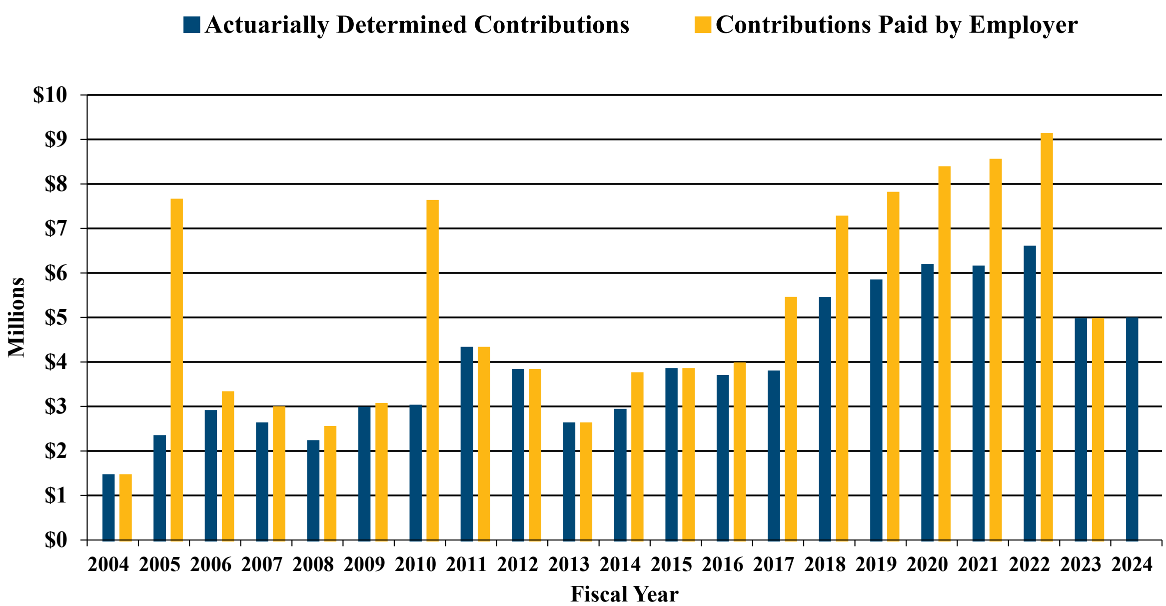
For most years this chart shows an improving funded status. The one period of a significant decline in the Airport Authority's funded status was in 2009 following the "Great Recession", where the funding ratio dropped from 102.3% to 86.9%. Driven by favorable investment returns over the years since 2009, including the strong investment return for the year ending June 30, 2021, the Plan is now 95.4% funded. It is important to note that this improved funded status over the period since 2003 was achieved while the Board lowered the discount rate from 8.00% to 6.50% and significantly strengthened its demographic assumptions, in particular mortality.

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, 2022 would be 96.5%.

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 the actuarially determined contributions (ADC).

SDCERS-Airport Authority Contributions FY 2004-2024



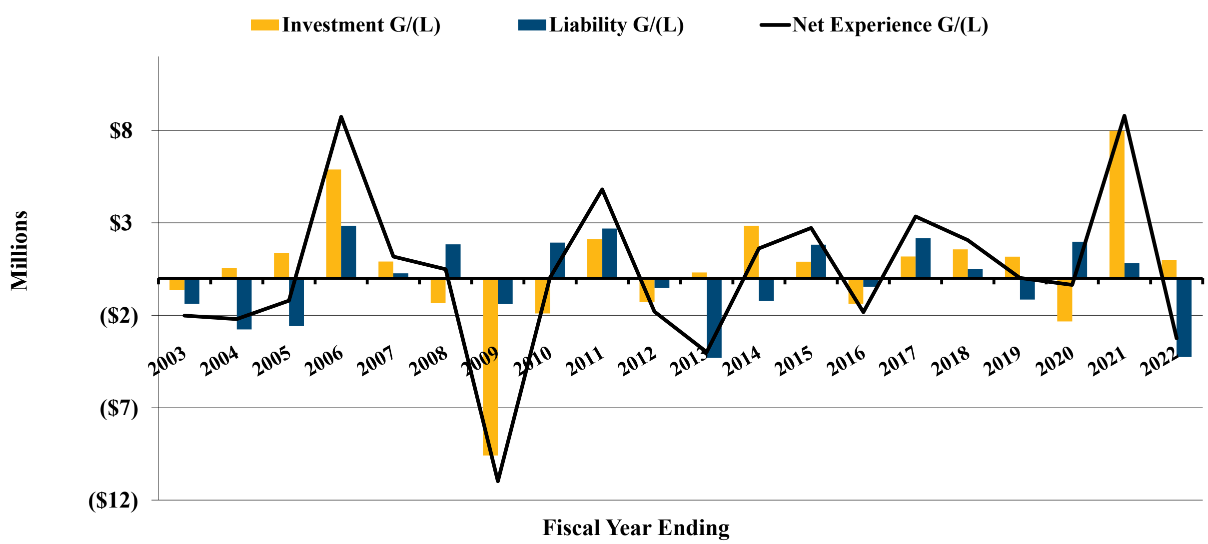
This chart compares the actual contributions made by the Airport Authority to the actuarially determined contributions (ADC). The contributions paid by the Airport Authority are based on the SDCERS Board's adopted funding practice of Normal Cost plus amortization of the various UAL components, including the requirement beginning in FY 2009 that there is no negative amortization and the requirement beginning with FY 2016 to fund the expected 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 many of the fiscal years shown. These excess contributions were made in accordance with the Airport Authority's Board policy to maintain a 95% funding ratio, including a minimum of 90%.

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) 2003-2022



As seen in the chart (gold bars) the System experienced one year of a significant investment loss in 2009. In most other years there were investment gains, with the year ending June 30, 2021 being the largest gain.

Liability experience gains and losses (blue bars) are attributed to actual demographic experience – rates of retirement, death, disability, and termination, as well as salary increases – deviating from the underlying assumptions. 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 2022 liability loss, which is the most notable, was driven by salary increases greater than expected. The liability experience loss in FY 2022 was 1.7% of total liabilities.

SECTION I – BOARD SUMMARY

D. Projected Financial Trends

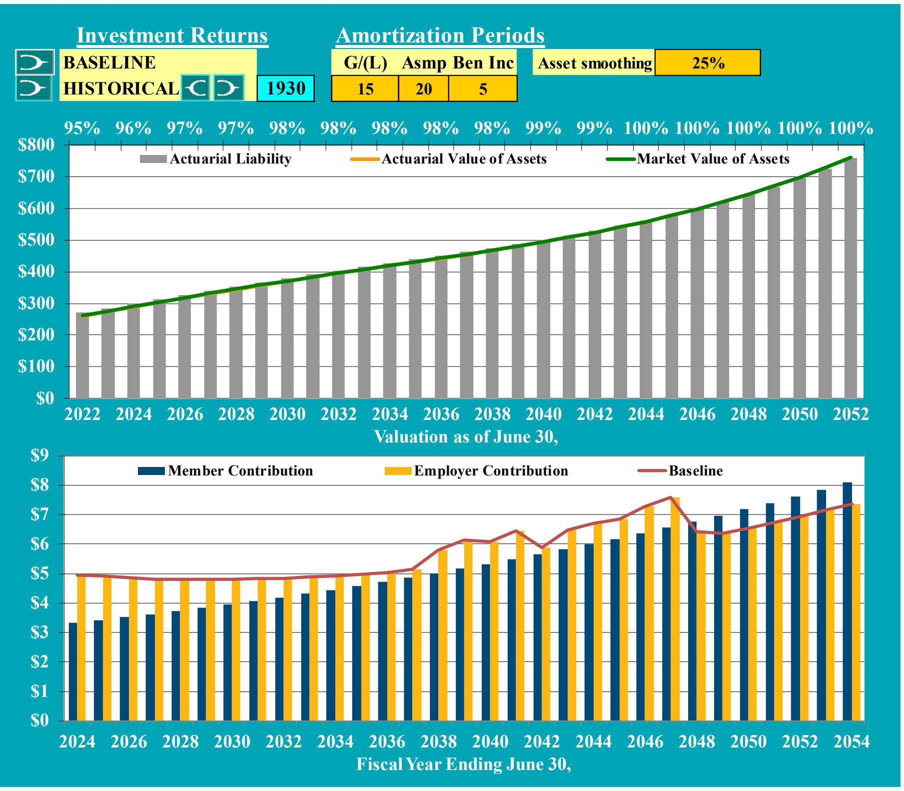
Our analysis of SDCERS-Airport Authority projected financial trends is one of the most important parts of this valuation. These projections based on the June 30, 2022 valuation results are presented in terms of benefit security (assets over liabilities) and the Airport Authority's expected cost progression.

In the chart that follows, we project the SDCERS-Airport Authority assets and liabilities and the Airport Authority's contributions. 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 navy bars). The left side of the exhibit shows the returns assumed each year followed by the annual ADC and UAL in dollar amounts.

These projections assume a 6.50% investment return and discount rate, constant active plan membership with payroll growing at the assumed payroll growth of 3.05%, as well as all experience conforming to the Plan's assumptions.

SDCERS-Airport Authority Projections FY 2024-2054 (earnings as assumed)

FYE	Return	(mil) ADC	June 30,	(mil) UAL
2023	6.50%	$ 4.9	2021	$ 13.68
2024	6.50%	$ 5.0	2022	$ 12.39
2025	6.50%	$ 4.9	2023	$ 11.57
2026	6.50%	$ 4.9	2024	$ 10.88
2027	6.50%	$ 4.8	2025	$ 10.34
2028	6.50%	$ 4.8	2026	$ 9.91
2029	6.50%	$ 4.8	2027	$ 9.56
2030	6.50%	$ 4.8	2028	$ 9.28
2031	6.50%	$ 4.8	2029	$ 9.06
2032	6.50%	$ 4.8	2030	$ 8.89
2033	6.50%	$ 4.9	2031	$ 8.74
2034	6.50%	$ 4.9	2032	$ 8.63
2035	6.50%	$ 5.0	2033	$ 8.54
2036	6.50%	$ 5.0	2034	$ 8.47
2037	6.50%	$ 5.1	2035	$ 8.41
2038	6.50%	$ 5.8	2036	$ 8.37
2039	6.50%	$ 6.1	2037	$ 8.33
2040	6.50%	$ 6.1	2038	$ 7.69
2041	6.50%	$ 6.4	2039	$ 6.79
2042	6.50%	$ 5.9	2040	$ 6.00
2043	6.50%	$ 6.5	2041	$ 4.93
2044	6.50%	$ 6.7	2042	$ 4.55
2045	6.50%	$ 6.8	2043	$ 3.64
2046	6.50%	$ 7.3	2044	$ 2.61
2047	6.50%	$ 7.6	2045	$ 1.53
2048	6.50%	$ 6.4	2046	$ 0.09
2049	6.50%	$ 6.4	2047	$ (1.60)
2050	6.50%	$ 6.5	2048	$ (1.97)
2051	6.50%	$ 6.7	2049	$ (2.10)
2052	6.50%	$ 6.9	2050	$ (2.24)
2053	6.50%	$ 7.1	2051	$ (2.39)
2054	6.50%	$ 7.4	2052	$ (2.54)
N	6.50%			



SECTION I – BOARD SUMMARY

These projections do not assume that all UAL amortization bases are reset to zero once the Plan reaches 100% funding, rather the existing bases continue to be amortized under the Plan's current amortization method. Based on the assumed earnings, the Airport Authority's funded status (percentages at the top of the upper graph) is projected to reach 100% by the June 30, 2044 valuation. The Airport Authority's ADC is projected to remain relatively steady through FY 2037, followed by a period of spikes through FY 2047 as various gain and loss bases are paid off, then increase steadily thereafter with growing normal costs as future payrolls increase.

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, in Section II of this report, *Disclosures Related to Risk*, we present a stress testing projection based on assuming varying returns in the future, which are 6.50% on average.

SECTION II – DISCLOSURES RELATED TO RISK

Actuarial Standard of Practice (ASOP) No. 51 was published by the Actuarial Standards Board to provide guidance to actuaries on the assessment and disclosure of risks related to the possibility that future pension plan experience will deviate from assumptions. This standard does not introduce new concepts to actuarial work; it simply attempts to provide some codification of the practice. Our reports have routinely included stress testing of the valuation results showing the impact of future experience deviating from the underlying assumptions.

The pension plan's actuarial valuation results are dependent on assumptions about future economic and demographic experience. Based on actuarial standards of practice, the assumptions represent a reasonable estimate for future experience. However, actual experience will never conform exactly to the assumptions and may differ significantly from the assumptions. This deviation is the risk that pension plan sponsors undertake in relying on a pension plan's actuarial valuation results.

This section of this report is intended to identify the primary drivers of these risks, provide background information and assessments about these identified risks, and communicate the significance of these risks to this plan.

A. Identification of Risks

For pension plans, the three primary valuation results that can significantly differ from those expected are in the assets, liabilities, and employer contributions. While there are several factors that could lead to these results being different, we believe the primary risks to this plan are:

- Investment risk,
- Longevity and other demographic risks,
- Plan change risk,
- Contribution risk, and
- Assumption change risk.

Other risks that we have not identified may also turn out to be important.

Investment Risk is the potential for investment returns to deviate from what is expected. When actual investment returns are lower than the investment assumption used in the actuarial valuation, the unfunded liability will increase and the period of time over which the unfunded liability is expected to be paid will increase. But, when actual returns exceed the assumption, the resulting unfunded liability measurements and resulting amortization period will be lower than anticipated.

Longevity and Other Demographic Risk is the potential for mortality or other demographic experience to be different than expected. Generally, longevity and other demographic risks emerge slowly over time as the actual experience deviates from expected. In addition, the extensive number of assumptions related to longevity and demographic experience often result in offsetting factors contributing to the System's overall liability experience. As such, these risks are often dwarfed by other risks, particularly those due to the investment returns. The historical gain loss charts on page 8 shows that this has been true for this System, with the magnitude of the gains and losses from liability experience significantly smaller than those from investment experience.

Plan Change Risk is the potential for the provisions of the System to be changed such that the funding or benefits are changed materially. In addition to the actual payments to and from the System being changed, future valuation measurements can also be impacted, with plan changes leading to deviations between actual future measurements and those expected by the current valuation.

Contribution Risk is the potential for actual future contributions to deviate from expected future contributions, or that the anticipated contributions will be inadequate to fund the plan benefits. There are different sources of contribution risk ranging from the sponsor choosing to not make contributions in accordance with the funding policy to material changes in the contribution base (e.g., covered employees, covered payroll, sponsor revenue) that affect the amount of contributions the plan can collect.

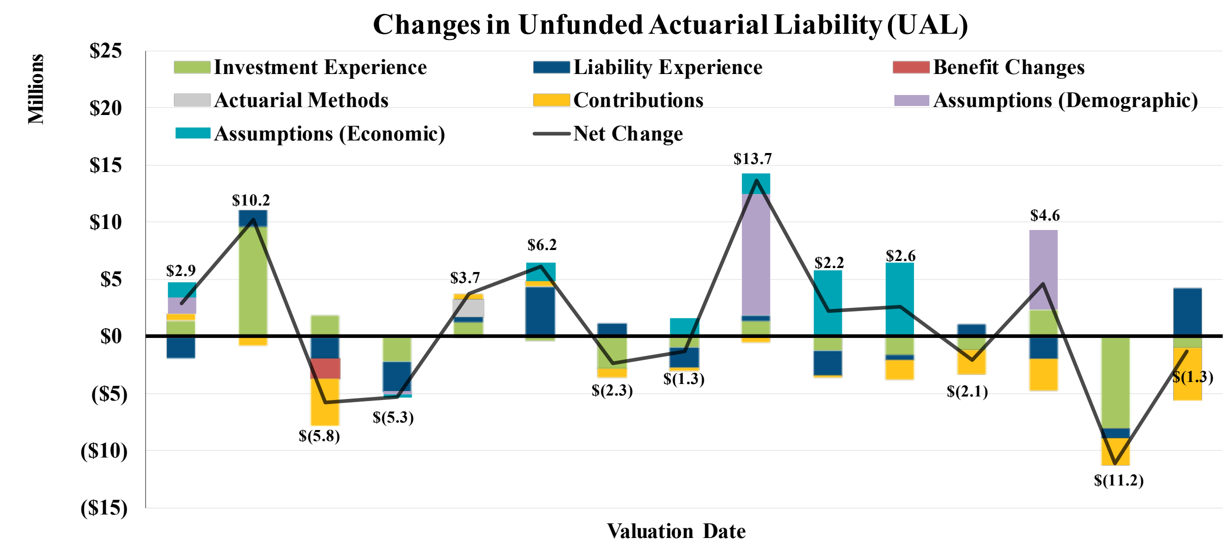
Assumption Change Risk is the potential for the environment to change such that future valuation assumptions are adjusted to be different than the current assumptions. For example, declines in interest rates over time may result in a change in the assumed rates of return used in the valuation. A healthier workforce may result in changes in employee behavior such that retirement rates are adjusted to reflect employees working longer. Assumption change risk is an extension of the risks previously identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in the environment when the current assumption is no longer reasonable.

B. Historical Review

In understanding the impact of some of these risks, it is useful to look at what factors contributed to the Airport Authority's Unfunded Actuarial Liability (UAL). These factors consist of annual actuarial experience gains and losses, assumption changes, plan changes, and contribution shortfalls or excesses. The following chart shows how these factors have contributed, at each valuation date, to the Airport Authority's UAL growth since 2008.

SECTION II – DISCLOSURES RELATED TO RISK

Factors Contributing to UAL Changes since 2008



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Investments	1.4	9.6	1.9	(2.1)	1.3	(0.3)	(2.8)	(0.9)	1.4	(1.2)	(1.6)	(1.2)	2.3	(8.0)	(1.0)	**(1.2)**
Benefit Changes	0.0	0.0	(1.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**(1.8)**
Contributions	0.6	(0.8)	(4.1)	0.1	0.5	0.5	(0.7)	(0.2)	(0.6)	(0.3)	(1.7)	(2.1)	(2.8)	(2.4)	(4.5)	**(18.4)**
Econ Assmpts	1.3	0.0	0.0	(0.3)	0.0	1.6	0.0	1.6	1.8	5.8	6.4	0.0	0.0	0.0	0.0	**18.2**
Demo Assmpts	1.5	0.0	0.0	(0.3)	0.0	0.0	0.0	0.0	10.6	0.0	0.0	0.0	7.0	0.0	0.0	**18.8**
Liability	(1.8)	1.4	(1.9)	(2.7)	0.5	4.3	1.2	(1.8)	0.5	(2.2)	(0.5)	1.1	(2.0)	(0.8)	4.3	**(0.5)**
Methods	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**1.4**
Total	**2.9**	**10.2**	**(5.8)**	**(5.3)**	**3.7**	**6.2**	**(2.3)**	**(1.3)**	**13.7**	**2.2**	**2.6**	**(2.1)**	**4.6**	**(11.2)**	**(1.3)**	**16.6**

As is evident in this chart, assumption changes have been by far the most significant factors contributing to the Plan's UAL.

Over this period, net investment and liability experience decreased the UAL by $1.7 million, while method changes, economic and demographic assumption changes increased the UAL by $38.4 million. All other sources of change, contributions made and benefits changes, served to decrease the UAL by $20.2 million. The net change in the UAL over this period was an increase of $16.6 million.

C. Plan Maturity Measures

As pension plans become more mature, the identified risks become of more significant concern. As a result, it has become increasingly important to examine measures that indicate a pension plan's maturity level.

The balance of this section discloses and examines two maturity measures: the asset leverage ratio, and the net cash flow ratio.

Asset Leverage Ratio

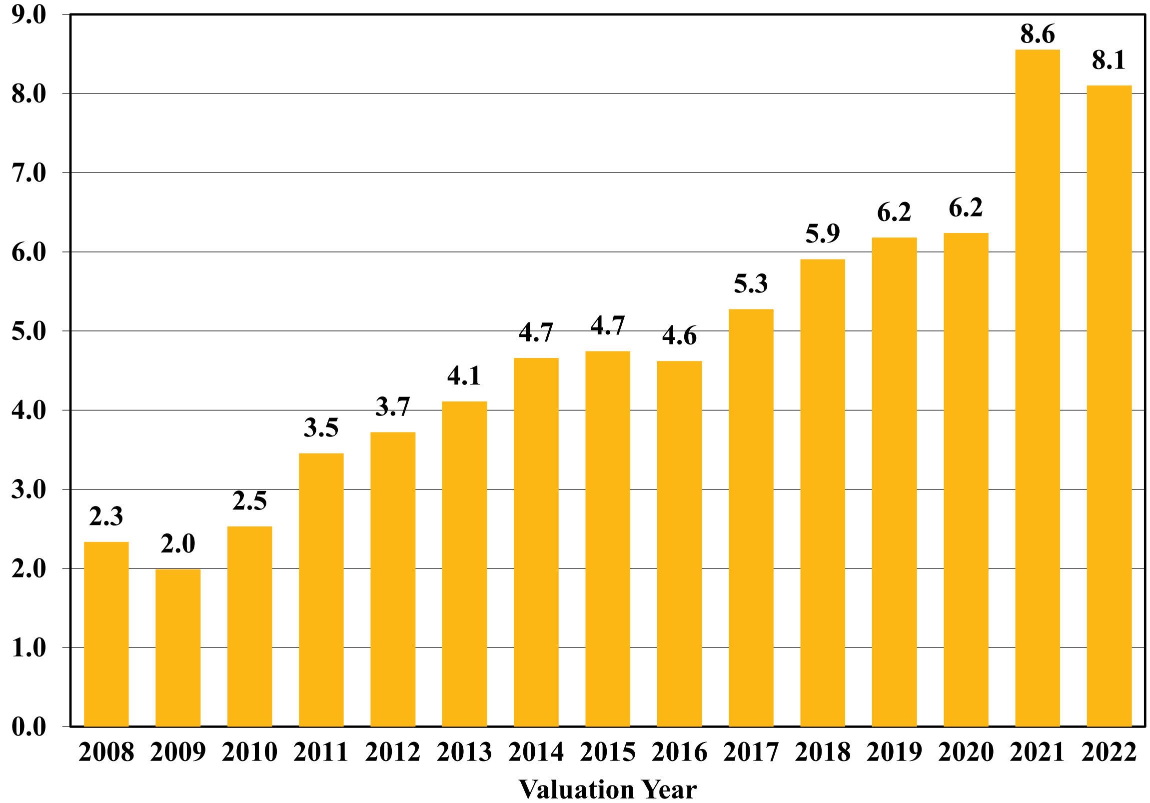
Typically, one of the most important pension plan maturity measures is the asset leverage ratio — the Market Value of Assets divided by the Plan's payroll. The greater the plan's assets are relative to payroll, the more vulnerable the plan is to investment volatility. The following example demonstrates this.

($ in millions)		
	Plan A	**Plan B**
Plan Assets	$ 5,000	$ 5,000
Payroll	$ 500	$ 1,000
Asset Leverage Ratio	10.0	5.0
10% Investment Loss	$ 500	$ 500

This example shows two plans that both experience a 10% investment loss equaling $500 million. Although their assets are the same, because of the size of payroll for Plan A is half of that of Plan B, its asset leverage ratio is 10 and Plan B's ratio is 5. This means that the Plan A has to make up (i.e., amortize) that loss over a payroll that is half as large as Plan B's.

SECTION II – DISCLOSURES RELATED TO RISK

Asset Leverage Ratio



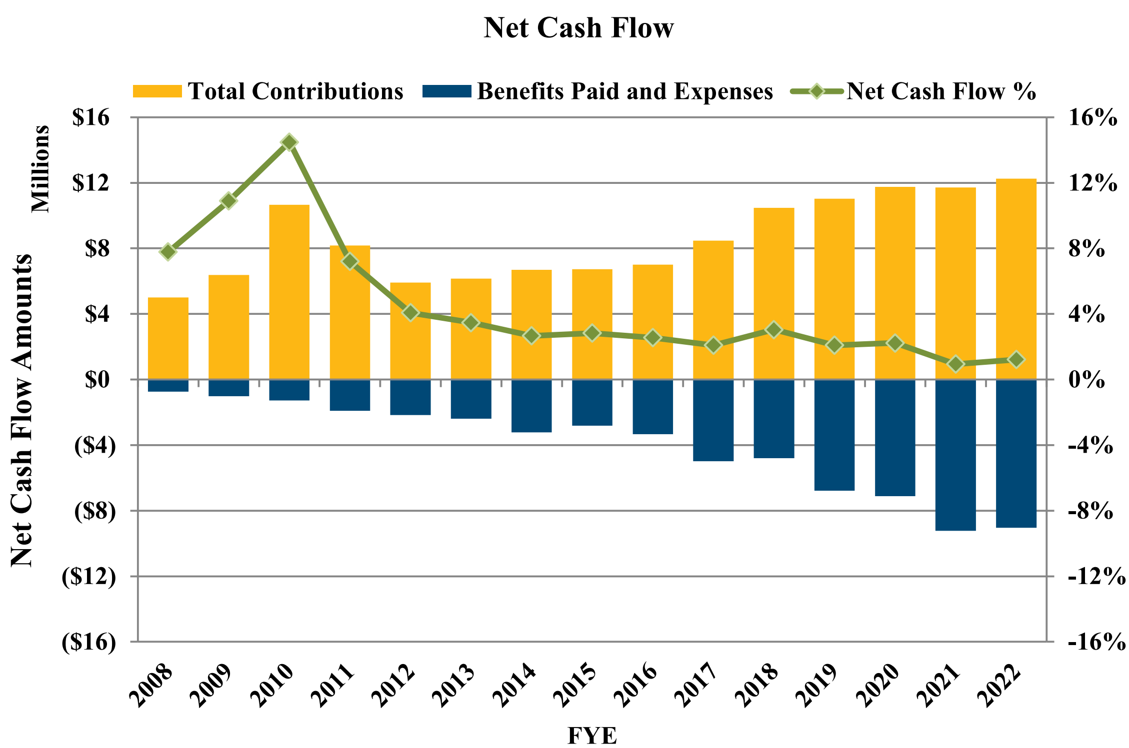
The chart above shows that the Airport Authority's asset leverage ratio has grown from 2.3 to 8.1. This means that if we have a market downturn similar to the Great Recession of 2008/2009 the impact of the Airport Authority's contribution would be nearly four times greater than it was then.

SECTION II – DISCLOSURES RELATED TO RISK

Net Cash Flow Ratio

Another more important measure of plan maturity is the ratio of the net cash flow out of or into the plan, benefits and expenses less contributions, divided by the market value of plan assets. With shrinking workforces, aging Baby Boomers, and retirees living longer, plans pay out more in benefits than they receive in contributions, leading to negative net cash flows, excluding investment income.

When plans with negative net cash flows suffer investment losses, they need to liquidate enough assets to pay for benefits in excess of contributions. That means these plans will need to earn higher returns to rebuild their assets to the previous levels. Plans with significant negative cash flows are more vulnerable to market declines. However, negative cash flows are expected with maturing plans and a plan's asset allocation may be adjusted to minimize sensitivity to investment risk.



The Airport Authority's net cash flow as a percentage of assets has largely trended downward, however it has remained positive throughout the period. Ultimately, we expect this ratio will become negative, and that is to be expected as the Plan further matures.

SECTION II – DISCLOSURES RELATED TO RISK

D. Assessment of Future Risks

Stress Testing the Plan's Funded Status and Contribution Levels

The fundamental risk to the Plan is that contributions will not adequately fund plan benefits. In assessing this risk, we performed stress tests on the Plan's funded status and contribution level assuming varying returns in the future which over the entire projection period average 6.5%.

With varying annual earnings, the chart that follows shows the volatility in the plan's funded status (top graph) and in the Airport Authority's contributions (bottom chart). Note that this chart reflects an illustrative scenario and is not intended to reflect future expectations.

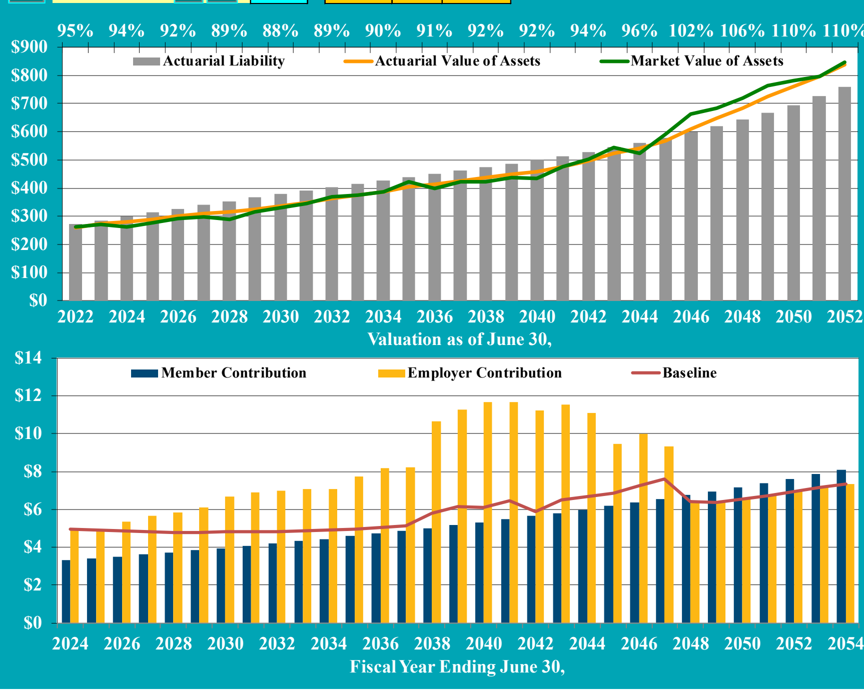
What these charts show is that whether the Plan is fully funded or poorly funded, subsequent returns can quickly alter the financial position of the Plan dramatically. It is impossible to judge the financial soundness of a Plan with a single year point measurement. What is more important to consider is the Plan'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. In SDCERS' case, the Plan has been conservative relative to most other public pension funds, and since 2005 the Airport Authority has contributed at least as much as the ADC, if not more.

SDCERS-Airport Authority Projections FY 2024-2054 (earnings which vary by year)

CHEIRON

FYE	Return	(mil) ADC	June 30,	(mil) UAL
2023	4.93%	$ 4.9	2021	$ 13.68
2024	-1.90%	$ 5.0	2022	$ 12.39
2025	6.46%	$ 5.0	2023	$ 12.60
2026	8.23%	$ 5.4	2024	$ 18.54
2027	3.65%	$ 5.7	2025	$ 23.69
2028	-0.09%	$ 5.8	2026	$ 26.60
2029	11.74%	$ 6.1	2027	$ 30.94
2030	7.75%	$ 6.7	2028	$ 39.43
2031	6.93%	$ 6.9	2029	$ 42.74
2032	9.53%	$ 7.0	2030	$ 44.15
2033	4.63%	$ 7.1	2031	$ 44.86
2034	7.08%	$ 7.1	2032	$ 42.80
2035	11.99%	$ 7.7	2033	$ 42.69
2036	-2.54%	$ 8.2	2034	$ 42.09
2037	10.07%	$ 8.2	2035	$ 35.65
2038	2.25%	$ 10.7	2036	$ 39.00
2039	6.35%	$ 11.3	2037	$ 38.10
2040	1.98%	$ 11.7	2038	$ 39.06
2041	12.51%	$ 11.7	2039	$ 38.73
2042	8.08%	$ 11.2	2040	$ 42.22
2043	10.99%	$ 11.6	2041	$ 37.94
2044	-1.75%	$ 11.1	2042	$ 32.11
2045	15.99%	$ 9.5	2043	$ 20.45
2046	14.12%	$ 10.0	2044	$ 21.36
2047	5.41%	$ 9.3	2045	$ 10.72
2048	7.86%	$ 6.4	2046	$(10.60)
2049	8.42%	$ 6.4	2047	$(27.12)
2050	4.22%	$ 6.5	2048	$(41.22)
2051	3.98%	$ 6.7	2049	$(57.01)
2052	8.11%	$ 6.9	2050	$(66.85)
2053	5.03%	$ 7.1	2051	$(71.21)
2054	6.00%	$ 7.4	2052	$(79.04)
N	6.50%			

Investment Returns		Amortization Periods				
BASELINE		G/(L)	Asmp	Ben Inc	Asset smoothing	25%
HISTORICAL	1930	15	20	5		



SECTION III – 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 (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, 2022 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 III – ASSETS

A. Disclosure of Market Value of Assets

The market value of assets represents a "snap-shot" value as of June 30, 2022, 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 III-1 below discloses the market value by asset class of SDCERS – All Employers' gross assets on June 30, 2022.

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

Cash	$ 385,905,534
US Stocks	2,322,351,891
International Stocks	1,985,773,242
Private Equity	1,780,739,686
Bonds	2,555,801,130
Real Estate	1,201,435,051
Receivables	262,096,613
Miscellaneous	150,193,899
Accounts Payable	(644,265,272)
Market Value of Assets – June 30, 2022	**$ 10,000,031,774**

B. Market Value of Assets by Plan Sponsor

As of July 1, 2007, the City of San Diego, 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 III-2 below discloses the market value and actuarial value of assets by Plan.

Table III-2
Summary of Market and Actuarial Assets for Each Employer Group as of June 30, 2022

	Actuarial Value Total Assets June 30, 2022	Market Value Total Net Assets June 30, 2022	Market Value Total Net Assets June 30, 2021
City of San Diego	$ 9,008,489,093	$ 9,182,686,922	$ 9,457,378,818
Port District	543,631,218	554,779,179	572,703,787
Airport Authority	259,606,440	262,565,673	263,538,875
Total-SDCERS	***$ 9,811,726,751***	***$ 10,000,031,774***	***$ 10,293,621,479***

SECTION III – 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, 2022 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 greater than 120% of the market value of assets.

Table III-3
SDCERS - Airport Authority
Development of Actuarial Value of Assets at June 30, 2022
Expected Value of Assets Method

1.	Actuarial Value of Assets at June 30, 2021	$	239,570,733
2.	Amount in (1) with interest at 6.50% to June 30, 2022		255,142,831
3.	Employer and Member contributions for the Plan Year ended June 30, 2022		12,252,078
4.	Disbursements from Trust excluding investment expenses, June 30, 2021 through June 30, 2022		9,036,817
5.	Interest on cash flows to June 30, 2022 at 6.50% per year		261,938
6.	Expected Actuarial Value of Assets at June 30, 2022 = (2) + (3) – (4) + (5)		258,620,030
7.	Actual Market Value of Assets at June 30, 2022		262,565,673
8.	Excess of (7) over (6)		3,945,643
9.	Preliminary Actuarial Value of Assets at June 30, 2022 = (6) + 25% of (8)	$	259,606,440
10.	80% Minimum Corridor on the Actuarial Value of Assets = 80% of (7)		210,052,538
11.	120% Maximum Corridor on the Actuarial Value of Assets = 120% of (7)		315,078,807
12.	Final Actuarial Value of Assets at June 30, 2022 = (9), but no less than (10) and no more than (11)	$	259,606,440

D. Investment Performance

The FY 2022 return on the market value of assets, as reported by SDCERS' investment consultant Aon Hewitt Investment Consulting, was -1.7%. The reported return for FY 2021 was 24.9%.

On an actuarial (smoothed) value of assets basis, the return for FY 2022 was 7.32%. This return produced for SDCERS-All Employers an overall investment gain of $61.4 million for the year ending June 30, 2022. This reported gain is different than the investment gain of $1.0 million reported in Table I-2 in this report. The $1.0 million is the gain only for SDCERS-Airport Authority.

Finally, it should be noted that rates of investment returns disclosed in this actuarial report will often differ slightly from those reported by SDCERS as well as SDCERS' investment consultant. This is because the returns disclosed in this report are dollar weighted returns, whereas returns reported by SDCERS and its consultant are usually time weighted returns.

SECTION IV – LIABILITIES

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

- Disclosure of liabilities on June 30, 2021 and June 30, 2022, 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-Airport Authority obligations, represents the amount of money needed today to fully fund all benefits of SDCERS-Airport Authority 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 IV-1, on the following page, discloses the first two of these liabilities for the current and prior year valuations. Table IV-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 IV-3 discloses the third of these liabilities, present value of accrued benefits, for the current and prior year valuations.

SECTION IV – LIABILITIES

Table IV-1
SDCERS - Airport Authority - Total

Valuation as of:		June 30, 2022		June 30, 2021
Present Value of Future Benefits				
Actives	$	168,853,091	$	160,115,657
Terminated		16,977,098		16,276,307
Disabled		1,143,800		1,137,351
Retirees		123,267,833		114,572,697
Beneficiaries		2,920,091		2,001,293
Total Airport Authority	**$**	**313,161,913**	**$**	**294,103,305**
Actuarial Liability - EAN				
Total Present Value of Future Benefits	$	313,161,913	$	294,103,305
Present Value of Future Normal Costs				
Employer Portion		22,350,720		22,588,519
Employee Portion		18,815,602		18,259,158
Actuarial Liability - EAN	**$**	**271,995,591**	**$**	**253,255,628**
Actuarial Value of Assets	$	259,606,440	$	239,570,733
Unfunded EAN Actuarial Liability	**$**	**12,389,151**	**$**	**13,684,895**

Table IV-2 shows actuarial liability as of June 30, 2022 for General, PEPRA and Executive Members of SDCERS-Airport Authority

Table IV-2
SDCERS - Airport Authority as of June 30, 2022

		Total		General		PEPRA		Executives
Present Value of Future Benefits								
Actives	$	168,853,091	$	127,097,327	$	31,548,101	$	10,207,663
Terminated		16,977,098		15,011,545		1,965,553		0
Disabled		1,143,800		1,143,800		0		0
Retirees		123,267,833		112,021,432		595,051		10,651,350
Beneficiaries		2,920,091		2,897,019		23,072		0
Total Airport Authority	**$**	**313,161,913**	**$**	**258,171,122**	**$**	**34,131,777**	**$**	**20,859,014**
Actuarial Liability - EAN								
Actives	$	127,686,770	$	105,435,210	$	13,673,079	$	8,578,481
Terminated		16,977,098		15,011,545		1,965,553		0
Disabled		1,143,800		1,143,800		0		0
Retirees		123,267,833		112,021,432		595,051		10,651,350
Beneficiaries		2,920,091		2,897,019		23,072		0
Total Airport Authority	**$**	**271,995,591**	**$**	**236,509,005**	**$**	**16,256,755**	**$**	**19,229,831**

SECTION IV – LIABILITIES

Table IV-3 shows the present value of accrued benefits as of June 30, 2022 for all Members of SDCERS-Airport Authority.

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

Valuation as of:	June 30, 2022	June 30, 2021	% Change
1. Present Value of Accrued Benefits			
a. Members Currently Receiving Payments	$ 127,331,724	$ 117,711,341	8.2%
b. Terminated and Inactive Members	16,977,098	16,276,307	4.3%
c. Active Members	95,156,601	89,761,013	6.0%
d. Total PVAB	$ 239,465,422	$ 223,748,661	7.0%
2. Assets at Market Value	$ 262,565,673	$ 263,538,875	-0.4%
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)	109.65%	117.78%	-8.2%

SECTION IV – 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 IV-4
Development of 2022 Experience Gain/(Loss) SDCERS - Airport Authority
(In Thousands)

1.	Unfunded Actuarial Liability at June 30, 2021		$ 13,684.9
2.	Beginning of year Unfunded Actuarial Liability payment		(3,000.7)
3.	Interest accrued ((1+2) x 6.50%)		694.5
4.	Expected Unfunded Actuarial Liability at June 30, 2022 (1+2+3)		11,378.6
5.	Actual Unfunded Liability at June 30, 2022		12,389.2
6.	Difference: (4 - 5)		(1,010.5)
7.	Portion of difference (6) due to actuarial assumption or method changes		0
8.	Portion of difference (6) due to plan changes		0
9.	Portion of difference (6) due to contributions greater than expected		2,237.7
10.	Portion of difference (6) due to net experience Gain/(Loss)		(3,248.3)
	a) portion of (10) due to investment experience	*$ 1,005.3*	
	b) portion of (10) due to liability experience	*$ (4,253.5)*	
	c) portion of (10) due to service purchases	*$ 0*	

SECTION IV – LIABILITIES

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

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

Valuation Date	Gain/(Loss)	Beginning-of-Year Actuarial Liabilities	Gain/(Loss) % of Liability
06/30/2003	$ (2,013,702)	$ 11,526,293	-17.5%
06/30/2004	(2,204,850)	16,278,613	-13.5%
06/30/2005	(1,207,448)	23,578,460	-5.1%
06/30/2006	8,732,864	32,602,898	26.8%
06/30/2007	1,176,387	36,905,216	3.2%
06/30/2008	492,707	46,636,555	1.1%
06/30/2009	(10,976,099)	56,807,663	-19.3%
06/30/2010	27,790	67,870,945	0.0%
06/30/2011	4,808,814	76,447,473	6.3%
06/30/2012	(1,801,741)	84,042,425	-2.1%
06/30/2013	(3,923,241)	97,224,854	-4.0%
06/30/2014	1,621,374	115,200,048	1.4%
06/30/2015	2,722,867	127,174,087	2.1%
06/30/2016	(1,829,250)	139,786,634	-1.3%
06/30/2017	3,347,379	165,666,873	2.0%
06/30/2018	2,071,874	183,077,245	1.1%
06/30/2019	22,457	204,269,851	0.0%
06/30/2020	(354,547)	219,658,264	-0.2%
06/30/2021	8,791,815	239,759,071	3.7%
06/30/2022	(3,248,254)	253,255,628	-1.3%

SECTION V – 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 2024 payroll to determine the normal cost component of the FY 2024 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 2024 is to be amortized over several different periods. Table V-2 shows the outstanding balance, the FY 2024 payment, and the remaining amortization period for each of these components. 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 $388,731 for FY 2024 (assuming payment at the beginning of the year). This amount is assumed to increase by 2.5% per year.

Table V-1 on the following page shows how the Airport Authority's contribution rate for SDCERS for FY 2024 is developed.

SECTION V – CONTRIBUTIONS

Table V-1
SDCERS - Airport Authority
Development of the Airport's Contribution as of June 30, 2022 for FY 2024
(dollars in millions)

	WEIGHTED TOTAL AIRPORT	General	PEPRA	Executives
1. Total Normal Cost Rate as of June 30, 2022	**21.97%**	25.55%	17.72%	29.59%
2. Member Contribution Rate as of June 30, 2022	**9.78%**	9.92%	9.66%	9.63%
3. Employer Normal Cost Rate as of June 30, 2022 (1-2)	**12.19%**	15.63%	8.06%	19.96%
4. Actuarial Liability	**$ 272.0**	$ 236.5	$ 16.3	$ 19.2
5. Actuarial Assets	**$ 259.6**	$ 225.7	$ 15.5	$ 18.4
6. Total Unfunded Actuarial Liability (UAL) (4-5) [1]	**$ 12.4**	$ 10.8	$ 0.7	$ 0.9
7. Preliminary FY24 UAL amortization [1]	**$ 0.0**	$ 0.0	$ 0.0	$ 0.0
8. Negative Amortization Test for FY24				
a. Total UAL on 6/30/22 less FY23 UAL payment	**$ 11.6**	$ 10.1	$ 0.7	$ 0.8
b. Interest on 9a. To 6/30/23	**$ 0.8**	$ 0.7	$ 0.0	$ 0.1
c. Preliminary FY24 UAL amortization (line 7)	**$ 0.0**	$ 0.0	$ 0.0	$ 0.0
d. Negative interest (8b - 8c, not less than zero)	**$ 0.7**	$ 0.6	$ 0.0	$ 0.1
9. Total FY24 UAL payment on 7/1/23 (8c + 8d)	**$ 0.8**	$ 0.7	$ 0.0	$ 0.1
10. Total FY24 UAL payment throughout year	**$ 0.8**	$ 0.7	$ 0.0	$ 0.1
11. Total Expected Payroll for FY24	**$ 34.0**	$ 13.7	$ 19.0	$ 1.3
12. FY24 Normal Cost paid throughout the year	**$ 3.9**	$ 2.1	$ 1.5	$ 0.3
13. FY24 Normal Cost paid at start of year	**$ 3.8**	$ 2.1	$ 1.5	$ 0.3
14. Administrative Expenses paid throughout the year	**$ 0.4**	$ 0.2	$ 0.1	$ 0.0
15. Determination of FY24 ADC %				
a. Employer Normal Cost Rate (12 divided by 11)	**11.58%**	15.63%	8.06%	19.96%
b. UAL Rate (line 10 divided by line 11)	**2.29%**	4.93%	0.25%	4.16%
c. Admin Expense Rate (line 14 divided by line 11)	**1.18%**	1.75%	0.71%	2.05%
d. Total employer ADC % (15a + 15b + 15c)	**15.04%**	22.31%	9.01%	26.17%
16. Determination of FY24 ADC dollars				
a. FY24 ADC if paid throughout year	**$ 5.1**	$ 3.1	$ 1.7	$ 0.3
b. FY24 ADC if paid at beginning of year	**$ 5.0**	$ 3.0	$ 1.7	$ 0.3

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

SECTION V – CONTRIBUTIONS

Table V-2 shows information on each layer of the June 30, 2022 UAL.

Table V-2
SDCERS - Airport Authority
Schedule of Amortization Bases as of July 1, 2022
Used in Development of the Airport Authority's Contribution for FY 2024

Type of Base	Date Established	Initial Amount	Initial Amortization Years	July 1, 2022 Outstanding Balance	FY 2024 Outstanding Balance (BOY) [1]	Remaining Amortization Years	FY 2024 Amortization Payment (BOY)
1. Assumption Change	7/1/2008	$ 2,808,340	30	$ 3,203,123	$ 3,153,545	16	$ 249,430
2. Experience Gain	7/1/2008	(1,356,123)	15	(371,353)	(194,490)	1	(194,490)
3. Experience Loss	7/1/2009	9,892,984	15	3,839,641	2,681,020	2	1,362,580
4. Experience Gain	7/1/2010	(5,002,725)	15	(2,446,461)	(1,921,592)	3	(661,736)
5. Experience Gain [2]	7/1/2010	(1,750,000)	15	(855,795)	(672,191)	3	(231,481)
6. Experience Gain	7/1/2011	(4,235,009)	15	(2,446,647)	(2,049,668)	4	(537,999)
7. Assumption Change	7/1/2011	(574,045)	30	(653,081)	(648,828)	19	(45,191)
8. Experience Loss	7/1/2012	2,533,950	15	1,664,359	1,452,275	5	309,893
9. Method Change	7/1/2012	1,443,033	30	1,635,743	1,629,019	20	109,386
10. Experience Loss	7/1/2013	4,086,907	15	2,967,473	2,663,078	6	481,172
11. Assumption Change	7/1/2013	1,620,447	30	1,826,204	1,822,669	21	118,278
12. Experience Gain	7/1/2014	(2,736,843)	15	(2,159,767)	(1,978,426)	7	(311,304)
13. Experience Gain	7/1/2015	(2,751,012)	15	(2,322,876)	(2,161,420)	8	(302,322)
14. Assumption Change	7/1/2015	1,620,846	30	1,808,582	1,811,926	23	110,514
15. Experience Loss	7/1/2016	1,348,266	15	1,204,645	1,134,823	9	143,325
16. Assumption Change	7/1/2016	12,382,535	30	13,730,117	13,778,217	24	817,006
17. Experience Gain	7/1/2017	(4,573,974)	15	(4,286,781)	(4,078,741)	10	(470,915)
18. Assumption Change	7/1/2017	5,776,349	30	6,362,972	6,394,937	25	369,266
19. Experience Gain	7/1/2018	(3,877,943)	15	(3,784,889)	(3,630,890)	11	(387,058)
20. Assumption Change	7/1/2018	6,399,124	30	6,998,449	7,043,413	26	396,656
21. Experience Gain	7/1/2019	(2,337,296)	15	(2,361,663)	(2,281,211)	12	(226,381)
22. Experience Gain	7/1/2020	(2,471,967)	15	(2,570,756)	(2,497,738)	13	(232,339)
23. Assumption Change	7/1/2020	6,967,138	20	7,371,678	7,304,028	18	529,095
24. Experience Gain	7/1/2021	(12,994,918)	15	(13,839,588)	(13,514,245)	14	(1,185,235)
25. Experience Gain	7/1/2022	(2,124,178)	15	(2,124,178)	(2,262,250)	15	(188,007)
TOTAL				**$ 12,389,151**	**$ 12,977,260**		**$ 22,143**

[1] *July 1, 2022 outstanding balance adjusted to the FY2024 beginning of year (BOY), July 1, 2023.*
[2] *Reduction in UAL from anticipated impact of PSC correction as of the June 30, 2010 valuation.*

SECTION VI – ANNUAL COMPREHENSIVE FINANCIAL REPORT INFORMATION

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

The disclosures needed to satisfy the 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, 2022, issued on November 1, 2022.

Table VI-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, 2022
Investment Income	$ 1,005,288
Combined Liability Experience	(4,253,543)
Gain (or Loss) During Year from Financial Experience	$ (3,248,254)
Non-Recurring Gain (or Loss) Items (e.g., Contributions, Assumption Changes)	2,237,747
Composite Gain (or Loss) During Year	$ (1,010,507)

SECTION VI – ANNUAL COMPREHENSIVE FINANCIAL REPORT INFORMATION

Table VI-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)
2022	$ 17,282	$ 127,332	$ 127,382	$ 259,606	100%	100%	90.27%
2021	16,984	117,711	118,560	239,571	100	100	88.46
2020 [5]	16,376	104,825	118,558	214,923	100	100	79.05
2019	15,896	91,171	112,591	199,386	100	100	81.99
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 (Annual Supplemental Benefit), 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 7/1/2021	**357**	**77**	**86**	**3**	**134**	**8**	**28**	**693**
New Entrants	47	0	0	0	0	0	0	47
Returned to Work	0	0	0	0	0	0	0	0
Vested Terminations	(11)	11	0	0	0	0	0	0
Non-Vested Terminations	(18)	0	18	0	0	0	0	0
Retirements	(7)	(4)	0	0	18	0	(7)	0
DROP	(4)	0	0	0	0	0	4	0
Disabilities	0	0	0	0	0	0	0	0
New Continuants	0	0	0	0	0	4	0	4
New Dissolutions [1]	0	0	0	0	0	0	0	0
Deceased	(1)	0	0	0	(5)	0	0	(6)
Benefits Ceased [2]	0	0	0	0	0	0	0	0
Lump Sum Cashout	(8)	(3)	(2)	0	0	0	0	(13)
Transfers In/Out	(2)	(1)	0	0	0	0	0	(3)
Miscellaneous Adjustments	0	0	0	0	0	0	0	0
Participants as of 7/1/2022	**353**	**80**	**102**	**3**	**147**	**12**	**25**	**722**

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

[2] *Includes benefits that were terminated or suspended.*

APPENDIX A – MEMBERSHIP INFORMATION

Table A-2
SDCERS - Airport Authority
Active Member Data

	June 30, 2022	June 30, 2021	% Change
Count	353	357	-1.1%
Average Current Age	47.4	47.5	-0.2%
Average Service	10.0	9.8	2.0%
Average Pensionable Earnings	$ 93,064	$ 87,310	6.6%
Annual Pensionable Earnings	$ 32,851,491	$ 31,169,715	5.4%
Average Valuation Compensation[1]	$ 92,150	$ 86,302	6.8%
Annual Valuation Compensation[1]	$ 32,528,943	$ 30,809,714	5.6%
Average Service Without Purchased Service	9.9	9.7	2.1%
Members with Paid Purchased Service	14	19	-26.3%
Members with Any Purchased Service	14	19	-26.3%
Years of Paid Purchased Service	30	42	-30.2%
Years of Total Purchased Service	30	42	-30.2%

[1] *The definition of valuation compensation differs from pensionable earnings due to the PEPRA Compensation Limit per Gov. Code §7522.10.*

APPENDIX A – MEMBERSHIP INFORMATION

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

	Count			Average Age		
	June 30, 2022	**June 30, 2021**	**%Change**	**June 30, 2022**	**June 30, 2021**	**%Change**
Retired [1]	172	162	6.2%	67.8	67.3	0.7%
Disabled	3	3	0.0%	59.0	58.0	1.7%
Beneficiaries	12	8	50.0%	71.5	70.2	1.9%
Payee Total	187	173	8.1%	67.9	67.3	0.9%
DROP Participants	25	28	-10.7%	62.7	62.7	0.0%
Terminated [2]	182	163	11.7%	52.2	46.6	12.0%
Non-Vested < 5 yrs	102	86	18.6%			

[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, 2022	**June 30, 2021**	**%Change**	**June 30, 2022**	**June 30, 2021**	**%Change**
Retired [1]	$ 8,811,525	$ 8,151,071	8.1%	$ 51,230	$ 50,315	1.8%
Disabled	71,492	70,112	2.0%	23,831	23,371	2.0%
Beneficiaries	249,238	158,290	57.5%	20,770	19,786	5.0%
Payee Total	$ 9,132,255	$ 8,379,473	9.0%	$ 48,836	$ 48,436	0.8%
DROP Participants	$ 1,650,107	$ 1,656,272	-0.4%	$ 66,004	$ 59,153	11.6%
Terminated [2]	$ 4,557,478	$ 3,936,637	15.8%	$ 25,041	$ 24,151	3.7%

[1] *Includes DROP participants.*

[2] *Includes all participants having a contribution balance still on account with SDCERS. Annual benefit for terminated 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, 2022
Total Airport Authority

	Years of Service										Total	Average
Age	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	Count	Salary
Under 25	3	-	-	-	-	-	-	-	-	-	3	$ 54,917
25 to 29	11	7	2	-	-	-	-	-	-	-	20	72,021
30 to 34	9	17	8	2	-	-	-	-	-	-	36	73,683
35 to 39	7	13	16	3	-	-	-	-	-	-	39	79,867
40 to 44	1	8	19	6	8	1	-	-	-	-	43	91,010
45 to 49	2	9	13	5	17	3	1	-	-	-	50	98,053
50 to 54	5	9	11	14	17	9	1	1	-	-	67	101,854
55 to 59	4	5	13	8	9	6	4	1	-	-	50	105,468
60 to 64	-	2	8	7	8	6	1	1	-	-	33	103,261
65 to 69	-	1	1	3	3	1	-	-	-	-	9	95,359
70 and up	-	-	-	1	2	-	-	-	-	-	3	99,773
Tot Count	42	71	91	49	64	26	7	3	-	-	353	
Avg. Salary	$ 72,947	$ 83,446	$ 96,006	$ 94,798	$ 102,358	$ 107,607	$ 124,699	$ 86,607	$ -	$ -		$ 93,064

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-2013	-	-	1	-	7	16	13	3	1	-	41
2013	-	-	-	-	4	2	1	-	-	-	7
2014	-	-	-	4	1	8	-	-	-	-	13
2015	-	-	-	1	5	2	-	-	-	-	8
2016	-	-	-	5	7	2	1	-	-	-	15
2017	-	-	-	6	11	3	-	-	-	-	20
2018	-	-	3	-	10	3	-	-	-	-	16
2019	1	-	1	5	7	1	1	-	-	-	16
2020	-	-	4	10	6	1	-	-	-	-	21
2021	-	-	3	6	4	1	-	-	-	-	14
2022	-	-	3	6	3	4	-	-	-	-	16
Total	1	-	15	43	65	43	16	3	1	-	187

Average Age at Retirement/Disability	61.5
Average Current Age	67.9
Average Annual Pension	$ 48,836

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. Terms in quotations below are column headings in the data provided by SDCERS. 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 2022 Annual Compensation as provided in the supplemental file "SDCRAA FY23 Projected Compensation for SDCERS.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.

- "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. Inactive non-vested members without an account balance are excluded from the valuation.

- For Inactives, the "Final Average Salary" as provided in the Member file was used for calculating projected benefits as applicable. If this field was missing a value, the "Highest Pensionable Salary" as provided in the supplemental file was used. If an amount was not available in either of these, the maximum of the annualized pay over the prior year and the last four fiscal years' pensionable salaries was used.

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 Relation Order purposes. The “13th Check Supplement Amount” field is added as an annual benefit. 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” include COLA effective July 1, 2022.

- Members may retire and receive benefits from multiple plans (e.g., an Airport Authority Member could have also worked for the Port District); 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 assumptions used in this report reflect the results of an experience study performed by Cheiron covering the period July 1, 2015 through June 30, 2019 and adopted by the SDCERS Board in July 2020. This study is incorporated by reference as the rationale for both economic and demographic assumptions.

1. Investment Return

SDCERS' assets are assumed to earn 6.50% annually 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.

This assumption of 3.05% is also used for increasing the compensation limit that applied to PEPRA Members.

3. Administrative Expense

Administrative expenses are assumed to be $388,731 for FY 2024 (assuming payment at the beginning of the year), increasing by 2.50% annually.

4. Interest Credited to Member Contributions

6.50%, compounded annually.

5. Cost-of-Living Increase in Benefits

Assumed to be 1.9% per annum, compounded.

6. 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 Members, the normal cost of the COL annuity benefit is equal to one-sixth of the employee contribution rate.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

7. Member Refunds

All or part of the employee contribution rate is subject to potential "offset" by the employer. That "offset" and the related accumulated interest are not to be refunded to employees at termination. 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.

8. Salary Increase Rate

Salary inflation and merit increases are compounded rather than additive.

Inflation component: 3.05%

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

9. Rates of Termination

Table B-2
SDCERS - Airport Authority

Rates of Termination

Service	General
0	16.00%
1	14.00
2	10.00
3	9.00
4	8.00
5	7.00
6	6.00
7	5.00
8	5.00
9	5.00
10	4.50
11	4.50
12	4.50
13	3.00
14	3.00
15+	2.00

10% of terminating employees, with 5+ years of service at termination, are assumed to subsequently work for a reciprocal employer and receive 3.05% salary inflation 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	0.10
55	0.20
60	0.20

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

11. Rates of Mortality for Active Lives

Mortality rates for active members are based on the sex distinct 2010 SOA Public General Employees Amount-Weighted Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using a variation of Projection Scale MP-2019.

Projection Scale MP-2019 was modified using the Society of Actuaries' model improvement tool with rates converging in 2035 to an ultimate rate of improvement of 0.68% up to age 95, instead of 1.00% up to age 85 and 0.85% at age 95.

All active Member deaths are assumed to be non-industrial.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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

Mortality rates for healthy annuitants and beneficiaries are based on the sex distinct 2010 SOA Public General Healthy Retirees Amount-Weighted Mortality Table, without adjustment, with generational mortality improvements projected from 2010 using a variation of Projection Scale MP-2019.

Projection Scale MP-2019 was modified using the Society of Actuaries' model improvement tool with rates converging in 2035 to an ultimate rate of improvement of 0.68% up to age 95, instead of 1.00% up to age 85 and 0.85% at age 95.

13. Rates of Mortality for Retired Disabled Lives

Mortality rates for disabled annuitants are based on the sex distinct CalPERS Industrial Related Disability Retirees Mortality Table from the CalPERS December 2017 experience study, without adjustment, with generational mortality improvements projected from 2013 using a variation of Projection Scale MP-2019.

Projection Scale MP-2019 was modified using the Society of Actuaries' model improvement tool with rates converging in 2035 to an ultimate rate of improvement of 0.68% up to age 95, instead of 1.00% up to age 85 and 0.85% at age 95.

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-4
SDCERS - Airport Authority
Rates of Retirement by Age and Service

Age	Service < 20	Service 20+
52	25.0%	50.0%
53	25.0	50.0
54	25.0	50.0
55	25.0	50.0
56	7.5	15.0
57	7.5	15.0
58	7.5	15.0
59	10.0	20.0
60	12.5	25.0
61	17.5	35.0
62	25.0	40.0
63	25.0	45.0
64	30.0	50.0
65	30.0	100.0
66	30.0	100.0
67	25.0	100.0
68	25.0	100.0
69	25.0	100.0
70+	100.0	100.0

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:

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

PEPRA Members: Age 52

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

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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.

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 2.5%. Thereafter, it was assumed the account balance would be converted to an annuity at an interest rate of 2.9% 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 72, with an interest crediting rate of 2.5%. 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.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

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

Effective January 1, 2023, the DROP annuity rate used to convert the account balances to an annuity increased from 2.1%, to 2.9% reflect the Board's adoption of these rates at the November 2022 meeting.

Effective January 1, 2023, the DROP interest crediting rate used to value the liability for account balances increased from 0.8%, to 2.5% reflect the Board's adoption of these rates at the November 2022 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. Gains and losses are amortized over 15 years. Changes in assumptions and methods were being amortized over 30 years and are being amortized over 20 years as of June 30, 2019. Changes in benefits are amortized over 20 years (or period over which benefit changes are paid, if shorter). Funding surplus,

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

if any, is amortized over 30 years. Finally, if necessary, 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 $388,731 for FY 2024 (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. ASOP 56 - Modeling

Cheiron utilizes ProVal actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have a basic understanding of ProVal and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this valuation.

Deterministic projections in this valuation report were developed using P-Scan, a proprietary tool used to illustrate the impact of changes in assumptions, methods, plan provisions, or actual experience (particularly investment experience) on the future financial status of the Plan. P-Scan uses standard roll-forward techniques that implicitly assume a stable active population. Because P-Scan does not automatically capture how changes in one variable affect all other variables, some scenarios may not be consistent.

4. 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 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 Compensation 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 Port District employee on December 31, 2002, and became an Airport employee on or after January 1, 2003, and were employed by the Port District 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. Compensation is limited to the PEPRA Compensation Limit for members participating in the federal system. The PEPRA Limit for 2022 is $134,974 and for 2023 is $146,042. (Gov. Code §7522.32).

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).

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* *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%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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); or Current Accrual Factors

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

10 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).

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Benefit

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

6. Non-Industrial 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 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 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)

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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 SDCERS (§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, 2020 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. Based on the provisions of PEPRA and the methodology applied by SDCERS, if the aggregate total normal cost rate for the current active PEPRA members changes by more than 1% of payroll since the time the prior rates were established, then a recalculation of employee contribution rates is required. Since the current employee rates reflect the current actuarial assumptions, no recalculation is required with the June 30, 2022 valuation.

The assumptions used to calculate the employee contribution rates for PEPRA members are the same as reported in this June 30, 2022 actuarial valuation, with the exception of fully generational mortality improvement and any sex distinct assumptions. For the purposes of calculating the PEPRA employee contribution rates, mortality tables were blended 60/40 between male and female members and 40/60 for male and female beneficiaries. In addition, a static mortality improvement projection was used to approximate fully generational mortality improvements. A projection to 2048 using the mortality improvement scale described in Appendix B was used.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Table C-3
SDCERS - Airport Authority
Employee Contribution Rates

	Hired Before January 1, 2013 Integrated Members		Hired On or After January 1, 2013 Integrated Members	
Entry Age	First $400/Mo.	Over $400/Mo.	First $400/Mo.	Over $400/Mo.
20	5.52%	8.28%	3.75%	5.50%
21	5.59	8.38	3.75	5.50
22	5.66	8.49	3.75	5.75
23	5.73	8.60	4.00	6.00
24	5.80	8.70	4.00	6.00
25	5.89	8.83	4.00	6.25
26	5.97	8.95	4.25	6.25
27	6.04	9.06	4.25	6.50
28	6.12	9.18	4.50	6.75
29	6.20	9.30	4.50	6.75
30	6.28	9.42	4.75	7.00
31	6.37	9.55	4.75	7.25
32	6.45	9.67	5.00	7.25
33	6.53	9.79	5.00	7.75
34	6.61	9.91	5.25	8.00
35	6.70	10.05	5.50	8.25
36	6.79	10.18	5.75	8.75
37	6.88	10.32	6.00	9.00
38	6.97	10.45	6.25	9.25
39	7.05	10.58	6.25	9.50
40	7.15	10.72	6.50	9.75
41	7.24	10.86	6.75	10.00
42	7.33	10.99	6.75	10.25
43	7.42	11.13	7.00	10.50
44	7.52	11.28	7.25	11.00
45	7.61	11.42	7.50	11.25
46	7.71	11.56	7.75	11.50
47	7.81	11.71	8.00	11.75
48	7.91	11.86	8.25	12.50
49	8.01	12.01	8.75	13.25
50	8.10	12.15	9.25	13.75
51	8.21	12.32	9.50	14.50
52	8.31	12.47	9.75	14.75
53	8.42	12.63	10.00	15.00
54	8.53	12.79	10.25	15.25
55	8.63	12.95	10.25	15.50
56	8.74	13.11	10.50	15.75
57	8.87	13.31	10.75	16.00

APPENDIX C – SUMMARY OF PLAN PROVISIONS

14. Internal Revenue Code Compliance

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 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 Annual Supplemental 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 Annual Supplemental 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 Port District).

17. Annual Supplemental Benefit (13th Check)

When the fund's investment earnings are sufficient to qualify in a given year, SDCERS will calculate and pay the Annual Supplemental Benefit, also known as the "13th Check" to all eligible retirees. Survivors of eligible retirees will receive a proportionate share of this benefit.

18. 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.

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.

APPENDIX D – GLOSSARY OF TERMS

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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